

2021

Greening the Archive: The Social Climate of Cotton Manufacturing in the "Samuel Oldknow Papers, 1782-1924"

Bernadette Myers

Columbia University, bm2690@columbia.edu

Melina Moe

Columbia University, mm5362@columbia.edu

Follow this and additional works at: <https://elischolar.library.yale.edu/jcas>



Part of the [Agriculture Commons](#), [Archival Science Commons](#), [Economic History Commons](#), [Environmental Studies Commons](#), and the [Social History Commons](#)

Recommended Citation

Myers, Bernadette and Moe, Melina (2021) "Greening the Archive: The Social Climate of Cotton Manufacturing in the "Samuel Oldknow Papers, 1782-1924"," *Journal of Contemporary Archival Studies*: Vol. 8 , Article 10.

Available at: <https://elischolar.library.yale.edu/jcas/vol8/iss1/10>

This Case Study is brought to you for free and open access by EliScholar – A Digital Platform for Scholarly Publishing at Yale. It has been accepted for inclusion in Journal of Contemporary Archival Studies by an authorized editor of EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact elischolar@yale.edu.

GREENING THE ARCHIVE: THE SOCIAL CLIMATE OF COTTON MANUFACTURING IN THE SAMUEL OLDKNOW PAPERS, 1782–1924

On New Year's Day 1921, historians George Unwin and Arthur Hulme made their way to a ruined cotton mill located on the Goyt River in Mellor, England. Most of the mill had been destroyed by a fire in 1892, but when the historians learned that a local boy scout had been distributing eighteenth-century weavers' pay tickets to passersby, they decided to investigate. On the upper level of the remaining structure, beneath several inches of dust and debris, they found hundreds of letters, papers, account books, and other documents scattered across the floor. After recovering, cleansing, and classifying the items, Unwin and Hulme celebrated their "almost inconceivable good fortune": the papers belonged to eighteenth-century industrialist Samuel Oldknow, the man who built the mill, and one of the first successful manufacturers of cotton cloth in England.¹

Now held in both British and U.S. library collections, this remarkable archive of papers has been used by historians for the past hundred years to document one slice of a monumental shift in Britain's economy: the cotton industry's shift from a system based on outworkers paid by the piece (also known as the putting-out system) to an hourly wage system of onsite factory production. Oldknow's career spanned this period of change. In the 1780s, he purchased pre-spun thread and distributed it to local weavers. By 1804, he operated a six-story factory that employed 550 workers. His papers thus offered crucial evidence to economic historians hoping to make sense of this important phase of Britain's industrialization. They detail the wages paid to spinners during the 1780s, methods for surveilling and disciplining factory employees, and the employment of child apprentices.² They also illustrate the many challenges that faced owners and operators of new factories: the difficulties caused by lack of capital and the scarcity of skilled management, the rise of a new body of entrepreneurs from among the employees trained by the successful manufacturer, and the relations between producers in northern England and the London houses that formed its main market. In short, the Oldknow archive has proven invaluable in defining, shaping, and confirming the stories that have been told about the Industrial Revolution.

What has gone overlooked, however, are the environmental dimensions of Oldknow's business activities. As historian Donald Worster has shown, the expansion of the factory system in which Oldknow participated brought "sweeping transformations to English agriculture" at the end of the eighteenth century.³ But while cotton is the agricultural product that drives Oldknow's business, it is often ignored in analyses of this important archive. With closer scrutiny, the growing conditions and species variations of this plant emerge as central shapers of Oldknow's business footprint, both in northern England, where his factories were located, and in Brazil and the West Indies, where Oldknow sourced his cotton. In this article, we ask not only how the botanical demands of cotton shaped British commercial ventures in the colonies but also how Oldknow's

¹ George Unwin, *Samuel Oldknow and the Arkwrights: The Industrial Revolution at Stockport and Marple* (Manchester: Manchester University Press, 1968), vi. Unwin's published account of Oldknow's business and the context in which it flourished has been invaluable for our understanding of Oldknow's environmental impact.

² On wages, see Paul A. Custer, "Refiguring Jemima: Gender, Work and Politics in Lancashire 1770–1820," *Past & Present* 195 (2007): 127–58, esp. 129n4; on methods of factory discipline and surveillance, see Robert Williams, "Inscribing the Workers: An Experiment in Factory Discipline or the Inculcation of Manners?: A Case in Context," *Accounting History* 2, no. 1 (1997): 35–60; on child apprentices, see Unwin, 170–75.

³ Donald Worster, *Nature's Economy: The Roots of Ecology* (San Francisco: Sierra Club Books, 1977), 13.

factories impacted the environment of northern England. We also ask how, as archivists and curators, we can make these environmental implications legible for students, researchers, and archive users. This essay offers an approach to answering these questions by articulating a process of “greening” the archive that relies on a practice of “re-scaling,” or toggling between the local and global implications of items in a collection.⁴ Our test case is the collection of Oldknow’s papers housed in the Rare Book and Manuscript Library at Columbia University. As we will show, greening the Oldknow archive reveals new connections and disjunctures between the microhistory of the northern English landscape and the larger history of global trade. This case study thus participates in larger reevaluations of the Industrial Revolution as a period that inaugurated unprecedented environmental change and destruction.⁵ While these reevaluations often draw on new scientific and big data archives, we contend that traditional, historical archives can be reframed by archivists, catalogers, and curators to productively contribute to ongoing environmental research.

The instigation for reexamining the Oldknow papers came in the form of a library-wide public exhibition entitled “Social Climates” that was to have been staged at Columbia’s Rare Book and Manuscript Library in spring 2021.⁶ Inspired by the Green New Deal, the exhibition was initiated with the mandate to reexamine from an explicitly environmental perspective archives already recognized as important parts of the Columbia collections.⁷ Many of these archives capture an understanding of “climate” defined by geographer Mike Hulme as “an idea that mediates between the human experience of ephemeral weather and the cultural ways of living which are animated by this experience.”⁸ By foregrounding this capacious definition of climate, the exhibition highlights new uses for Columbia’s collections within the growing field of the environmental humanities. As Todd Welch has argued, traditional archival appraisal, description, reference, and public outreach practices have failed to serve the needs of these new environmentally oriented users.⁹ Our exhibition, by contrast, aims to cultivate such use by drawing visitors’ attention to the understudied items, surprising juxtapositions, and longer historical frame of Columbia’s archives. The environmental humanities, our exhibition shows, offer exciting challenges and opportunities for archivists, catalogers, and curators who might revisit existing records already in their collections as new sources for environmental research.

⁴ Jennifer Wenzel, *The Disposition of Nature: Environmental Crisis and World Literature* (New York: Fordham University Press, 2020), 2.

⁵ See, for instance, Jeff Horn, Leonard N. Rosenband, and Merritt Roe Smith, eds., *Reconceptualizing the Industrial Revolution*, Dibner Institute Studies in the History of Science and Technology (Cambridge, MA: MIT Press, 2010) and E. A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge: Cambridge University Press, 2010). Some historical accounts continue to characterize the Industrial Revolution as a period of unequivocal material progress. See, for instance, Joel Mokyr, *The Enlightened Economy: An Economic History of Britain, 1700–1850* (New Haven: Yale University Press, 2009). Mokyr concludes with the following statement: “Material life in Britain and in the industrialized world that followed it is far better today than could have been imagined by the most wild-eyed optimistic 18th-century philosophe—and whereas this outcome may have been an unforeseen consequence, most economists, at least, would regard it as an undivided blessing” (489).

⁶ The exhibition has been postponed due to COVID and we are exploring the possibility of transitioning the exhibit online (see more below).

⁷ One case, for instance, pairs early modern witch-hunt materials with new documentation of concurrent environmental stresses.

⁸ Mike Hulme, *Weathered: Cultures of Climate* (London: SAGE Publications Ltd, 2017), 3.

⁹ Todd Welch, “‘Green’ Archivism: The Archival Response to Environmental Research,” *American Archivist* 62, no. 1 (1999): 74–94.

Oldknow's papers offer a compelling case study for greening the archive in part because of his dual reputation as both a leader in Britain's industrial development *and* a prominent landowner in northern England. Born on October 5, 1756, in Anderton, Lancashire, Oldknow began his career with every possible advantage. His father, who died young, was involved in early cotton manufacturing experiments and his uncle was a draper who owned a hosiery shop in Nottingham. With these family connections, Oldknow was well positioned to exploit the cheap, high-quality yarn that flooded the muslin market after the invention of the spinning mule.¹⁰ In 1781, he expanded the family business in Anderton and within three years had become the most successful cotton manufacturer in Britain, producing cotton cloth that rivaled the imported Indian muslins that had monopolized the market. At some point in the late 1780s, however, Oldknow's career took a surprising agricultural turn. In 1787, he purchased a landed estate in Mellor, Derbyshire, and began building a spinning factory. As he consolidated this land, he started to invest in the rural community. He built a series of reservoirs and houses for himself, his workers, and his apprentices. He also transformed the landscape around Mellor and Marple by constructing bridges, turnpike roads, coal shafts and lime kilns designed to look like medieval fortresses. By 1828, the year he died, he was appointed chairman of the Agricultural Society, recognizing his role as one of Derbyshire's leading farmers during the Napoleonic Wars.

The majority of academic treatments of Oldknow's archive neglect this last piece of his career. Instead, he is often remembered as an "entrepreneurial failure," whose extensive land purchases left him in financial distress.¹¹ And, indeed, by 1792, Oldknow's entire cotton empire had collapsed. He died insolvent, owing his business partner, Richard Arkwright, over £200,000. Oldknow's story thus presents a paradox for economic historians. He has been described as one of the "outstanding, most original, and most successful managers of his age," on the leading edge of the transition to hourly wage work.¹² But he "died poor after a roller-coaster career."¹³ He was a "man of vision," whose vision nevertheless "frequently outpaced his pocket."¹⁴ More disparagingly, he has been characterized as "a very mediocre businessman who was simply fortunate in his biographers"¹⁵ and as an "incorrigibly bad man of business."¹⁶ Oldknow's obituary, by contrast, glances over his business failures and devotes most of the article to later roles as a community builder, landlord, and agriculturalist in the area surrounding Mellor and Marple: "[Oldknow] thought it patriotism to convert one blade of grass into two." Our reevaluation of the papers at Columbia foregrounds not only his commercial and financial activities but also his

¹⁰ Sven Beckert points out that he was not a self-made man but started out with substantial resources and family connections in muslin manufacturing and sales in *Empire of Cotton: A Global History* (New York: Knopf, 2014), 72.

¹¹ Joel Mokyr, "Entrepreneurship and the Industrial Revolution in Britain," in *The Invention of Enterprise: Entrepreneurship from Ancient Mesopotamia to Modern Times*, eds. David S. Landes, Joel Mokyr, and William J. Baumol, Kauffman Foundation Series on Innovation and Entrepreneurship (Princeton: Princeton University Press, 2010), 183–210, esp. 198.

¹² Sidney Pollard, "The Genesis of the Managerial Profession: The Experience of the Industrial Revolution in Great Britain," *Studies in Romanticism* 4, no. 2 (1965): 57–80, esp. 63.

¹³ Mokyr, "Entrepreneurship and the Industrial Revolution," 198.

¹⁴ Robert B. Williams, *Accounting for Steam and Cotton: Two Eighteenth Century Case Studies* (New York: Garland Pub, 1997), 81.

¹⁵ Sidney Pollard, "The Factory Village in the Industrial Revolution," *English Historical Review* 79 no. 312 (1964): 513–31, esp. 530.

¹⁶ Unwin, 201.

evolution into a local landholder of note, as intent on agricultural experimentation as West Indian cotton prices. Indeed, by greening Oldknow's archive, we show how these two facets of his career were not opposed to one another; rather, Oldknow's industrial innovations and landholding ambitions were deeply intertwined. His archive captures both the tremendous domestic shifts in land use of the post-enclosure period as well as the sweeping economic change driven by colonial expansion and the introduction of factory work.

By foregrounding the interrelation between Oldknow's factory work and farming, this case study participates in larger reevaluations of historical narratives inaugurated by the environmental humanities. Many of these reevaluations have highlighted climate as an overlooked agent in the stories we tell about historical change. For instance, scholars have linked the decline and fall of the Roman Empire to climate change and the first major outbreak of bubonic plague.¹⁷ The Golden Age of the Dutch Republic arose during an unusual climatological era, the Little Ice Age, which is now flagged as a key factor in that country's economic expansion.¹⁸ Recent reassessments of the Great Smog in London (1952) emphasize its lasting political and public-health effects, including the increased public awareness of air pollution and the changing perception of government's role in regulating energy provision, which both contributed to the passage of the Clean Air Act in 1956.¹⁹ These studies often take on interdisciplinary methodological dimensions, as humanities scholars increasingly draw on databases collected and stewarded within STEM disciplines to refine arguments about human culture. Scholars have mobilized natural materials—from ice cores, seashells, and tree rings to sub-fossil pollen and sedimentary deposits from lakes and marine basins—to write about the course of the late Roman empire and the lives of those who lived through it.²⁰ Interdisciplinary collaborations between historians of the ancient world and climate scientists have used remnants of volcanic eruptions to inform the development of Greek astronomy and evidence of rainfall perturbations to frame arguments about the economic resiliency of great cities.²¹ The synthesis of insights from different fields, what E.O. Wilson called

¹⁷ See, for instance, Jean-Noel Biraben and Jacques Le Goff, "La peste dans le Haut Moyen Age," *Annales* 24 (1969): 1484–1510; Pauline Allen, "The 'Justinianic Plague,'" *Byzantion* 49 (1979): 5–20; Dick Harrison, "Plague, Settlement, and Structural Change at the Dawn of the Middle Ages," *Scandia* 59, no. 1 (1993): 15–48; and Peter Sarris, "The Justinianic Plague: Origins and Effects," *Continuity and Change* 17, no. 2 (2002): 169–92.

¹⁸ Dagomar Degroot, *The Frigid Golden Age: Climate Change, the Little Ice Age, and the Dutch Republic, 1560–1720* (New York: Cambridge University Press, 2018).

¹⁹ Michelle L. Bell, Devra L. Davis, and Tony Fletcher, "A Retrospective Assessment of Mortality from the London Smog Episode of 1952: The Role of Influenza and Pollution," *Environmental Health Perspectives* 112, no. 1 (2004): 389–94; Peter Thorsheim, "Interpreting the London Fog Disaster of 1952," in *Smoke and Mirrors: The Politics and Culture of Air Pollution*, ed. E. Melanie DuPuis (New York: New York University Press, 2004), 154–69; Stephen Mosley, "'A Network of Trust': Measuring and Monitoring Air Pollution in British Cities, 1912–1960," *Environment and History* 15, no. 3 (2009): 273–302.

²⁰ Studies co-authored by scientists and historians on this issue have included Michael McCormick et al., "Climate Change during the Roman Empire: Reconstructing the Past from Scientific and Historical Evidence," *Journal of Interdisciplinary History* 42, no. 2 (2012): 251–73; Ulf Büntgen et al., "Cooling and Societal Change during the Late Antique Little Ice Age from 536 to around 660 AD," *Nature Geoscience* 9 (2016): 231–36; John Haldon et al., "The Climate and the Environment of Anatolia: Integrating Science, History, and Archaeology," *Journal of Interdisciplinary History* 45, no. 1 (2014): 113–61; Adam Izdebski et al., "Realizing Consilience: How Better Communications between Archaeologists, Historians, and Natural Scientists Can Transform the Study of Past Climate Change in the Mediterranean," *Quaternary Science Review* 136 (2016): 1–22; Daniel Fuks et al., "Dust Clouds, Climate Change, and Coins: Consilience of Paleoclimate and Economy in the Late Antique Southern Levant," *Levant* 49 (2017): 205–23.

²¹ See, for instance, the program for the "Climate Science & Ancient History: Decoding 'Natural' and 'Human' Archives" international conference,

consilience, or the “jumping together” of knowledge, characterizes the new field of the environmental humanities, in which articles are often co-authored by former disciplinary strangers from the humanities and natural sciences.²² Taking a comprehensive view of archives and evidence, the environmental humanities have prompted scholars explicitly to set aside the tacit assumption that the Earth provides an inert, stable backdrop to the narrative of human history.

At its best, the environmental turn makes for more complex historical and cultural narratives. It thus offers an important corrective to generations of scholarship that has focused largely, if not exclusively, on human actors and their texts. And yet, as Kristen Sessa has cautioned, by using physical data to ground social change, an environmental turn risks simply replacing human agents with the physical environment, or non-human agents like pathogens, as the star in, for instance, the story of Rome’s decline and fall.²³ The resulting historical narratives privilege scientific data, and their textual interpretations become driven by the impulse to confirm what is established in the Earth’s physical record. In this type of consilience work, Sessa finds that scientific data analysis often comes first and historical sources second in the interpretive process, with the latter involving a search for textual references that “highligh[t] primarily, if not exclusively, positive ‘matches’ between the science and the history.”²⁴ An allusion to a drought in a Roman poem might confirm dendrochronological evidence that told the same story. At its most reductive, the environmental turn relegates textual evidence to the role of “authenticating” data gleaned from the “natural archives.”²⁵

In what follows, we respond to Sessa’s critique by drawing out three exemplary items from the Oldknow archive that the larger exhibition will situate in environmental contexts: the political repercussions of the environmental requirements for growing cotton; the global trade networks constructed to source and merchandize cotton; and the transformation of local landscapes by the systems and factories used to manufacture cotton cloth in England. While each story is known to some degree, we suggest how attending to the environmental and ecological inflections of these broader academic debates opens the Oldknow archive to new interdisciplinary research agendas. Oldknow’s papers have not gone unnoticed by researchers, especially in the early twentieth century. Since then, however, interest in this rich collection has dwindled, in part because it had been so clearly taken up as evidence that speaks only to economic historians. Our investigation highlights the obvious environmental context in which Oldknow’s cotton empire can be placed *and* points out the sometimes-perplexing non-attention to the physical world, evident first in the archive’s organization and cataloging in institutional repositories, and then in the archive itself. By asking these questions of the Oldknow papers, we hope to model an environmental approach for re-reading other textual archives or historical materials that might be undertaken by archivists, researchers, curators, and students alike.

https://ancientclimate.philhist.unibas.ch/fileadmin/user_upload/ancientclimate_philhist/CLIMATE-Conference-AbstractBooklet_27-28.11.2018_.pdf.

²² E.O. Wilson, *Consilience: The Unity of Knowledge* (New York: Alfred P. Knopf, 1998). See also Michael McCormick, “What Climate Science, Ausonius, Nile Floods, Rye, and Thatch Tell us about the Environmental History of the Roman Empire,” in *The Ancient Mediterranean Environment between Science and History*, ed. W.V. Harris (Leiden: Brill, 2013), 61–88, esp. 68–69.

²³ Kristina Sessa, “The New Environmental Fall of Rome: A Methodological Consideration,” *Journal of Late Antiquity* 12, no. 1 (2019): 211–55.

²⁴ Sessa, 226.

²⁵ *Ibid.*

The Arrangement of the Oldknow Archive

Columbia's Rare Book and Manuscript Library houses just part of the entire Oldknow collection, which perhaps explains why the broader environmental implications of Oldknow's cotton business have been overlooked. In 1929, after Unwin and Hulme published *Samuel Oldknow and the Arkwrights* (1924), economist and rare book collector Edwin R. A. Seligman purchased a selection of Oldknow's papers from Hulme. This selection—consisting of approximately 300 items arranged as “catalogued correspondence,” “catalogued documents,” and “miscellaneous materials”—now constitutes the Samuel Oldknow Papers, 1782–1924, at the Columbia Rare Book and Manuscript Library. When selecting items, Seligman seems to have privileged Oldknow's business correspondence. The Columbia papers contain letters between Oldknow and the spinning entrepreneur Sir Richard Arkwright (1732–1792), his son Richard Arkwright (1755–1843), and the merchants of S & W Salte in London. This constellation of interlocutors provides insight into how supply and demand shaped Oldknow's business enterprise, but the prominence of the selected correspondence within the papers presents the rapidly changing cotton industry as being fueled entirely by a few key human agents. In short, the Oldknow archive housed at Columbia bears the imprint of Seligman's academic investments in certain individualistic narratives about economic history.

A fuller picture of Oldknow's papers might illuminate some of the local environmental implications of his business that have gone unremarked. Oldknow's remaining papers were eventually acquired by the John Rylands Library (1,044 items), the Milton S. Eisenhower Library at Johns Hopkins University (75 items), and local libraries and record offices in Mellor, Marple, and Stockport. While Columbia's papers foreground international trade and individual correspondence, the papers at Rylands include more documentation of the laborers in Derbyshire that ran Oldknow's mills, bleaching fields, looms, and warehouses. They thus contain more evidence of the local transformation of the northern English villages that was partly funded by Oldknow's international business. The Rylands archive also includes documents of the production process, such as warping and costing books, time books, inventories, and information on workers, including their gender. A highlight is a large notebook that records mistakes made by women workers with an appended conduct report. These types of records, tracking the daily activities of factory workers and the evolution of gendered roles in the textile industry, are largely absent from the Columbia archive. Were they included, the paired domestic and international aspects of Oldknow's business would have been even clearer.

At Columbia, the organization of the papers follows the manuscript tradition of twentieth-century processing protocols, with alphabetized correspondence separated from business records like pay tickets, receipts, and ledgers that have no evident author. What makes the Columbia collection unique, however, is that it intermingles international and domestic company records so that Oldknow's ambitious local estate planning and land management are folded together with canal receipts documenting his exports and imports. The intermingling of the local and global reflects an interpretation of the importance and extent of Oldknow's archive that we support, and yet, it also makes the archive somewhat harder to navigate. By contrast, Johns Hopkins' Special

Collections separates the items into two series: company records and estate records.²⁶ Examining the two finding aids together makes it clear that Oldknow's business acumen, ambitions, and wealth were always attuned toward expanding both his international business *and* his local footprint.

Archivists today would likely have approached the collective Oldknow papers differently. The archive at Columbia would not have been processed with such a strong focus on named correspondents and individual items—a practice that fragments the connections between items that may have been evident in their original arrangement or groupings. The detailed and time-consuming process of spotlighting individual items would also be difficult for institutions long on backlogs and short on archivists. It also seems unlikely that the collection would have been split up—Seligman might have taken the collection wholesale, perhaps even including the eighteenth-century trunks in which Unwin found some of the papers. Despite these limitations, the current, fragmented arrangement of the Oldknow archive raises implicit questions about the scale of Oldknow's business, thus opening up exciting avenues for environmentally oriented research. In what follows, we capitalize on some of the gaps and surprising juxtapositions amid the papers to tell a new story about Oldknow's environmental impact. In doing so, we hope to model questions that other archivists and curators might ask of traditionally processed collections to reframe them for environmental use.

The Nature of Cotton

One of the first challenges we encountered in re-reading Oldknow's papers from an environmental perspective might seem rather obvious: Oldknow was a cotton *manufacturer*, not a cotton farmer, so he did not directly confront the climatic constraints or environmental pressures facing his plantation-owning contemporaries.²⁷ Indeed, for the first half of his career, Oldknow's empire of cotton was built on supply chains and the mediation of wholesalers; he bought pre-spun thread, mostly from Richard Arkwright, that his workers wove into cloth. His production center in northern England was thus separated from the Brazilian, West Indies, and American sources of raw cotton by both an ocean and a middleman. And yet, the growing climate that cotton demanded was a topic of heated debate in eighteenth-century England—both among cultivators and among politicians. But while the cotton plant found favorable growing conditions in Asia, Africa, and the Americas, the greater Manchester area, like anywhere else in Great Britain, was too cold and wet. Proponents of the wool sector, as well as investors concerned about building capital-intensive factories to process raw materials England could not grow domestically, were dismayed by the rise of cotton production. As Sven Beckert has argued, British cotton manufacturing was “a complete anomaly,” since it was “the first major industry in human history that lacked locally procured raw materials.”²⁸

²⁶ Samuel Oldknow business records, MS-HUT-009, Special Collections, The Johns Hopkins University, <https://aspace.library.jhu.edu/repositories/3/resources/753>.

²⁷ The spinning magnate Richard Arkwright, for instance, tried to establish cotton plantations in Africa and had a stake in the Sierra Leone Company. See J.J. Mason, "Arkwright, Sir Richard (1732–1792), inventor of cotton-spinning machinery and cotton manufacturer," *Oxford Dictionary of National Biography*, Sept. 23, 2004, <https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-645>.

²⁸ Beckert, 85.

This “anomaly” appears in Oldknow’s correspondence with Samuel Salte, a London businessman who bought wholesale from northern cotton manufacturers to resell in his commercial showrooms. Salte’s letters pepper the Oldknow archive starting in the 1780s, when he begins placing orders, providing receipts, offering business advice, and nudging Oldknow toward producing more fashionable patterns and materials. In one striking letter, dated March 15, 1786, Salte recounts his attempts to persuade the “Lords of the Council for Trade” that British cotton manufacturing was on its way to being a major facet of the national economy (figure 1). Salte tells Oldknow that he offered a “brief history of the rise & progress of the Callico and Muslin Trade in this Country” to the Trade Council members who “hardly knew of a Manufacture of British Muslin.” These London businessmen knew cotton as a popular fabric imported from India.²⁹ But using samples of cloth from Oldknow’s factory, Salte is able to change their minds, reporting that “they were equally surprised & pleased” with the quality of the domestic merchandise. By the end of the meeting, Salte proudly reports, he had overturned their objections that British cotton production was a “very wild & Chimerichal Scheme” and instilled instead a vision of domestic manufacturing that Oldknow would be central in bringing forth.

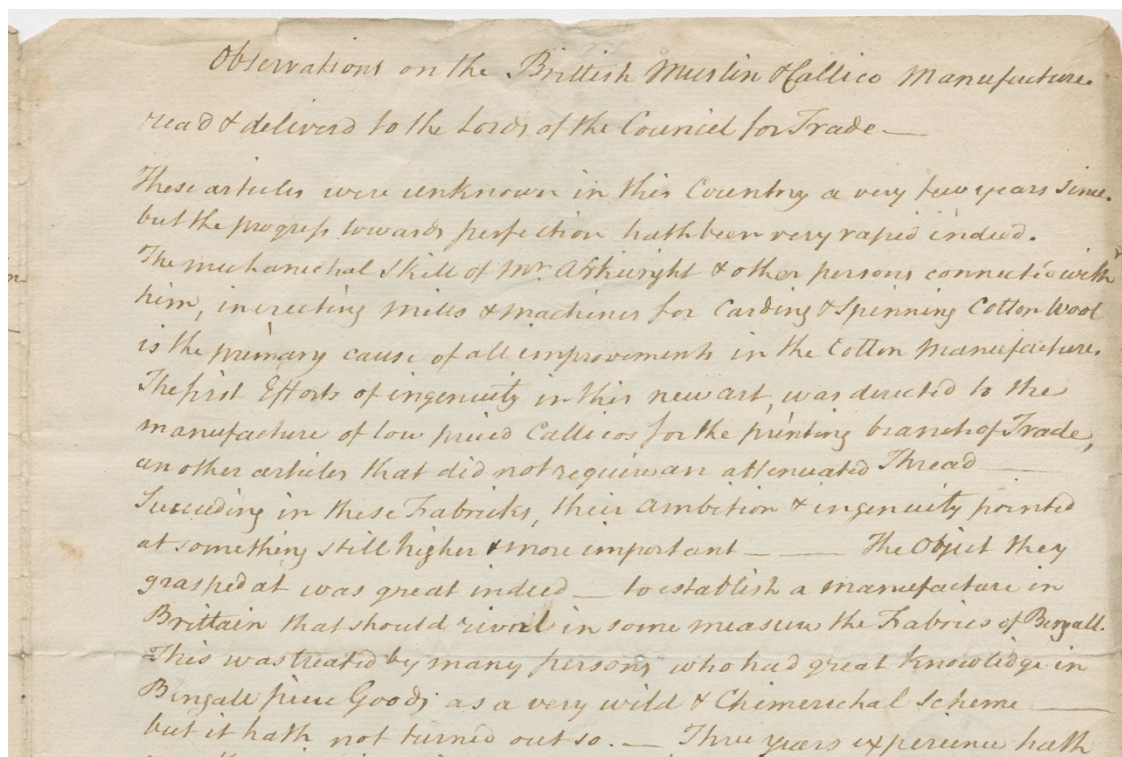


Figure 1: Samuel Salte, “Observations on the British Muslin & Callico Manufacture, London, 15 March 1786”

Cotton manufacturing would become central to Britain’s economy. By 1830, one in six workers in Britain labored in the cotton industry.³⁰ And yet, Salte’s letter captures some of the skepticism

²⁹ India had a virtual monopoly over the cotton industry throughout the eighteenth century, even though the import of chintz had been outlawed since 1720 to encourage domestic production. For more on India’s role in the development of the British cotton industry, see Jonathan Eacott, *Selling Empire: India in the Making of Britain and America, 1600–1830* (Chapel Hill: University of North Carolina Press, 2016).

³⁰ Beckert, 73.

surrounding British cotton manufacturing that persisted throughout the eighteenth century. In our exhibition, we paired Salte's letter with contemporary writing that reported agricultural experiments in growing cotton as well as opinions about the political consequences of doing so. Many of these pamphlets lament the decline of the native wool industry, casting the competition between cotton and wool in nationalistic terms. In *The Contrast, or, A comparison* (1782), an embittered wool merchant complains that newfangled calicoes were undercutting the price of "native wool," which lies "rotting in our warehouses."³¹ The title page proclaims woolen fleece the "first and great Staple of our Land," a position from which it should not be displaced as "cotton can be no staple, since England does not produce a single ounce." In *A Treatise on silk, wool, worsted, cotton and thread* (1779), an anonymous hosiery manufacturer scrutinizes the characteristics and growing conditions of a number of plants and the utility of different fibers. Here, sheep wool is "justly esteemed the staple commodity of England" while cotton is "a vegetable cultivated in warm climates, particularly the East and West Indies" and so unsuitable for English investment.³²

This juxtaposition of items describing the nature of cotton with Salte's observations on "the progress of the Callico and Muslin Trade in this Country" throws Oldknow's early successes into sharp relief. From the perspective of economic history, these successes might be explained by the simple fact that Oldknow was in the right place at the right time. He had family connections in cotton sales. And he entered the business right when Arkwright's patent for the innovative water frame expired. From an environmental perspective, however, Oldknow's business model looks more perplexing. Cotton manufacturing thrived in England *despite* the local climatic conditions inhospitable to the cotton plant and a strong vein of local criticism dismayed by replacing "British" wool with an exotic plant. What the Oldknow archive demonstrates is how a combination of international supply chains and local land transformation surmounted these obstacles.

Global Networks

Oldknow's business soon achieved a global reach; his calicoes and muslins were in demand across Europe and even in the Americas. But though the archive documents the wholesale purchase and sale of Oldknow's cloth, the *sources* of his raw materials are harder to identify. This archival gap is particularly surprising since Oldknow shifted to exclusively *spinning* cotton at his mill in Mellor in the latter half of his career, thereby relying on the consistent import of raw cotton rather than spun yarn. An inventory of Oldknow's warehouse in Anderton, described by Unwin, catalogs 324 pounds of different kinds of raw cotton: 77 pounds of cotton from Berbice (Guyana); 130 from Brazil; 97 from Santo Domingo; and 20 from Smyrna.³³ But no correspondence between Oldknow and his raw cotton suppliers survives in the Columbia Rare Book and Manuscript Library records.

³¹ *The contrast, or, A comparison between our woollen, linen, cotton, and silk manufactures: shewing the utility of each, both in a national and commercial view: whereby the true importance of the fleece, the first and great staple of our land, will appear evident; the Effect that must naturally arise from the System we now pursue, and the Consequences we may rationally hope for from a contrary Policy: together with such facts and remarks as may claim the attention of every Englishman, who is a friend to the freedom and prosperity of his country* (London, 1782), sig. G2r and B3r.

³² *A treatise on silk, wool worsted, cotton and thread, describing their nature, properties and qualities; with instructions to clean the manufactures in the hosiery branch...To which are added, descriptive remarks on frame-work knitting...* (London, 1779), 12, 19.

³³ Unwin, 15.

This archival absence proved particularly frustrating since it seemed to obfuscate the role that cotton played in the history of globalization. How could we make this absence visible to library visitors?

One piece of correspondence Oldknow received from Brazil hinted at the global dimensions of his business network (figure 2). Dated August 26, 1811, the letter was from Andrew Littlewood, one of Oldknow's commercial agents, who describes his efforts to sell several trunks of manufactured cotton shirting in Rio de Janeiro, Buenos Aires, and Peru. After complaining that high import taxes have made his job more difficult, he hints to his employer about the unexpectedly high international travel expenses. He is most frustrated, though, by the low prices for finished cotton, describing how "British manufactured goods are selling at most Ruinous prices," particularly in the major international trade centers of Rio and Buenos Aires. The letter thus testifies to the increasingly global nature of Oldknow's sales network, even as it suggests the growing financial precarity of his enterprise.

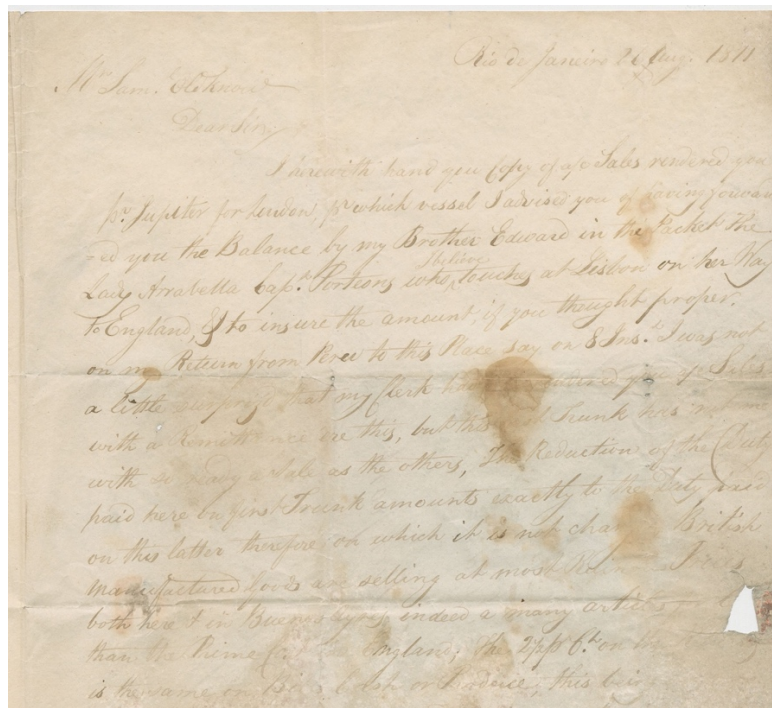


Figure 2: Andrew Littlewood to Samuel Oldknow, Brazil, 26 August 1811

In exhibiting this letter, we sought not only to highlight the global nature of Oldknow's business reach but also the material condition of this rare example of his surviving international correspondence. While many of the hundreds of letters in the archive survive in good condition, the handwriting on this document is faint and nearly illegible to the casual reader. Half of the letter exhibits water stains that make its interpretation so difficult that, initially, we misread it as a receipt of raw cotton shipments rather than the attempted sale of finished materials. It was only after we deciphered the writer's references to "trunks" that we realized the direction of the shipments was from England to Brazil rather than from cotton plantation to factory. The damage and near illegibility of the document, compounded with the absence of other correspondence with Brazil in

the collection of papers at Columbia, stands in the exhibition not only for what it captures but for what it obscures.

Our exhibit highlights the material absences visible in the Brazil letter to draw attention to one of the most conspicuous absences in the Oldknow archive: the systemic slave labor that was, as Beckert notes, “as essential to the new empire of cotton as proper climate and good soil.”³⁴ The UK National Archives estimates that, between 1640 and 1807, Britain transported 3.1 million Africans across the Atlantic to colonies from Saint-Domingue to Pernambuco, many of whom were brought to Brazil.³⁵ By 1840, in the cotton-producing region of Maranhão, enslaved persons were half the region’s population.³⁶ In the West Indies, indigenous peoples, including the Arawaks and Caribs, were also enslaved and forced to work on cotton and sugar plantations. The profits from slave labor financed the development of heavy industry and guaranteed an elastic cotton supply. The history of Oldknow’s cotton business is thus deeply entangled with distant lands and foreign slave labor, but this history is not represented in the Oldknow papers nor is it discussed in Unwin’s monograph on Oldknow published in 1924.

To call attention to this absence, our exhibit placed the Brazil letter alongside two other items from Columbia’s collections: the “An Accurate Plan of the Docks for the West India Trade” (1801) and a colored lithograph from Henry Lewis’s *Dar illustrirte Mississippithal* (1858) showing slaves picking cotton under the gaze of an overseer with a whip in his hand (figure 3). These images are not directly connected to Oldknow’s papers. Though Oldknow likely imported and exported cotton through the London ports, no correspondence with these merchants is present in the Columbia papers (besides his exchanges with Salte). And the lithograph depicts a scene on the shore of the Mississippi River, south of Vicksburg—a place to which Oldknow did not appear to have any direct links. The juxtaposition of these seemingly disconnected items, however, invites viewers to engage in the forms of re-scaling that environmental thinking demands and that structure the entire exhibit. As viewers shuttle between the specific price points and patterns described in the Brazil letter and sites and subjects thousands of miles apart, our exhibit encourages them to reflect on the disastrously uneven distribution of environmental pleasures and harms.

³⁴ Beckert, 91.

³⁵ “Slavery and the British Transatlantic Slave Trade—The National Archives,” <https://www.nationalarchives.gov.uk/help-with-your-research/research-guides/british-transatlantic-slave-trade-records/>.

³⁶ Thales Augusto Zamberlan Pereira, “Poor Man’s Crop? Slavery in Brazilian Cotton Regions (1800–1850),” *Estudos Econômicos (São Paulo)* 48, no. 4 (2018): 623–55.



Figure 3: Henry Lewis, “Cotton Plantation on the Mississippi,” *Dar illustrierte Mississippithal*, 1858

Local Landscapes

Our exhibit foregrounds how Oldknow’s business was connected to early forms of capitalism and industrialization. He extracted natural resources from colonial lands abroad so as to concentrate value-adding economic activity at home. Yet other documents in the Oldknow archive tell a different story. Rising on the tide of his manufacturing success, Oldknow began a series of moves that hearkened back to older feudal forms of economic organization.

In the late 1780s, Oldknow began acquiring land around the northern English villages of Mellor and Marple, fourteen miles southeast of Manchester. In 1790, Oldknow built a factory for spinning by steam power in Stockport and he began laying the foundations for a new mill in Mellor located on the Goyt River. In Marple, he sank coal shafts and built lime kilns, one of his many experiments in “high farming,” a form of land cultivation that made extensive use of soil improvement. Oldknow’s rapid land acquisition as well as capital-intensive building are often cited as the reason for the eventual demise of his cotton empire. Unwin even deems his efforts to expand his business into Cheshire, Derbyshire, and Greater Manchester an example of “megalomania.”³⁷ In this retelling of events, Oldknow’s landowning ambitions and his role in the development of a nascent global capitalism show the contradictory impulses of a businessman during a transitional economic time period. But the organization of the papers in Columbia’s collection presents a slightly different story.

In the Columbia collection, Oldknow’s business records, including correspondence, payroll and wage records, and receipts are intermingled with his records about high farming and his management of the Mellor estate, including memorandum books, flesh books, or accounts of raw meat purchases, canal permits, and an auction notice. The two facets of Oldknow’s career—land management and manufacturing—appear deeply interconnected. Whether this organizational

³⁷ Unwin goes on to complicate this view, but the word is, nevertheless, striking (167).

structure should be attributed to Seligmann or to the archivist who originally filed the papers is unclear. But the surprising, often disorienting juxtaposition of these documents raises a number of questions: What did landholding and the management of a local community have to do with cotton manufacturing? How does the Columbia selection of Oldknow's papers illustrate the relationship between the two? And how could we make this relationship visible to library visitors?

Numerous documents in the archive attest to the impact of Oldknow's business on the local English landscape. In one letter (dated February 14, 1787) from his solicitor George Worthington, we see a glimpse of Oldknow's savvy ambitions not just to own land but to monopolize the local resources he knew would limit future expansion (figure 4). Worthington writes:

If you mean to purchase the Water, Wood, and Land of Mr Collier you mention you will do well to be well informed of Mr Collier's Right over the Water & whether supposing he has & you purchase it, you will then have power to Dam up the Water as you wish without making further purchases of those upon whom you may dam it.

Worthington refers to a potential rival claimant to local water rights in the Chapel House estate, owned by Robert Collier, a member of a prominent Marple family, which encompassed a group of cottages known as the "Chapel Houses," but most importantly, had its eastern boundary as the river Goyt. Worthington underlines "Water" and "Right over the Water," drawing Oldknow's attention to the value of this particular resource.



Figure 4: George Worthington to Samuel Oldknow, 14 February 1787.

Indeed, securing local water rights was an important investment for cotton manufacturers. The fungible value of water had risen due primarily to the invention of the water frame, a spinning frame powered by a water wheel. Fall of water was a convenient power source because the rotation of a water wheel was steady enough for spinning fine, strong cotton thread at a large scale. Steam power was introduced into mills in 1789, but water remained the primary power source through the end of the century. Some historians have argued that there was an eighteenth-century "energy

crisis” in Great Britain due to the limited supply of water power and that this crisis slowed industrialization until alternative power sources were found.³⁸ And in fact, the presence of a reliable water supply often dictated *where* industrialists established centers of textile production.³⁹ Some industrialists built factories in rural areas precisely because of the shortage of sites with adequate water power in urban centers. Securing local water rights therefore, as Worthington indicates in his letter to Oldknow, was key. It appears Oldknow was not entirely satisfied with Mr. Collier’s water rights since, in the same month, he also purchased an estate called Goit Cliff Torr located even further upriver.

Our exhibit uses Worthington’s letter as a starting point for unraveling the many ways in which Oldknow sought to access and control local resources. Numerous canal permits show Oldknow transporting manufactured products and building materials in the growing network of artificial waterways that connected provincial goods to port cities. Oldknow and his fellow investor Richard Arkwright, Jr., provided much of the funding for the Peak Forest Canal, which linked the small industrial communities in Derbyshire and Cheshire to the greater Manchester area. The construction of the Peak Forest Canal was first authorized in 1794 as part of a bigger “canal boom,” similar to the railway mania that would overtake the country half a century later. Over four years, more than eighty Canal and Navigation Acts were passed by Parliament, authorizing the expenditure of more than £5,300,000.

One striking feature of Oldknow’s canal receipts is their description of the transportation of lime, which was used to rejuvenate fallow soil (figure 5). Oldknow built lime kilns on his growing estate as part of his effort to improve local agriculture as well as to make the estate self-sustaining. These lime kilns are further evidence of the strategies Oldknow used to transform the local environment, from championing canals and securing water rights to building housing for workers, whose wage slips show Oldknow further controlling the local economy by offering in-kind payment from the company store (figure 6). These items document Oldknow’s aspirations to fulfill both the newer role of manufacturing magnate and the older one of powerful landholder, able to, as Unwin put it, “influence, control and direct the life of a community through a kind of benevolent despotism.”⁴⁰

³⁸ R. A. Pelham, “The Water-Power Crisis in Birmingham in the Eighteenth Century,” *University of Birmingham Historical Journal* 9, no. 1 (1963): 143–64; Stanley D. Chapman, “The Cost of Power in the Industrial Revolution in Britain: The Case of the Textile Industry,” *Midland History* 1, no. 2 (1971–1972): 1–24.

³⁹ Robert B. Gordon, “Cost and Use of Water Power during Industrialization in New England and Great Britain: A Geological Interpretation,” *Economic History Review* 36, no. 2 (1983): 240–59, esp. 242.

⁴⁰ Unwin, 135.

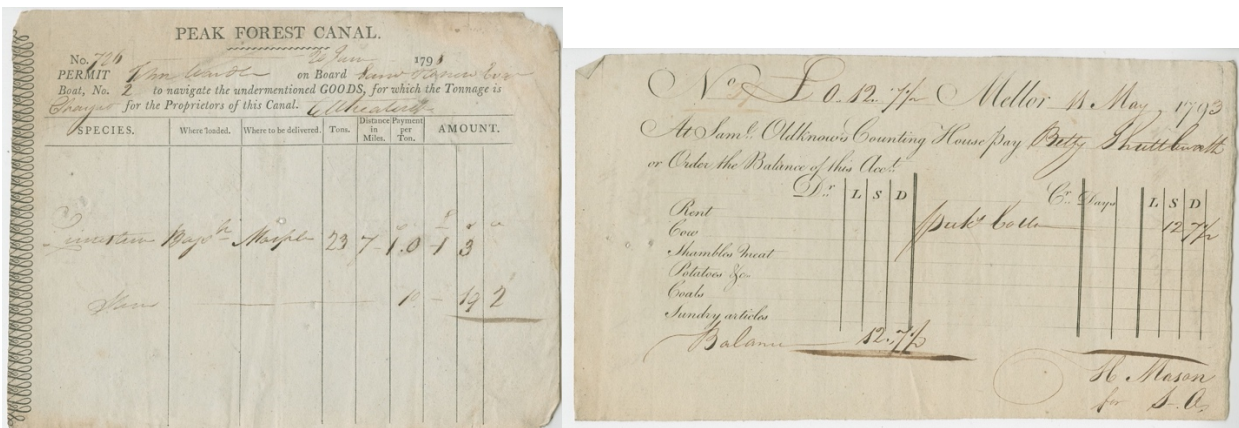


Figure 5 (left) and Figure 6 (right): Samuel Oldknow, Peak Forest Canal permit, 20 June 1793, and Pay slip for picking cotton, 11 May 1793.

The imprint of Oldknow's cotton business on the local landscape of Mellor and Marple can still be felt today. From 2014 to 2018, the Revealing Oldknow's Legacy Project (sponsored by the Mellor Archaeological Trust and the Canal & River Trust) worked to excavate and restore features of Oldknow's estate. Visitors can now tour excavated sites like the Mellor Mill, the Marple aqueduct, and the Marple lime kilns. Further information about these sites is now documented on the project's web site, which includes tourist activities, community events, and local history lessons, all related to Oldknow's legacy.⁴¹ In an effort to preserve this legacy, the website also maintains its own archive containing over three hundred Oldknow-related items, which is freely accessible to the public. The communities of Mellor and Marple have thus curated an important experiential aspect to Oldknow's legacy that is difficult to replicate in a library setting in New York. Indeed, the land of Mellor and Marple is itself an archive; it contains traces of past human activity that have survived into the present. How the land reveals and conceals these traces suggests something about the larger patterns of environmental change that inflected Oldknow's business. At the same time, it is hard to know how Oldknow's physical presence in the landscape signifies without an historical narrative. This distance from Oldknow (both spatial and temporal) is irrecoverable, but it also means that the kind of re-scaling we have outlined here is more important and necessary than ever before.

Ironically, our own plans for the “Social Climates” exhibition have been reshaped by current environmental conditions. In March 2020, Columbia University closed its campus in response to the COVID-19 pandemic. Though we have been able to work with research photos of objects, the last time we consulted the Oldknow papers was in early March 2020. The arrival of COVID not only interrupted our access to the archive; it also meant that we needed to shift the exhibition to an online format. Far from a drawback, however, moving online will allow us to produce an even more interdisciplinary exhibit. In the physical exhibition, the Oldknow-Arkwright papers would have been located alongside other highlights from the Columbia collections, including early-modern manuscripts and mathematical instruments, as well as New Deal papers. In the online exhibition, we will connect the Oldknow-Arkwright collection to other eighteenth-century archives. For instance, the letter from Brazil might be read against the Logs and Journals of ships of exploration, 1756–1904, a collection at the UK National Archives, available online, which

⁴¹ “Explore Samuel Oldknow’s Two-Hundred Year Legacy, across Mellor & Marple,” <https://oldknows.com/>.

contains logs kept by international merchant ships.⁴² We can also compare how Oldknow transformed Mellor and Marple with the transformation of Trimdon, a late nineteenth-century mining town in county Durham. And, to encourage more interdisciplinary research, we are exploring possible connections between the Oldknow archive and the UK National Archives' government datasets from the Agricultural Departments and the Rural Development Commission.⁴³ In many ways, a digital platform will allow us to "green" the Oldknow archive on an even bigger scale.

The process of re-scaling that we outline in this essay depends, however, more on archival research, close reading, and historical contextualization than on big data. It involves reapproaching a collection that had been used by academics for a century to tell a more multi-faceted story; Oldknow's textile empire not only exemplifies a moment of unprecedented economic change, it also captures Britain's unique environmental advantages and constraints. Placing Oldknow's archive in the larger exhibition on "social climates," Oldknow's business emerges as a complex co-fabrication between climate and culture, where the environment is a shaping force, not a backdrop for Oldknow's entrepreneurial maneuvers. Greening Oldknow's archive in this way sets aside the complacency with which environmental conditions are often treated in narratives of the Industrial Revolution—as though cotton did not have growing conditions and waterways were not a resource to be fought over. It also avoids the trap of environmental determinism that cedes evidentiary primacy to data rather than the artifacts produced by historical actors. We do not pursue the logic that England's colder climate catalyzed the British Empire or caused the Industrial Revolution, but we do consistently acknowledge how the English climate and the local landscape of northern England constituted the physical context in which Oldknow and his employees lived and worked.

To encourage more environmentally oriented archival use, archivists might sponsor educational workshops, participate in environmental conferences, or send newsletters to potential users, as Welch has suggested. But they also might revisit and reframe collections that have been absorbed into a single discipline and then left neglected—as the Oldknow papers were. This strategy for greening the archive does not make huge demands on limited financial resources. It simply involves a willingness to look at *any* collection, not just the most obvious ones, to ask: what does this say about the environment?⁴⁴ Perhaps most surprisingly, the impetus to relook at existing archives was the product of our own resource constraints—long backlogs and on-site work concerns due to COVID made acquiring new collections for this specific exhibition impractical. Meanwhile, the rapid pace of environmental change and our desire to enter into conversation with the important work of the environmental humanities compelled us to work with existing materials. With both these constraints and opportunities in mind, we encourage curators, librarians, and archivists to apply the productive urgency of the environmental humanities to future archival work.

⁴² Logs and Journals of ships of exploration, 1756-1904, UK National Archives, <https://www.nationalarchives.gov.uk/help-with-your-research/research-guides/logs-journals-ships-of-exploration-1757-1904/>.

⁴³ Government datasets, UK National Archives, <https://www.nationalarchives.gov.uk/help-with-your-research/research-guides/government-datasets/>.

⁴⁴ This is a reformulation of Timothy Morton's call to look at any "text," not just the most obvious ones, to ask "what does this have to do with the environment?"; see *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2007), 5.