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James Grainger's *The Sugar-Cane* and Naturalists' Georgic.

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James Grainger's *The Sugar-Cane* (1764) offers an aestheticised account of the cultivation of sugar and the management of a Caribbean plantation and its enslaved workforce. Scholars, while showing the poem's debt to Virgil's *Georgics*, have noted its role in representing colonial interests to a metropolitan élite by defending slavery through a vision of a reformed and supposedly humane plantation. Few, however, have paid attention to the poem's interest in natural history, explored both in the poetic text and in its copious footnotes. This chapter suggests that Grainger's 'West-India Georgic' marks a moment of transition in the conception of what georgic may perform, moving its concerns beyond simply the management of land already under cultivation to also include the work of engaging with the natural world. I argue that *The Sugar-Cane* is the type specimen of a species of poetry which I call 'naturalists' georgic', in which the poet describes, celebrates, or offers instruction in the rural labour of undertaking natural history. While the main text of *The Sugar-Cane* concentrates on the cultivation of the sugar cane and emulates or even imitates Virgil directly, the prose footnotes set up a competing natural history in which the fruits of empirical observation and scientific reading often undercut the more aestheticised depiction of sugar cultivation offered in verse. This interplay is an element of what Terry Gifford (2020) has called 'the pastoral common tension between wild and cultivated', but whereas Gifford argues that georgic is 'one pole' of this antagonism (149), I suggest that naturalists' georgic restores the tension. It is thus allied to, but an extension of, David Fairer's (2011) notion of the 'eco-georgic'. Fairer, noting 'the mixed character of georgic', argues that 'in georgic, human beings can "learn from" nature in the very act of "imposing on" it' (208). Naturalists' georgic may indeed represent natural history activities taking place alongside or in the service of agriculture, as is usually the case in *The Sugar-Cane*, but may also show naturalists working in less cultivated settings. If georgic in its Virgilian mode seeks to empower farmers to overcome nature, and Fairer's 'eco-georgic' shows farmers working with or learning from nature, the naturalists' version may labour to observe and understand nature without necessarily seeking to profit from it. Nevertheless, both farmers' and naturalists'

georgics are concerned with rural labour and rural science, be it the science of agronomy or husbandry on the one hand or botany and zoology on the other. Grainger's *Sugar-Cane*, with its scientific apparatus and interest in wildlife, is a fruitful place to begin an exploration of this tradition.

James Grainger, *The Sugar-Cane*, and natural history

James Grainger (c.1721–1766) was not an obvious candidate to write what he described in the poem's preface as a 'West-India georgic'. Born in Duns in the Scottish Borders, he trained as a doctor in Edinburgh before moving to London to pursue a career as a writer, at which he was only partially successful. In 1759, he left for the British Caribbean colony of St Kitts where he practised as a doctor, married, and bought enslaved people to work for him while he amused himself with botany and poetry (Gilmore 2000, 2–21). The allure of literary fame remained strong, however, and in 1763 he made the long and hazardous voyage back to London, apparently simply to find a publisher for *The Sugar-Cane*. He became the subject of a famous anecdote which has long been the main way in which he is remembered. According to James Boswell, in his *Life of Samuel Johnson*, Grainger read a draft of *The Sugar-Cane* to a group of literary 'wits' who 'all burst into a laugh' when Grainger reached the line 'Now, Muse, let's sing of rats.' Worse still, 'what increased the ridicule was, that one of the company, who slyly overlooked the reader, perceived that the word had been originally MICE, and had been altered to RATS, as more dignified' (Boswell 1964, II, 453–4, 533). As John Gilmore has shown, a line addressed to the muse which reads 'say shall she sing of mice?' appears only in a manuscript version that survives at Trinity College, Dublin, and was omitted in the published version. The manuscript line is in any case followed by another that asserts that 'great Homer deign'd to sing of little Mice': a contrast that is not merely accidentally bathetic, as Boswell implies, but deliberately mock-epic (Gilmore 2000, 199–201). The incident did not prevent the poem being published shortly after, and Grainger returned to St Kitts, where he set himself up in a fine house with a spacious library, no doubt intending further literary work, although he died of a fever in December 1766.

Gilmore's reading suggests that Grainger was not the ludicrous figure of Boswell's anecdote but instead a controlled author with a command of classical poetry. This is borne out by the poem itself, which consists of 2562 lines divided into four books that correspond closely to those of Virgil's *Georgics*, albeit with the scene of rural labour transposed from an Italian farm to a Caribbean plantation. As Gilmore (2000) has shown, 'many aspects of *The*

Sugar-Cane are based on conscious imitation of Virgil's *Georgics*' such that Grainger often adheres meticulously to Virgil, sometimes approaching direct translation with the substitution of West-Indian place and species names (29). Grainger sets out the poem's structure and method in opening lines that closely mirror the opening lines of Virgil's *Georgics*:

What soil the Cane affects; what care demands;
Beneath what signs to plant; what ills await;
How the hot nectar best to christallize;
And Afric's sable progeny to treat: [...]
(Grainger 1764, 3)

These lines are concisely descriptive. The first summarises the argument of Book 1, which covers the soil and climate, compost and fallowing, and planting and weeding the sugar cane. The second corresponds to the second book, which covers the diseases and pests of the sugar cane. Line and Book 3 describe cutting the cane and the process of refining it into sugar. The final book is concerned with the management of the enslaved workers who actually performed the hard physical labour described in the earlier books. Thus, while resembling Virgil's *Georgics* in structure, *The Sugar-Cane* diverges from it substantially in content. Perhaps the most egregious example is Book 4. Where Virgil had described the labour of bees making honey, Grainger portrays the labour of enslaved Africans making sugar.

Some changes are of course inevitable in relocating georgic from classical Italy to modern St Kitts but, while Grainger described the poem neutrally as 'West-India georgic', recent critics have been forthright in calling it 'imperial georgic', a description fully justified by the poem's depiction of colonial coercion and control (O'Brien 1999). This is the more insidious since the poem offers a vision of a reformed and supposedly humane plantation, placing it in the mid-eighteenth-century tradition of 'amelioration literature' in which authors, both of literary and non-fiction writing, suggested that the suffering caused by slavery was not inherent to the system but could instead be ameliorated by good management. While superficially humane, such literature in fact served the interests of planters by reassuring metropolitan readers that all was well in the colonies and that slavery needed only reform, not abolition. As Markman Ellis (2005) has noted, 'the apparent addressee of the "West-India georgic" is the planter in the colonies, but the implied audience is the metropolitan political and literary elite' (49). Anna M. Foy (2017) agrees the audience is metropolitan, but her analysis of the poem's manuscript suggests that Grainger moderated his initial high praise for

the planters better to suit that audience and to position himself as ‘a would-be philosopher who attempted to view the plantation system from an impartial perspective’ (710). In the face of growing opposition to slavery in the 1760s, however, attempted impartiality could be taken for complicity. In our times, Grainger’s apparent role as an apologist for slavery has paradoxically brought him back into critical focus but not into critical favour. ‘There has been a robust and growing body of scholarship about Grainger and his work’, notes Christobal Silva (2016), ‘though this revival has admittedly done little to burnish his reputation as a poet’ (127).

While recent critics have mainly been interested in the poem as imperial georgic, Grainger clearly signals his interest in natural history throughout the poem, both as fieldwork and as literary study. Natural history can be broadly defined as the study of the physical and biological world through observation, description, and classification, but it can also be considered as a literary genre with its own formal conventions and intertextual networks. While natural history today is mostly associated with the study of biological organisms, eighteenth-century naturalists investigated the Earth sciences more broadly, advancing knowledge in geology, meteorology, and hydrology as well as biology. Although not primarily experimental, natural history underwent a period of considerable expansion closely allied to the rise of experimental science from the early seventeenth century onwards. The same period saw significant and related intellectual and practical investment in agricultural science, leading some critics to argue that the eighteenth-century georgic revival can be correlated with the agricultural revolution (Feingold 1978, 3-8)—although Anthony Low’s (1985) contention that the ‘the georgic revolution in the seventeenth century ... preceded and was directly responsible for the well-known Agricultural Revolution of the eighteenth’ is considerably overstated (119). Eighteenth-century georgic must, however, be considered alongside developments in agricultural science, both in husbandry and in what today is known as agronomy, many of which were correlated with increasing knowledge in natural history.

The traditional focus, in British historiography at least, on the English agrarian revolution underplays the fact that many of the most radical innovations in eighteenth-century agriculture were taking place in novel environments that were simultaneously subject to the imperial and the scientific gaze. The sugar plantation, a tropical cash-crop monoculture using forced labour to profit transnational agribusiness, was the most radical of all. Naturalists described the fauna and flora of Britain’s Caribbean colonies in increasing detail from the mid-seventeenth century onwards, but the economic basis of their scientific curiosity is

evident from the fact that the longest botanical entry in many early modern or eighteenth-century Caribbean natural histories is the sugar cane. The footnotes to Grainger's *Sugar-Cane* reference much of this literature, but his most conspicuous source is an agricultural handbook, *An Essay Upon Plantership*, written in 1750 by the prominent Antigua planter Samuel Martin (1694–1776) and the century's most substantial discussion of the theory and practice of plantation management as well as a source, directly or indirectly, for much ameliorationist literature. Grainger's reliance on Martin is both overt and acknowledged. 'An Essay, by Colonel Martyn of Antigua is the only piece on plantership I have seen deserving a perusal', he asserts in his preface. 'That gentleman's pamphlet is, indeed, an excellent performance; and to it I own myself indebted.' (Grainger 1764, n.p.) Nevertheless, Grainger's reliance on Martin is not absolute and in several places in the poem there is a conflict between reliance on Martin in the verse and natural historians in the footnotes.

Grainger education was both cultural and scientific. He was trained as a doctor and was an active medical researcher as well as a practitioner, publishing an *Essay on the more common West-India diseases* in the same year as *The Sugar-Cane*, the fourth book of which itself contained long passages on the treatment of yaws, dropsy, smallpox, melancholy, and parasitic worms. Some critics have seen the medical passages in *The Sugar-Cane* as a trope of empire. For Grainger and others, argues Steven W. Thomas, 'medicine was both a metaphor and a practical tool for curing the British Empire of its political diseases. Unable to reconcile the contradictions of slavery, freedom, and the problem of labor within the imperial project, they compromised to advocate an efficient, caring, medicated empire' (Thomas 2006, 111). Grainger himself asked the reader to consider the poem at least in part as a medical text. In his preface, he argues that 'medicines of such amazing efficacy, as I have had occasion to make trials of in these islands, deserve to be universally known. And wherever, in the following poem, I recommend any such, I beg leave to be understood as a physician, and not as poet' (Grainger 1764, n.p.). Grainger's notes are, however, almost entirely botanical rather than explicitly medical. For this reason, it is surprising that Grainger's natural history has not been widely considered, although Monique Allewaert (2017) examines his personification of insects in Book 2 of the poem while Britt Rusert (2015) notes that *The Sugar-Cane* 'celebrates England's recent territorial conquests as well as the Caribbean environment itself' (342). Rusert continues to see Grainger primarily as a 'poet-physician', however, rather than as a 'poet-naturalist', even though the two are not incompatible. Grainger was practising at a time when medicine was starting to embrace new practices and ideas enabled by experimental science and improving technology, but in daily practice most doctors looked

backwards to humoral theory and traditional remedies. Reliance on herbal medicine meant that many doctors were also competent botanists, and the route from medicine to natural history was a recognised one followed by such heavyweight naturalists as Hans Sloane (1660–1753) and Carl Linnaeus (1707–78). While Grainger asks to be ‘understood as a physician’, contemporary readers also understood him as a botanist. Writing in *The Monthly Review*, John Langhorne (1735–79) praised Grainger for the ‘liberal and diffusive pains he has taken, in his Notes on this poem, to enlarge the knowledge of the West-Indian botany’ (Langhorne 1764, 106).

The *Sugar-Cane* as a naturalist’s georgic

What I call a ‘naturalist’s georgic’ describes, celebrates, or offers instruction in the business of doing natural history. As with Grainger’s *Sugar-Cane*, it may do so alongside representations of husbandry and crop management and natural history may not even be the most prominent activity. Nevertheless, natural history must in some way emerge from, overlay, or be otherwise discernible as distinct field of representation from that of agriculture. This is indeed the case in numerous passages in *The Sugar-Cane*. The first, and one of the most significant, comes early in Book 1 where Grainger discusses the process of tree clearance when establishing a new plantation:

Let thy biting ax with ceaseless stroke
The wild red cedar, the tough locust fell:
Nor let his nectar, nor his silken pods,
The sweet-smell’d cassia, or vast ceiba save.
Yet spare the guava, yet the guaiac spare;
A wholesome food the ripened guava yields,
Boast of the housewife; while the guaiac grows
A sovereign antidote, in wood, bark, gum,
To cause the lame his useless crutch forego,
And dry the sources of corrupted love.
Nor let thy bright impatient flames destroy
The golden shaddoc, the forbidden fruit,
The white acajou, and rich sabbaca:
For, where these trees their leafy banners raise

Aloft in air, a grey deep earth abounds,
 Fat, light; yet, when it feels the wounding hoe,
 Rising in clods, which ripening suns and rain
 Resolve to crumbles, yet not pulverize:
 In this the soul of vegetation wakes,
 Pleas'd at the planter's call, to burst on day.
 (Grainger 1764, 6–8)

The lengthy, back-breaking business of tree-clearance and grubbing is antecedent to agriculture but may also be considered as a branch of silviculture, or forestry. Many European woods and forests had been carefully managed for millennia, giving rise to complex cultures and practices and an emerging technical literature, perhaps most famously expressed in John Evelyn's 1664 *Sylva, or a Discourse of Forest Trees*. This urged reforestation rather than clearance but also included detailed information on pruning, coppicing, and felling. None of this appears in *The Sugar-Cane*. The 'biting ax' and 'bright impatient flames' are the only tools mentioned, suggesting that Grainger is describing 'slash and burn' clearance in which the felled trees are burned on site so that the stumps are destroyed without grubbing and the ash fertilises the soil, preparing, at least for a few years, 'a grey deep earth' ready for the 'wounding hoe'. Grainger's description is vague and assumes prior knowledge which his metropolitan readers may not have had and from which its Caribbean readers would have learned little. Indeed, if georgic is the practical poetry of agricultural instruction, this passage singularly fails to deliver. Where it succeeds, however, is in its culinary, medical, and botanical interpretation of the landscape. Grainger reads the forest as a naturalist, paying attention to the species that are naturally present rather than those that are to be planted. The guaiac (the roughbark lignum-vitae, *Guaiacum officinale*), we learn, is a remedy for lameness and sexually transmitted disease. The shaddock (the pomola or wild grapefruit, *Citrus maxima*) is 'golden' while the acajou (the cashew, *Anacardium occidentale*) is 'white'. The sabbaca (the avocado, *Persea americana*) is 'rich'. The guava (*Psidium guajava*) is the housewife's choice. The range of species gives some indication of the diversity of a tropical woodland. As with the fruit, the various trees are identified by their defining characteristic. The locust (*Hymenaea courbaril*) is 'tough', the cassia (*Cassia fistula*) has sweet-smelling nectar, and the ceiba (*Ceiba pentandra*) is 'vast' with 'silken pods'—today harvested commercially as kapok, which, in a lengthy footnote, Grainger observes is used 'to stuff pillows and mattresses' and 'might be made an article of

commerce' (Grainger 1764, 7). The strength of this passage lies in its botanical rather than its agricultural knowledge, supported by detailed and extensive footnotes.

These footnotes are not mere asides. The 149 words of these 20 lines of verse, which could have been accommodated on a single page, in fact span three pages. They are accompanied by over a thousand words of footnote which threaten to overwhelm the verse. Despite their prominence, these notes have largely been ignored by later readers. They were omitted completely in many editions of the poem or, as in the 2000 edition edited by Gilmore, converted to endnotes. It is nonetheless hard to conclude that Grainger saw them as anything other than essential to his project. The 136 notes to the poem are particularly prolific in the first book, which has 49 notes, many of which span several pages. Book 2 has a more modest 32 notes and Book 3 just 24, but there is a return to form in Book 4, which has 31. Some of the notes are very focused while a few cover multiple topics and multiple pages. Three are primarily biographical, four mainly ethnographic, and another four predominantly historical. *The Sugar-Cane* may be an agricultural poem written by a doctor, but that is not well reflected in the notes. Only five are solely concerned with medicine, although medical information is contained inter alia in several others, while just fifteen discuss agriculture or food processing, in both cases mostly but not solely of sugar, the ostensible subject of the poem. The remaining 105 notes are in the domain of natural history. Grainger offers 22 notes on a medley of geographical topics including topography, geology, soil, and climate, but 83 are biological, with 21 zoological and 62 botanical notes. If extracted and read separately, the notes offer something approaching a natural history of St Kitts.

Virgil is not mentioned in the notes, but the Elder Pliny (ca. 23–79) is one of the main sources cited at the outset of the poem's first footnote, a three-page-long essay on the history of sugar. This signals that while the verse is in the tradition of Virgil's *Georgics*, the notes are indebted to the tradition of Pliny's *Naturalis historia*, a compendious work akin to an encyclopaedia but nonetheless the foundational text of natural history writing. Thus, on a purely formal level, the notes can be read as a parallel rather than as a competing text emerging from an equally venerable classical tradition. While Pliny occupies a prominent position, he is only one of many sources, some of which are explicitly cited but most of which are neither named nor acknowledged. The few names Grainger drops give us some clue as to what was in his library. In addition to a smattering of ancient authors, he names little more than a dozen sources. Acosta, Edwards, Labat, Linnaeus, 'Mr. Maupertius', Plumier, Ray, and Ulloa are all mentioned only by surname leaving the reader to work out their identity and the publications concerned. Other references are a little more helpful but

hardly models of bibliographic good practice. Grainger identifies ‘Newman’s chemistry published by Dr Lewis’, ‘Sir Hans Sloane’s Natural History of Jamaica’, ‘Dr Stork, at Vienna, in a late publication’, and ‘Ogilvy’s America’ (Grainger 1764, 59, 64, 146, 148). Gilmore identifies most of these authors in his notes to the poem. Many, including Cristóbal Acosta (c.1525–c.1594), Jean-Baptiste Labat (1663–1738), Charles Plumier (1646–1704), John Ray (1627–1705), Carl Linnaeus, and Hans Sloane are heavyweight natural historians, several of whom had spent time in the Caribbean. Others are more obscure. The name ‘Ogilvy’ is a spelling error; Grainger means the cartographer John Ogilby (1600–1676), whose account of America published in 1670 contained natural history. Gilmore identifies Dr Stork as Anton Freiherr von Störk (1731–1803), a Viennese doctor, but draws a blank with ‘Newman’s Chemistry’ (Gilmore 2000, 303, 249). Grainger is in fact referring to *The Chemical Works of Caspar Neumann* (1683–1737), translated and abridged by William Lewis in 1759. Curiously, what appear to be Grainger’s two main sources are not mentioned at all in the footnotes. The first is Martin’s *Essay upon Plantership*. The second appears to have been the important, if flawed, *Natural History of Barbados* written by the Welsh clergyman Griffith Hughes in 1750. Gilmore (2000) notes that Grainger ‘never mentions’ Hughes but that ‘a few of the details in his notes may have been lifted from this source’ (22). In fact, Grainger lifted more than details. Grainger takes from Hughes the practice of supporting botanical observation with quotation from poetry, especially Milton, and the habit of using colloquial rather than Latin names to describe species—a practice for which Hughes was roundly condemned by John Hill in the *Monthly Review* (Hill 1750, 200) and for which Grainger was similarly criticised by Langhorne (Langhorne 1764, 106). In addition, the much-reproduced frontispiece to the poem, a drawing of a single sugar cane, is copied exactly from Hughes’s illustration of sugar and maize (Hughes 1750, 252). The sources, like the footnotes, are overwhelmingly skewed towards natural history and demonstrate that study of the natural world was occupying Grainger’s attention as much as if not more than agriculture and medicine during the composition of the poem.

Just as agriculture is often in conflict with nature, so the footnotes are often in tension with the poetic text. This is apparent from the start. In the tree-felling extract, Grainger encourages would-be planters to fell red cedar, locust, cassia, and ceiba. The footnotes, however, tell another story. Cedar wood, says Grainger, is ‘highly useful for many mechanical purposes, and but too little planted’. The locust ‘produces a not disagreeable fruit’ and is ‘a serviceable wood’. The ceiba, as we have seen, is the source of kapok, which Grainger thought should become ‘an article of commerce’, as indeed it has (Grainger 1764,

6–7). In the (admittedly unlikely) event that any planter used *The Sugar-Cane* to determine which trees to clear and which to plant, they would have been confused. This tension becomes more apparent in Book 2 of the poem, which Monique Alleweart (2017) points out Grainger told friends was his favourite of the four (299). The opening lines proclaim that it will turn aside from the business of clearing, hoeing, manuring, and planting:

Enough of culture.—A less pleasing theme,
What ills await the ripening Cane, demands
My serious numbers.
(Grainger 1764, 53)

Thus Grainger explicitly turns his attention to natural phenomena. The first half of the book covers biological pests of the sugar cane including monkeys, rats, weeds, and insects. The second half describes the physical hazards of hurricane, drought, earthquake, and tsunami, culminating in the story of Junio and his lover Theana, who dies after being struck by lightning in a tropical storm (Junio expires from an attack of acute sensibility a few moments later). Meteorological and geological phenomena fall within the domain of natural history, but the biological sections reveal Grainger's interests more clearly. While weeds and pests are the bane of farmers, for naturalists they are simply competitor species that can be observed and described like any other. Book 2 can thus be read primarily as natural history, and this brings the poem into further tension with the georgic mode. Grainger's discussion of the insect pest known as 'the blast' (the canefly, *Saccharosydne saccharivora*) illustrates this well. In his *Essay upon Plantership*, Martin (1750) had argued that 'it be a *fact* that the blast commits most ravage in a poor land, and affects not the luxuriant Sugar-Canes of a rich soil; the cure of that evil is certain and obvious: *manure and cultivate* your lands so as to become rich and fruitful, and you will for ever prevent the blast' (33). Grainger is less optimistic, presenting the attempt as an unwinnable battle with an implacable invader:

And pity the poor planter; when the blast,
Fell plague of Heaven! perdition of the isles!
Attacks his waving gold. Tho' well-manur'd;
A richness tho' thy fields from nature boast;
Though seasons pour; this pestilence invades.
(Grainger 1764, 65)

Despite the dire implications for the planter, Grainger's interest is primary entomological rather than agricultural. He describes the work of a naturalist, carefully observing the lifecycle of the cane fly using scientific instruments and a scientific vocabulary. He describes how the green leaves of the sugar cane:

First pallid, sickly, dry, and withered show;
Unseemly stains succeed; which, nearer viewed
By microscopic arts, small eggs appear,
Dire fraught with reptile-life; alas, too soon
They burst their filmy jail, and crawl abroad.
(Grainger 1764, 66)

These are not random observations, nor are they merely poetic. Allewaert (2017) notes that the trope of the 'microscopic eye' draws on famous lines from 'Summer' in James Thomson's *Seasons*, published in 1727 (311). The poetic allusion is certainly present, but the detail suggests that Grainger examined the cane fly eggs and larvae himself under a hand lens or microscope, the latter an expensive piece of equipment that one would be unlikely to acquire by chance. The diseased plant is described precisely, and the eggs are observed at regular intervals until the larvae emerge. The account is not merely of the life of the cane fly but also of a naturalist at work, offering instruction by example in the processes of natural history. In the following pages, the account grows more complex as Grainger describes a symbiotic relationship between the cane fly and ants, which together create a conquering army of 'bugs confederate, in destructive league' (Grainger 1764, 66), which Allewaert (2017) observes is an example of Grainger's 'insect personification' (312). In less poetic terms, albeit with some paradox, these confederate insects are most dangerous because they are divided into numerous independent units which must be dealt with one by one by the plantation's defending army of enslaved labourers. Planters hopeful of success must:

Command their slaves each tainted blade to pick
With care, and burn them in vindictive flames.
Labour immense!
(Grainger 1764, 67–8)

He concludes, somewhat hopelessly, that burning the entire crop may be the only remedy: ‘Far better, thus, a mighty loss sustain, / Which happier years and prudence may retrieve’ (Grainger 1764, 67–8). In Grainger’s analysis, the blast is quite literally a force of nature, a ‘plague of Heaven’, which agriculture is powerless to overcome but which attracts the detailed observation of the naturalist. Nevertheless, georgic’s agricultural imperative wins through. Although dismissing manuring as an ineffectual cure in verse, Grainger reverts to Martin’s authority in a footnote and concedes that ‘it must, however, be confessed, that the blast is less frequent in lands naturally rich, or such as are made so by well-rotted manure’. (Grainger 1764, 65) While the footnote more successfully offers the georgic element of useful advice to planters on managing the blast, the poetic text reads as a naturalist’s georgic, depicting an ecological conflict between cane, canefly, ant, and planter as observed by a practised and self-conscious naturalist.

These examples demonstrate a tension between the poetic text and its apparatus, but the two are not always in tension. In some cases, both the verse and the notes agree in suggesting that Grainger was in full transition from poet to naturalist. The quantity of natural history reading attested to in the footnotes is one clue to Grainger’s intellectual interests at this period. He has, for example, a naturalist’s interest in reading about birds, such as when he describes the ‘swift-wing’d zumbadore’ for poetic effect in verse, revealing in the footnote that the bird lives ‘on the desert tops of the Andes’ rather than the cane fields of St Kitt’s, and ‘is also called *Condor*’ (Grainger 1764, 46). Despite its prodigious size, the Andean condor (*Vultur gryphus*) could not have been spotted from St Kitt’s. His source is ‘Ulloa’s Voyage to South-America’; presumably the 1758 English translation of *Relacion historica del viage a la America Meridional*, originally published in 1748 by the Spanish explorer and scientist Antonio de Ulloa (1716-95). Grainger’s interest in ornithology as a literary genre is, however, matched by his own practice in the field. A little before the condor passage he describes the hummingbird, a bird

Whose burnish’d neck bright glows with verdant gold;
 Least of the winged vagrants of the sky,
 Yet dauntless as the strong-pounc’d bird of Jove;
 With fluttering vehemence attack thy cups,
 To rob them of their nectar’s luscious store.
 (Grainger 1764, 37)

The depiction of the bird as a nectar-pilfering pest is a nod to the georgic and its requirement for useful agricultural knowledge, while the decorous reference to the eagle as the strong-taloned ‘bird of Jove’ fits the classical register, but the description of the bird’s size and colour is ornithological. It is supported by a 140-word footnote comparing descriptions in Ulloa and Edwards—presumably, as Gilmore (2000, 236) points out, George Edwards (1694–1773), author of *A Natural history of uncommon birds*, published in four parts between 1743 and 1751. Grainger is not, however, content to rely on their accounts. Instead, he describes his own observations of the birds and his attempts to seek out those he has read about. The bird he knows from St Kitt’s is the Antillean crested hummingbird (*Orthorhyncus cristatus*) which ‘though not so frequent, is yet more beautiful than the others. It is chiefly to be found in the woody parts of the mountains’ (Grainger 1764, 37). The bird is actually a lowland species, but the fact that Grainger mainly observed it in the mountains points to the loss of its habitat as lowland woods and scrub were grubbed up to plant cane. The species was described by Edwards (Edwards 1743, 1, 37) but Grainger clearly used the information to seek out living examples as in the same footnote he also records that ‘Edwards has described a very beautiful humming bird, with a long tail, which is a native of Surinam, but which I never saw in these islands’. Although his search was fruitless, the fact that he searched at all reveals him as an active natural historian, balancing fieldwork with reading, and relaying his observations both decorously in verse and usefully in prose. *The Sugar-Cane* is certainly the West-India georgic it claims to be and the imperial georgic others have named it, but it is also a naturalist’s georgic, describing, celebrating, and offering instruction by example of the way to do natural history in St Kitts.

Naturalists’ georgic beyond *The Sugar-Cane*

It is reasonable to ask whether *The Sugar-Cane* stands alone as the only naturalist’s georgic or whether there are others, or even an entire tradition. There is of course a very long tradition of nature poetry, but to stand distinct from this a naturalist’s georgic must in some way either attach natural history to agricultural georgic or celebrate the rural labour done by naturalists. This makes naturalists’ georgic a rare species, but it is not altogether endangered. Some well-known poems of the eighteenth and nineteenth century might be included wholly or partially in this category. In *The Botanic Garden* (1791), for example, Erasmus Darwin (1731–1802) joined Grainger in garlanding a long poem with numerous ‘philosophic notes’, in Darwin’s case ‘to inlist Imagination under the banner of Science’ and ‘induce the

ingenious to cultivate the knowledge of Botany' (Darwin 1791, v). The aim, as with georgic, is clearly didactic and the location of the poem—a garden—sufficiently affiliated with agriculture to ally the poem with georgic, but while *The Botanic Garden* is clearly a naturalist's poem, it is too various and eccentric to easily fit the mould of georgic.

A better example, perhaps, is *The Task*, another long and eclectic poem, albeit one without 'philosophic notes', published in 1785 by William Cowper (1731–1800). The poem's title refers not to rural labour but to the task set him by a friend of composing a poem on the theme of the sofa. This indeed forms the subject of the opening pages, but the poem soon rambles away into the countryside, producing some of the best-known nature poetry of the eighteenth century. Some sections, such as the advice to gardeners on growing cucumbers in Book 3, clearly nod to Virgil's *Georgics*. Others celebrate the pleasure rather more than the labour of rural life. Nevertheless, some critics, for example Dustin Griffin, have argued that *The Task* qualifies as georgic in a looser rather than a strictly Virgilian sense (Griffin 1990, 867). We may also identify it as a naturalist's georgic if we consider natural theology, the belief that study of creation could offer insights into the nature of the creator, to be a legitimate branch of natural history. In an extended passage in Book 3, Cowper questions what this means for the relationship between science and religion. He argues that 'God never meant that man should scale the heav'ns / By strides of human wisdom'. Noting that astronomers have looked at the heavens through telescopes but not found God, he invokes 'Newton, childlike sage! / Sagacious reader of the works of God' to argue that 'Philosophy baptized / In the pure fountain of eternal love / Has eyes indeed' (Cowper 1785, III, 221–60). In Book 5, in another extended passage, he compares those for whom 'The landscape has his praise, / But not its author' with sheep who 'graze the mountain-top with faces prone' and 'Ruminate heedless of the scene outspread'. The passage reads as a parody of the pastoral, but it is georgic in that it offers natural theology as a method for engaging with the landscape: 'Acquaint thyself with God if thou would'st taste / His works' (Cowper 1785, V, 779–844). *The Task* is thus both a naturalist's georgic itself and a satire of naturalists' georgic; a paradox made possible both by its miscellaneous form and by its adherence to the methods of natural theology.

Although now generally considered as antiscientific, even (or especially) when it rebrands itself as 'creation science', natural theology was before the mid eighteenth century the guiding principle for most naturalists. Among these, Gilbert White (1720–93), whose *Natural History of Selborne* (1789) collated letters to fellow naturalists, was among the most widely read. His poetry is rarely considered even though 'he was a keen consumer of both

ancient and modern literature, poetry in particular’ whose ‘particular favourite’ was Virgil (Carey 2020, 177). White’s own poetry includes ‘The Naturalist’s Summer-Evening Walk’, which appeared in the 1789 first edition, as well as six poems added to the important 1813 edition edited by his nephew John White. Although considerably shorter and less instructional than Virgilian georgic, many of the poems celebrate the rural labour of a naturalist at work within a framework of natural theology and can be considered as naturalist’s georgic in both inspiration and execution. In ‘On the Rainbow’, for example, White echoes Cowper’s criticism of those who, like sheep, ‘Ruminate heedless’ on the mountain top. White’s poem compares an ‘unconscious swain’ who observes a rainbow ‘With vacant eye’, with ‘the sage’ who ‘inspired with pious awe ... Adores that God, whose fingers form’d this bow’ (White 1813, 568) This sage is, it appears, like White himself, both a scientist and a clergyman, a persona which resurfaces in other poems. In ‘On the dark, still, dry, warm weather occasionally happening in the winter months’, White contrasts the thoughtless responses of the ploughman, the gardener, the ‘happy schoolboy’, and the birds themselves to unseasonal weather with that of the naturalist:

Not so the museful sage:—abroad he walks
 Contemplative, if haply he may find
 What cause controls the tempest’s rage, or whence,
 Amidst the savage season, Winter smiles.
 (White 1813, 568)

The naturalist at work is the subject of White’s best-known poem, ‘The Naturalist’s Summer-Evening Walk’, which begins with a deliberate misquotation from Virgil’s *Georgics*. White offers ‘*equidem credo, quia sit diuinitus illis ingenium*’, translated by H.R. Fairclough as ‘methinks that they have wisdom from on high’ (Fairclough 1999, 129). White omits the word ‘*haud*’, or ‘not’, from the start of this sentence, however, which reverses its meaning thereby aligning Virgil with his natural theology. The poem consists of 44 lines and seven largely zoological footnotes and describes the musings of the naturalist walking on a summer evening and observing birds, bats, and insects. Spotting some swallows, the naturalist asks:

Amusive birds!—say where your hid retreat
 When the frost rages and the tempests beat;
 Whence your return, by such nice instinct led,

When spring, soft season, lifts her bloomy head ?
Such baffled searches mock man's prying pride,
The God of Nature is your secret guide!
(White 1813, 69)

The question of whether swallows migrate or hibernate obsesses White throughout *Selborne*, but here it is portrayed as a central intellectual labour both for clergyman and naturalist. The poem abounds with the active vocabulary of a naturalist at work. The evening is 'the time to steal adown the vale', to 'listen to' the cuckoo, 'to hear' the curlew, 'to see' the swallow, 'to mark' the swift, and then, after musing on migration, to repeat all these actions in respect of insects (White 1813, 69). Adopting the theory of natural theology and the observational method of natural history, the poem describes and celebrates the work of the naturalist while instructing the reader, via its footnotes, in the phenology and typology of the organisms under investigation. After Grainger's *Sugar-Cane*, this is the clearest example of naturalist's georgic from the eighteenth century.

Beyond the eighteenth century, and beyond poetry, we can identify many texts that may qualify as naturalists' georgics in the broadest sense. There is not room here for discussion, but we can certainly, for example, recognise georgic elements in the poetry of John Clare (1793–1864) who writes both about agricultural labour and his own practice as an observer of wildlife. Numerous poets in the twentieth and twenty-first centuries have described interactions with wildlife that go beyond chance encounter and are more akin to scientific observation. Poetic accounts of birdwatching are particularly common, although less so than poetic depictions of birds themselves. Beyond poetry, if we accept that georgic can be a mode as well as a poetic form, we may argue that much nature writing is georgic in spirit, not merely describing wildlife but celebrating the work of the naturalist. The letters that comprise White's *Natural History of Selborne* certainly fit that mould, as does the work of the important, but today often forgotten, naturalist W.H Hudson (1841–1922), whose 1910 *A Shepherd's Life* inspired James Rebanks (b. 1974) to write his bestselling 2015 *The Shepherd's Life* about life on a Cumbrian farm. Hudson's numerous other publications popularised natural history as an activity by showing the naturalist at work. More than most naturalists, Hudson was always self-reflective, looking both inwards and outwards in a way that readers could identify with and emulate. Hudson's equivalent in the age of television is David Attenborough (b. 1926) whose natural history programmes have transformed public understand of the natural world but which, as Attenborough's personal celebrity grew,

increasingly featured reflection on the process of making the documentary. This was formalised in the 2006 series *Planet Earth* where each of the 11 episodes concluded with a short ‘featurette’, the *Planet Earth Diaries*, in which viewers could watch Attenborough and the film crew making the programme. These short films, celebrating the labour of making a wildlife programme, were naturalists’ georgics for a new century and a new medium. They may not attempt to emulate Virgil, nor in most cases are they primarily concerned with agriculture, but, as with Grainger’s West-India georgic, they offer an account of a new kind of rural labour emerging from changed cultural circumstances and environments unknown to classical authors.

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