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“As if every particle was alive”: The Charged Canvas of Constable’s Hadleigh Castle

Damian Taylor

Abstract

John Constable painted Hadleigh Castle in the months that followed the death of his wife, Maria, in late 1828. Whereas interpretations of this bleak masterpiece frequently stress its melancholic introspection, this article suggests that it can also be understood as fundamentally engaged with scientific ideas. Across the canvas, light and vapour interweave, drawing together globe and sky into a single system of interchanging states that corresponds with understandings of the world arising in contemporary geology and meteorology. This dynamism linking every aspect of the landscape is reinforced by Constable’s innovative paint handling, which can profitably be considered in relation to conceptions of electrical charge and polarity then stimulating British intellectual life. Viewed in the light of early nineteenth-century science, Hadleigh Castle emerges from the depths of Constable’s mourning as a profound pictorial engagement with newly-conceived qualities of nature, through which the artist traced the invisible but universal conditions of life.

Authors

Damian Taylor is an artist and is currently a Leverhulme Early Career Fellow at the Ruskin School of Art, University of Oxford.

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Hadleigh Castle, The Mouth of the Thames—Morning after a Stormy Night (1829) is perhaps John Constable's greatest balancing act (Fig. 1). Dominated by a foreground tower that is both rooted in the earth and precariously poised on the receding headland, the castle overlooks the division of earth and water and the confluence of river and sea. This work's balancing of oppositions is most frequently discussed in relation to Constable's emotional state at the time of its painting, it being the work to which he turned in the weeks that followed the death of his wife, Maria, in November 1828. It has been suggested that Constable associated the "forlorn ruin at Hadleigh, in late 1828–9, with his own shattered home life and melancholy sense of irreplaceable loss", *Hadleigh Castle* being "charged with an obvious and foreboding intensity, onto which Constable projected the blackness of his own emotions".¹ The deeply personal connotations of the ruined castle are irresistible—as Chateaubriand put it early in the nineteenth century, one senses "a secret conformity between destroyed monuments and the brevity of our existence".² Indeed, it is tempting to project onto *Hadleigh Castle* the association between painter and ruin that Constable later made explicit when referring to the print of "Castle Acre Priory" for his mezzotint collection *English Landscape*: "I have added a 'Ruin', to the little Glebe Farm—for, not to have a symbol in the book of myself, and of the 'Work' which I have projected, would be missing the opportunity".³ This punning entwinement of his career, his life, and the *English Landscape* was wittily reaffirmed the following month when the artist requested that his mezzotinter, David Lucas, "bring some sort of proof of my Ruin that I may contemplate my fate."⁴ Yet, despite its association with pervasive woe, it is much remarked that this composition's "melancholic" foreground is tempered by its "luminous sky and its play of intense light on the distant waters", the mourning evoked by the title's "stormy night" being counterposed by its near homophone's promise of new life.⁵ Likewise, although it has been claimed that the lines from James Thomson's *Seasons* that accompanied *Hadleigh Castle*'s first exhibition suggest that "Constable seemed intent on his audience finding in it a decidedly optimistic meaning",⁶ it has been persuasively argued that, when read in the context of Thomson's immediately preceding lines, Constable's choice of verse offers far darker associations.⁷

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Figure 1.

John Constable, *Hadleigh Castle, The Mouth of the Thames--Morning after a Stormy Night*, 1829, oil on canvas, 121.9 x 164.5 cm. Collection of Yale Center for British Art, Paul Mellon Collection (B1977.14.42). Digital image courtesy of Yale Center for British Art.

The psychological perspective that frames interpretations of *Hadleigh Castle* sets it apart from Constable's works of the 1810s and early 1820s, the "decade of English naturalism" in which Constable was a key player.⁸ Constable's paintings of this period are characterised by topographical accuracy and an attention to the observed that could be understood as in some sense motivated by an idea of the "scientific"; as Ann Bermingham suggests of naturalism's ideological foundation, the "eighteenth-century view of nature as existing independently of social and cultural forms prepared the way for the empirical, scientific investigation of nature in the nineteenth century ..., this investigation provided the context in which Constable's naturalism developed."⁹ This article in no way suggests that the wealth of commentary on *Hadleigh Castle* is misguided in framing it in terms of profound introspection arising from personal loss, a reading that sets the work poles apart from Constable's earlier naturalism. It does however seek to balance these readings with the claim that of all Constable's works, *Hadleigh Castle* is perhaps the most deeply indebted to, and fundamentally engaged with, contemporary scientific ideas. When viewed in this light, Constable's bleak masterpiece can be appreciated as a complex embodiment of his later demand that painting be "*scientific as well as poetic ... a branch of natural philosophy, of which pictures are but experiments*".¹⁰

This article reconsiders *Hadleigh Castle* in relation to Constable's likely engagement with various scientific disciplines prior to his explicitly recorded interest in the 1830s. It explores how the dynamic exchanges between the sea, the earth, and the sky that were established in *Hadleigh Castle's* composition correspond with contemporaneous geological and meteorological theories. The discussion then turns from the work's composition to Constable's handling of paint, which further binds the canvas into an intensely charged whole. When assessed in relation to early nineteenth-century theories of electrical charge and polarity, Constable's technique reinforces the suggestion that in the 1820s the artist developed an approach to painting that better expressed conceptions of the material world then emerging in British science. New conceptions of the material world shaped the development of a revised approach to depicting it: *Hadleigh Castle* emerges as a work that moved from the observation of particulars to the articulation of underlying forces, through which Constable gave pictorial form to the invisible conditions of life.

Geology – "matter itself must be in motion"

The composition of *Hadleigh Castle* differs significantly from those of Constable's previous large exhibition pictures. The shimmering horizon is remarkable in its prominence and height within the composition, almost exactly bisecting the canvas. This emphatic central division forms the axis

for an extensive mirroring of compositional elements, which is most conspicuous on the canvas's right-hand side. In contrast with the teeming whorls that expand across the vast majority of the work, the luminous band of sea is by its nature characterised by its horizontality, which is augmented by a linear application of paint that extends into the estuary's mudflats. The approximate outline and linear quality of this area is mirrored in the sky directly above it. Furthermore, the line of trees and bushes that cut diagonally from the bottom right into the canvas is echoed by a line of cumulus, from the base of which issue the most prominent shafts of sunlight. Juxtaposed with this voluminous row of cumulus, the dark mass of cloud that spreads out against the sky to meet the canvas's top edge appears flat, reflecting the relationship between the foreground's grassy bank and more distant trees (Fig. 2). Although this mirrored relation between tree and cloud is remarkable, it is hardly unprecedented for a painting to suggest formal affinities between the clumped masses of deciduous trees and those of cumulus clouds; indeed it is perhaps more evident in a number of works by artists to whom Constable looked, such as Jacob van Ruisdael in, for instance, *Landscape* (Fig. 3) and in many Gainsboroughs, such as the early *Cornard Wood, near Sudbury, Suffolk* (1746–48, Fig. 4), owned by Constable's uncle David Pike Watts from 1814.¹¹ In Gainsborough's work the parallels between cloud and tree are extended into the foreground forms of grass and scrub, creating a fascinatingly unified rhythm across the entire work. Similarly, in *Hadleigh Castle* the formal correspondence between tree and cloud is extended into the foreground, yet here the parity is exhibited between cloud and rock. For example, on the painting's left-hand side the billowing banks of cloud are a close kin of the stony outcrop that impinges on the ruined tower at the composition's extreme left, from which a line of boulders leads to the foreground mass of rock, modelled by impasted highlights into forms almost as nephelological as geological.

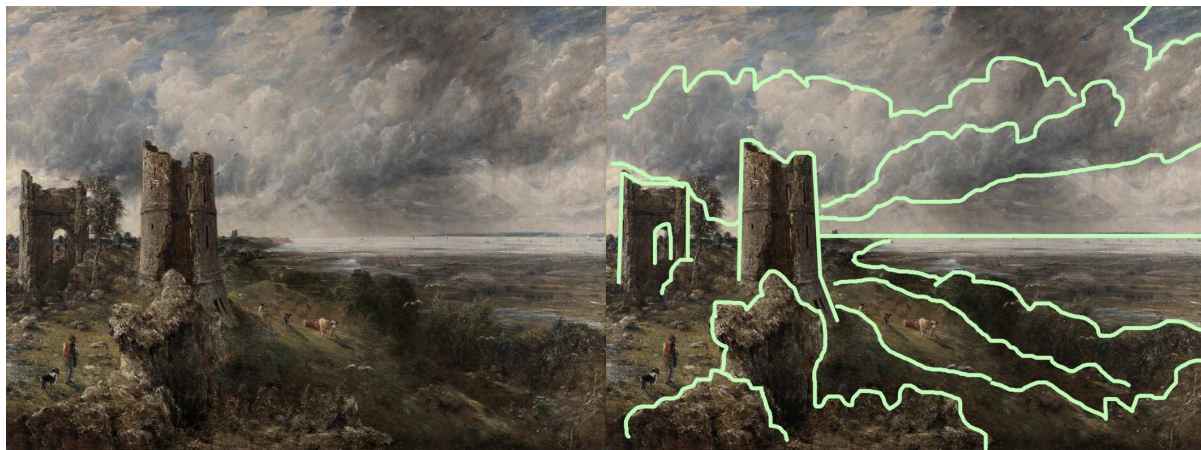


Figure 2a.

John Constable, Hadleigh Castle, The Mouth of the Thames--Morning after a Stormy Night, 1829, oil on canvas, 121.9 x 164.5 cm. Collection of Yale Center for British Art, Paul Mellon Collection (B1977.14.42). Digital image courtesy of Yale Center for British Art.

Figure 2b.

John Constable, Hadleigh Castle, The Mouth of the Thames--Morning after a Stormy Night, annotated by the author, 1829, oil on canvas, 121.9 x 164.5 cm. Collection of Yale Center for British Art, Paul Mellon Collection (B1977.14.42). Digital image courtesy of Yale Center for British Art.

**Figure 3.**

Jacob van Ruisdael, Landscape, ca. 1670, oil on canvas, 53.2 x 60 cm. Collection of the National Gallery of Art, Washington DC (1961.9.85) Digital image courtesy of Trustees of the National Gallery of Art.



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Figure 4.

Thomas Gainsborough, *Cornard Wood*, near Sudbury, Suffolk, 1748, oil on canvas, 122 x 155 cm. Collection of the National Gallery, London (NG925). Digital image courtesy of Trustees of the National Gallery.

Hadleigh Castle was painted in an age in which the connections between earth and cloud were being drawn increasingly close, both in meteorology and in geology. In 1835 Constable famously noted that “the sister arts have less hold on my mind in its occasional ramblings from my one pursuit than the sciences, especially the study of geology”.¹² An interest in geology in 1835 may suggest that the artist was stimulated by Charles Lyell’s three-volume *Principles of Geology*, which was published between 1830 and 1833 and “exercised a profound influence on the geology of his time”.¹³ Lyell’s magnum opus brought uniformitarian geology to international prominence. Rather than resulting from epochal catastrophe, divine creation, or, in Abraham Werner’s influential Neptunism, the progressive sedimentation of the evaporating oceans, uniformitarianism understood the earth to be in a continual state of change effected through landmasses rising due to subterranean forces and subsequently being eroded, a process in which rain—and thus also the clouds—plays a vital role. In asserting the gradual evolution of the earth over immeasurably vast periods, uniformitarianism radically challenged prevailing notions of the age and origin of the world. Timothy Mitchell has argued that the wide international acceptance of uniformitarianism that resulted from the publication of Lyell’s *Principles*, specifically in its superseding of Werner’s Neptunism, affected the course of

German landscape painting in the 1830s.¹⁴ However, Lyell's views were an extension of those already strongly advanced in Britain. Uniformitarian geology had its roots in James Hutton's *Theory of the Earth* of 1788, which argued that there is no "nature in a quiescent state; matter itself must be in motion" and famously concluded that there was no means of estimating the age of the earth, given that "we find no vestige of a beginning, no prospect of an end."¹⁵ When the pre-eminent British chemist Humphry Davy delivered a course of lectures on geology in 1805, Werner's geognosy was quickly brushed aside and it was Hutton's theory that demanded most respect and required greatest attention.¹⁶ In 1813, Constable's friend and advisor Joseph Farington recorded that "the changes which have taken place in the formation of the earth of this our Globe", was a subject of conversation over dinner with Anthony Carlisle (Constable's and Davy's acquaintance), from which it has been inferred that contemporary geology was a "'subject of conversation' among English artists".¹⁷ In sum, it is more than plausible that Constable would have been aware of recent conceptions of the composition and evolution of the earth's surface prior to the final decade of his career.

Meteorology and "the man of the clouds"

Constable's engagement with the sky is most explicit in his numerous oil studies devoted to the clouds. The majority of these were undertaken on Hampstead Heath in the summers and autumns of 1821 and 1822, shortly after which he referred to himself as "the man of the clouds".¹⁸ Yet, as with his interest in geology, Constable's fascination with meteorology only finds documented expression in the 1830s.¹⁹ At the close of 1836, Constable recommended that his friend George Constable consult Thomas Forster's *Researches About Atmospheric Phaenomena*, first published in 1813, of which Constable owned a second-hand 1815 second edition. Forster's book was greatly indebted to the work of Luke Howard—the "Father of Meteorology and the Godfather of Clouds"—whose fame primarily rests on his classifications of the genera of clouds and the theorising of their evolution, introducing the terms that, in expanded form, still exist to this day; cirrus, stratus, cumulus, nimbus and their intermediary modifications.²⁰ Howard urged that clouds should be considered as not merely "the sport of winds, ... ever varying, and therefore not to be defined." Rather, "they are subject to certain distinct modifications, produced by the general causes which effect all the variations of the Atmosphere".²¹ The forms assumed by the clouds are "visible indications" of the operation of the atmosphere and thus determined by the topography of the earth beneath them.

Considering the prominence of clouds within Constable's oeuvre it is unsurprising that meteorology's potential influence on his earlier development continues to stimulate debate.²² Indeed, it is commonplace to find it claimed without qualification that Constable "achieved this perfection in his skies ... by studying what had been written by contemporary scientists and meteorologists".²³ Conversely, as there is no evidence of Constable's knowledge of meteorological theory before 1836, for Anne Lyles there is an "overwhelming likelihood" that Constable acquired Forster's book "towards the end of his life when—by his own admission—he was developing a particular interest in the 'sciences'".²⁴ Yet late in life Constable recalled that the "best lecture" he had ever received was from Benjamin West in the early years of the century, and this lecture was specifically about the underlying qualities of clouds.²⁵ If this stuck with him over the decades, it is hard to imagine that at any subsequent point he would not have been interested in Howard's and Forster's works.

Given both the importance of clouds within Constable's works and this article's focus on the potential scientific influences that are traceable in *Hadleigh Castle*, it is helpful to examine in greater depth the likely period in which Constable may have first encountered Howard's ideas. There are grounds to believe that if Constable had encountered Howard's work prior to his Hampstead sketching it is likely to have been around 1803. In this year Howard's theories and nomenclature were first published in a three-part serialisation in Alexander Tilloch's *Philosophical Magazine*, including three pages of engravings derived from Howard's watercolours, the final plate setting his observations of the clouds within a landscape that would be recalled in the composition of *Hadleigh Castle* (Fig. 5).²⁶ In its mission to "diffuse Philosophical Knowledge among every Class of Society", *Philosophical Magazine* reached a wide readership and covered a diverse range of subjects, which extended to the fine arts.²⁷ As such, it is not unreasonable to claim—as has Louis Hawes in what I believe remains the most balanced account of this topic—that "Constable might conceivably have delved into a few volumes of the journal and come upon the cloud essay."²⁸ One can go further: considering the explosive interest in natural philosophy at the turn of the century—which saw the founding of the widely-circulated *Nicholson's Journal* in 1797, *Philosophical Magazine* in 1798, the Royal Institution of Great Britain in 1799, its *Journal* in 1801, and so forth—it is likely that someone with even a passing interest in science and who, in 1801, professed to spend his evenings reading,²⁹ would frequently glance at a copy of *Philosophical Magazine*. Furthermore, between 1800 and 1803 the magazine published Edward Dayes's nine *Essays on Painting*. These opened with "An Essay to illustrate the Principles of Composition As Connected With Landscape Painting", a subject that could hardly fail to pique the young

artist's interest,³⁰ and Dayes's seventh essay warmly refers to the "masterly productions" of Constable's patron, Sir George Beaumont.³¹ The series concluded in 1803 in the volume immediately preceding that in which Howard's essay first appeared and—as his correspondence late in life makes clear—Constable was certainly aware of Dayes's writings.³² Added to this, the volume of *Philosophical Magazine* in which was published the third and final section of Howard's essay contained a frontispiece engraving after a drawing by Lady Beaumont (Sir George's wife), which makes it more than likely that the journal would have been present in the Beaumonts' town house.³³ We know that at this period Constable often visited the Beaumonts and later recorded that they enjoyed showing him examples of their works.³⁴ If he were shown the frontispiece engraving it would only require that he turn over two pages and view the top item in the contents to note Howard's essay. This would be shortly after Benjamin West is presumed to have offered Constable memorable advice about clouds; it would be surprising if the young artist had not turned over a few more pages and encountered Howard's essay.

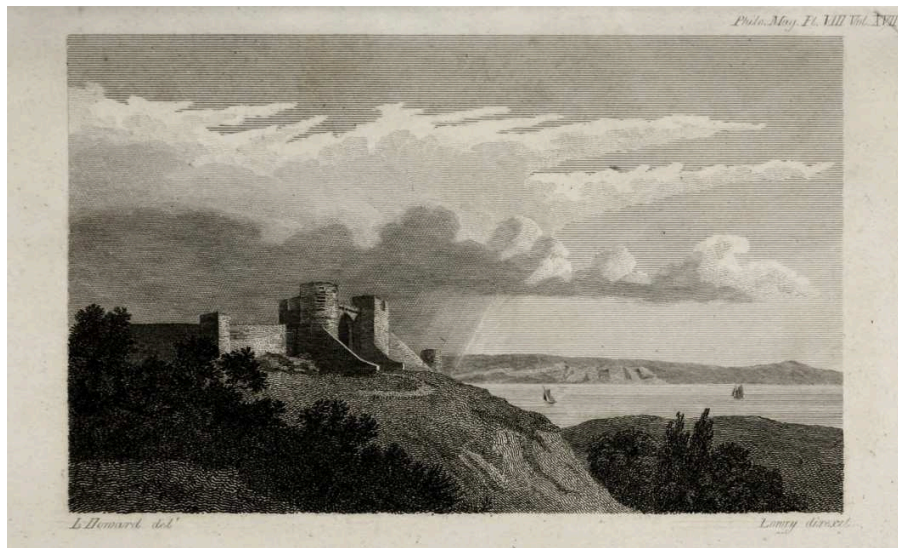


Figure 5.

Luke Howard, Untitled, from *Philosophical Magazine* 16 (June–September 1803), n.p., pl. 8. Digital image courtesy of Biodiversity Heritage Library.

The points raised by Hawes and augmented above offer probable, if still circumstantial, reason to assume Constable's early knowledge of Howard's work. Yet Hawes is scrupulous in not ascribing an awareness of meteorology undue significance, arguing that whilst Constable may have had an interest in contemporary meteorology it has no great claim to be considered a causal factor in the artist's turn to the clouds, nor is there reason to believe that knowledge of Howard's or Forster's work conspicuously affected his actual

paintings.³⁵ Relegating the significance of meteorology makes sense if it is to be considered an isolated case of Constable's engagement with a contemporary scientific discipline, or if one believes the frequently implied claim that Constable's "interest in the natural sciences remained tied to his practice and aims as a landscape painter".³⁶ Indeed—as has been suggested with palpable frustration—when viewed within the narrow framework of the cloud studies and meteorology, perhaps "the argument over meteorology in Constable is a dead letter."³⁷ However, to approach meteorology in isolation from a wider framework of scientific thought is hardly tenable, either in relation to Constable or to the intellectual culture of London more broadly in the early nineteenth-century. For instance, Constable's correspondence from his earliest years as a painter indicates a wider interest in scientific pursuits, such as astronomy and chemistry.³⁸ Furthermore, for Constable to be profoundly interested in natural science would have been wholly in accord with his generation.³⁹ Without looking beyond Constable's acquaintances, although William Wordsworth may more often be remembered as the paradigm of one who "despised scientific method",⁴⁰ when asking Davy's advice on establishing a laboratory in the Lake District in 1801 Samuel Taylor Coleridge not only remarked "how long, how ardently I have wished to initiate myself in chemical science", he also noted that Wordsworth was "desirous, too, not to be so wholly ignorant of knowledge so exceedingly important".⁴¹ As Constable's close friend and biographer the painter C.R. Leslie later suggested, during this era "every artist who deserves the title" had good reason to be "interested in *all* natural science".⁴² A final objection is intrinsic to early nineteenth-century meteorology: as Howard noted, if the forms of clouds were "produced by the movements of the atmosphere alone, then indeed might the study of them be deemed an useless pursuit of shadows", yet—as the following section will explore in depth—for Howard, the modification of clouds are "produced by the general causes" that permeate all nature; indeed, the study of clouds is important because they are "visible indications of the operation of these causes".⁴³ As such, an interest in meteorology suggests a heightened awareness of the interconnections between the elements of a landscape, rather than an exclusive focus on one.

Hadleigh Castle articulates these interactions of sky, sea, and earth. Established through a mirroring that speaks of an interchangeability between aspects of the landscape, the relationship between the two halves of Constable's canvas is strengthened by the latticed interplay of sunlight and rain at the extreme right, the rain equally appearing to ascend from the sea into the atmosphere as to descend from the clouds; as Howard notes, of the "origin of clouds there can be but one opinion—that the water of which they consist has been carried into the atmosphere by evaporation. ... During the

heat of the day a great quantity of vapour is thrown into the atmosphere from the surface of the earth and waters.”⁴⁴ As light and vapour suture globe and sky into one system of interchanging states, on the canvas the castle punctures both, wedding them in a potent symbol of how the continual flux of the elements will return unto the ever-changing earth not only the humanly-given form of the building but also the very rocks.

“heat. wind electricity moisture” – Constable's Charged Canvases

The dynamic interplay between sea, earth, and sky that Constable established in *Hadleigh Castle*'s composition was augmented by his painterly technique. When compared with the artist's major exhibition canvases of the intervening years—*The Cornfield* (1826, Fig. 6), *The Chain Pier, Brighton* (1827, Fig. 7), *Vale of Dedham* (1828, Fig. 8)—*Hadleigh Castle* marks a return to the widely-recognised all-over animation of his final Stour Valley canvas, *The Leaping Horse* (1825 Fig. 9). In this work, although “it is the horse that leaps, the whole picture is about movement, about the animation of nature.”⁴⁵ *The Leaping Horse* can be understood as the first fully-fledged example of Constable having attained a painterly style undergirt by his scientific commitments. It is the first exhibition canvas in which is evident an approach to painting that asserts the changeability of every compositional element and, perhaps, an interchangeability across these. It was a technique developed in the paintings that followed the summer of 1821 and was worked out through the interaction between full-size sketch and exhibition picture; the dynamism achieved in the sketch migrating to the exhibition picture not directly but through an evolving use of the palette knife that traced over sparse underpainting the sparkle of forms. This technique emerged alongside compositions that increasingly foregrounded the charged moment rather than the languid cyclicism of the first three Stour six-footers. In the earlier landscapes an elevated viewpoint emphasised the extensive temporality of the canalised Stour, around which the activity was played out. Whether in the slow progress of the stationary horse, ferried from bank to bank in *The White Horse*, the foreground fishing of *Stratford Mill*, or the mid-stream, midday passage of a wain to be loaded by distant reapers, to return full in *The Hay Wain*, the flow of the Stour dictated the flow of life and of time, dictating also the speed of the painting. From *View on the Stour* onwards, Constable's viewpoint is lowered, focusing attention on increasingly dynamic and definitive human actions, which culminate in *The Leaping Horse*.⁴⁶



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Figure 6.

John Constable, *The Cornfield*, 1826, oil on canvas, 143 x 122 cm. Collection of the National Gallery, London (NG130). Digital image courtesy of Trustees of the National Gallery.



Figure 7.

John Constable, Chain Pier, Brighton, 1826-7, oil on canvas, 127 x 182.9 cm. Collection of Tate (N05957). Digital image courtesy of Tate (Creative Commons CC-BY-NC-ND (3.0 Unported))



Figure 8.

John Constable, *The Vale of Dedham*, 1828, oil on canvas, 144.5 x 122 cm. Collection of Scottish National Gallery (NG 2016). Digital image courtesy of National Galleries Scotland | Photo: Antonia Reeve.



Figure 9.

John Constable, *The Leaping Horse*, 1825, oil on canvas, 142 x 187.3 cm. Collection of the Royal Academy of Arts, London (03/1391). Digital image courtesy of Royal Academy of Arts, London.

The same sense of a pervasive energy that animates *The Leaping Horse* is equally compelling in *Hadleigh Castle*, in which objects are defined in terms not of substance or weight but of charge and potential. Rather than evoking form through the articulation of solid objects, under the palette knife's touch form emerges through the light that gives life to a surface, or perhaps through the energy flowing within and across objects, which finds kinship in the light of the sky and the charged intensity of the clouds. In this regard the frustratingly few legible words of Constable's marginal annotations to Forster's *Researches About Atmospheric Phaenomena* are relevant. Responding to Forster's "no cloud effuses rain until it has previously undergone a change sufficiently remarkable to constitute a distinct modification," the artist writes, "this is not correct electrical fluid will convert an [...] without an [...]". To Forster's comments regarding the movement of cirrus "as if every particle was alive", Constable adds that "this also happens in cumulus thunder clouds", and notes: "heat. wind electricity moisture".⁴⁷ Constable's mentions of electricity are unsurprising; as the "universal power" to which all "physical enquirers" then turned to understand nature's "most important and secret operations", the phenomenon played an understandably key role throughout Forster's book.⁴⁸ In this Forster is consistent with Luke Howard who, at the start of the century, stressed the role played in the modification of clouds by "the constant operation of electricity, which is sometimes so manifestly accumulated in clouds, upon

their forms and arrangement,” arguing that in asserting the universal influence of electricity “we shall not much overstep the limits of experimental inquiry”.⁴⁹ Forster suggests that the “discoveries made by Sir H. Davy seem calculated to throw light on this interesting subject” and that Davy’s “experiments incline one to regard it as the universal agent in all the changes of form which matter undergoes.”⁵⁰ For instance, in 1807 Davy delivered at the distinguished Bakerian lectures a course titled “On Some Chemical Agencies of Electricity” and “detailed the general methods of decomposition by electricity” through which Davy had isolated several newly-discovered elements, highlighting the divisibility of the stuff of earth and electricity’s part within this.⁵¹ Uniformitarian geology had wed rain and earth as partners within an ongoing global process; new conceptions of electricity were likewise uniting the clouds and the earth.

As Coleridge remarked in the mid-1810s, “the discovery of electricity ... may be affirmed to have electrified the whole frame of natural philosophy”; it should not be surprising that a radical transformation in how the material world was perceived would affect developments in how it was represented.

⁵² In 1807 the close union of cloud and land effected by electricity was expressed by Constable’s contemporary in London, Cornelius Varley, who was in equal measure a painter and natural philosopher and to whose art—it has been speculated—Constable’s early naturalism owed a possible debt.⁵³ Published in Tilloch’s *Philosophical Magazine*, Varley’s “On Atmospheric Phaenomena” is a study of clouds “founded upon actual observations ... and on the known and admitted laws of electricity.” Varley drew seven conclusions from his observation of the weather, the first three of which are enough to convey a sense of his position:

1st, That no cloud can be formed, or exist, without electricity. 2d, That no cloud can rain till it parts with some of its electricity. 3d, That in fine weather the earth must be giving electricity to the atmosphere by means of vapour, and in stormy weather the atmosphere must be giving electricity to the earth by means of vapour, rain, or lightning.⁵⁴

Perhaps something of Varley’s third law could be seen to relate to the dynamic interplay between sea and sky in the right-hand horizon of *Hadleigh Castle*. However, I include Varley’s theories because they bring to my mind Constable’s great contemporary, J.M.W. Turner. Given that Turner was acquainted with numerous distinguished natural philosophers—notably Michael Faraday and Mary Somerville—and throughout his career, both in friendships and subject matter, showed a keen interest in scientific and technological advances, it is understandable that his work has recently been

explored in relation to contemporary science.⁵⁵ I shall not examine Turner's work in relationship to electricity in any great detail, yet it is instructive to reflect briefly on how certain iconic works roughly contemporary with *Hadleigh Castle* differ from Constable's canvas (and from Constable's major works of this period, for example *Salisbury Cathedral from the Meadows*, in which electricity is writ large across the sky in its most spectacular form: electricity, "this wonderful agent, which we see in intense activity in lightning", as John Herschel put it in 1830 in his hugely influential summary of contemporary scientific thought).⁵⁶ Prefigured in some respects by paintings such as *Snow Storm: Hannibal and his Army Crossing the Alps* (1812), in later canvases such as *Stormy Sea* (1840-45), *The Morning after the Deluge* (1843), *Snow Storm* (1842), and—overlooked by *Hadleigh Castle*—*Off the Nore* (1840-45 Fig. 10), light becomes a shrouding membrane through which the world as matter is revealed, or within which it dissolves.



Figure 10.

Joseph Mallord William Turner, *Off the Nore*, ca. 1840-45, oil on paper laid on canvas, 30.5 x 45.7 cm. Collection of the Yale Center for British Art, Paul Mellon Collection (B1978.43.16). Digital image courtesy of Yale Center for British Art.

Turner's luminous atmospheres carry a charge that recalls Varley's suggestion, cited above, that "in fine weather the earth must be giving electricity to the atmosphere by means of vapour, and in stormy weather the atmosphere must be giving electricity to the earth by means of vapour, rain, or lightning". In contrast, in *Hadleigh Castle* charge is immanent to matter, rather than a vapour. As the earth and sea approach the horizon they do not dissolve into the sky; sea and sky meet in pulsating, shimmering bands. They discharge between one another, but remain distinct. More generally, in this painting it is as though all things—the earth, the water, the trees, the

clouds—are animated with a kindred energy. In this regard one can perhaps return to Constable's annotation, to "electrical fluid", the concept that had dominated the field of research throughout the eighteenth-century into the 1830s, whether the "two-fluid" theories prominent in French thought (in which different negatively- and positively-charged liquids flowed through bodies), or more probably the "single-fluid" theory first popularised by Benjamin Franklin (in which negativity and positivity resulted from paucity or excess of the same fluid). ⁵⁷ This fluid was posited as the "universal agent in all the changes of form which matter undergoes", a medium (or mediums) of opposition that animated neutral matter. The more time that I spent with *Hadleigh Castle*, the more I was struck by how little paint the artist had used; rather than render continuous tone, in many areas of the canvas the forms of objects emerged from a neutral brown ground, a "scattering" of "spots over the surface", as a contemporary reviewer complained. These spots—"Constable's snow"—no longer embellished painted form, as in my opinion they had until *The Leaping Horse*: they constituted form by tracing passages of heightened intensity over an undifferentiated ground.

"Adding to the Art, qualities of Nature unknown to it before"

In the weeks that followed *Hadleigh Castle's* exhibition, Constable embarked upon the collection of mezzotints that formed his *English Landscape*. The project would variously engage, harass, and enrage him for the next four years. Implicit in the prints themselves and explicit in Constable's letterpress introduction, the collection foregrounded chiaroscuro as his central concern; the vitality of the landscape derived from the opposition of dark and light, of positive and negative—as it had in *Hadleigh Castle* and in contemporary scientific discourse. ⁵⁸ His introduction also urged that, rather than limiting one's study to past art, the artist should draw from "a far more expansive field," finding "innumerable sources of study, hitherto unexplored, fertile in beauty" in order to form "a style which is original; thus adding to the Art, qualities of Nature unknown to it before." ⁵⁹ This essay has argued that for Constable one such source of study was science. Constable's movement away from a naturalistic idiom grounded in a notion of the scientific can be understood to coincide with the development of a painterly style that was more appropriate for expressing actual conceptions of the material world that were then finding acceptance in scientific discourse. As such, rather than being a bold statement, Constable's famous suggestion from 1836 that landscape painting "be considered as a branch of natural philosophy, of which pictures are but experiments" hardly does justice to the painter's engagement with science: as William Herschel put it, "what would all experiments avail if we should stop there, and not argue upon them Half a dozen experiments made with judgment by a person who reasons well, are worth a thousand random observations". ⁶⁰ Rather than a retreat from the

presumed scientific aspiration of naturalism's "thirst for objectivity, for the innocent eye", *Hadleigh Castle* can be understood as a maturation of scientific influence that offered a formally convincing engagement with newly conceived qualities of nature; looking beneath local appearance it traced the invisible but universal physical conditions of life.⁶¹

Hadleigh Castle, The Mouth of the Thames—Morning after a Stormy Night is a great balancing act, one of dynamism rather than stasis. Set at the mouth of the Thames, the confinement of the river broadens into the sea's expanse, limitless to the eye and radiant at the very centre of the canvas. The storm departs, its clouds parted by a brilliance interpenetrated with rain. Light leads to the distant ships, from which vantage a rainbow would be visible—the sign of God's covenant with "every living creature of all flesh", not present to *Hadleigh Castle's* viewer yet so conspicuous in the painting that Constable began in the months following its first exhibition, *Salisbury Cathedral from the Meadows*.⁶² My main concern has been to rethink *Hadleigh Castle's* relationship to one aspect of Constable's rich intellectual life: with how revised conceptions of materiality challenged modes of representation inherited from a prior age or, as it were, with how Constable balanced Genesis with contemporary geology—a common enough endeavour in his century.⁶³ Yet, as it evokes transitions of states—between freshwater and salt sea; between storm and sunlight, together effecting the movement from sea, through air, to land and river in an ongoing process implicating the local with the global—*Hadleigh Castle* also marks a transition in Constable's oeuvre. Although attending with any rigour to Constable's subsequent works is beyond the scope of this article, it is motivated by a desire that its in-depth attention to *Hadleigh Castle's* complexities may cast new light on aspects of the artist's final years. To touch upon just one example, *Hadleigh Castle's* tension between the confined and the limitless becomes an increasing paradox in Constable's last decade. Following Leslie's suggestion that "the confinement of his studies within the narrowest bounds in which, perhaps, the studies of any artist were confined, was in the highest degree favourable", for nearly two centuries discussions of the artist have been framed in terms of the local and familiar.⁶⁴ This is undoubtedly germane. Yet Constable's explicit interest in science in these years points outwards, away from the specific and singular to the universal; thus he aligned Richard Wilson with Linnaeus, Wilson being "one of the great appointments to shew to the *world* the hidden stores and beauties of Nature ... who shew to the world what exists in nature but which was not known till his time."⁶⁵ Furthermore, although omitted from Leslie's account, when publicly discussing art in these years Constable's perspective was remarkably broad; in his lecture notes he makes important reference to the "descriptions of external nature" made by Bishop Reginald Heber in his *Narrative of a Journey Through the Upper Provinces of India* and places William Hodges—most

famous for his large oils of Tahiti derived from his experiences on James Cook's second expedition into the Pacific Ocean, and his later scenes from India—among the handful of artists he believed constituted the foundation of an English school of landscape.⁶⁶ Perhaps then it is not surprising that the global voyage of exploration should assume a spectral presence in the book that most influenced hermetic interpretations of the artist: although claiming that Constable's merits derived from his "confinement" within the "narrowest bounds", when Leslie first drafted a preface to the *Memoirs* the image of his friend that came to mind related Constable to a "voyage of discovery"; an "adventure" that was explicitly contrasted with those who limited themselves to "passage through well-known seas".⁶⁷ Despite the wealth of existing scholarship on Constable, this "voyage of discovery" and the role of science within it remains remarkably enigmatic.

Footnotes

- 1 Louis Hawes, "Constable's *Hadleigh Castle* and British Romantic Ruin Painting", *Art Bulletin* 65, no. 3 (1983): 456-57; Michael Rosenthal, *Constable. The Painter and His Landscape* (New Haven; London: Yale University Press, 1983), 214.
- 2 Quoted in Hawes, "Constable's *Hadleigh Castle*", 466-67. For a broader account of the ruin within British Romantic painting and poetry, see Hawes's *Presences of Nature: British Landscape 1780-1830* (New Haven: Yale Center for British Art, 1982).
- 3 Letter to David Lucas, 2 October 1832, in R.B. Beckett (ed.), *John Constable's Correspondence*, 6 vols. (Ipswich: Suffolk Records Society, 1962-78), 4:382 (hereafter cited as JCC I, JCC II, ...). On Constable's prints, see Andrew Shirley, *The Published Mezzotints of David Lucas after John Constable* (Oxford: Clarendon Press, 1930); David Hill, *Constable's English Landscape Scenery* (London: J Murray, 1985); Andrew Wilton, *Constable's English Landscape Scenery* (London: British Museum, 1979).
- 4 Letter to David Lucas, 20 November 1832 (JCC IV, 388).
- 5 Hawes, "Constable's *Hadleigh Castle*", 465.
- 6 Anne Lyles (ed.), *Constable: The Great Landscapes* (London: Tate Publishing, 2006), 175.
- 7 Rosenthal, *Constable. The Painter*, 215.
- 8 The term is John Gage's, *A Decade of English Naturalism, 1810-1820* (Norwich; London: Norwich Castle Museum; Victoria and Albert Museum, 1969). On the division between Constable's earlier "naturalistic" and "dramatic" late paintings, see William Vaughan, "Constable's Englishness", *Oxford Art Journal* 19, no. 2 (1996): 17-27.
- 9 Ann Bermingham, *Landscape and Ideology: The English Rustic Tradition 1740-1860* (Berkeley; Los Angeles: University of California Press, 1986), 152-53. Discussing the historically labile term "science" begs for the term's clarification, yet no definition would do justice to its productively conflicting employment at this period. See Sydney Ross, *Nineteenth-Century Attitudes: Men of Science* (Dordrecht; London: Kluwer Academic, 1991), ch. 1; David Knight, "Romanticism and the Sciences", in *Romanticism and the Sciences*, ed. Andrew Cunningham and Nicholas Jardine (Cambridge: Cambridge University Press, 1990).
- 10 C.R. Leslie's record of Constable's Royal Institution lectures 1 and 4, 1836, in R.B. Beckett ed., *John Constable's Discourses* (Ipswich: Suffolk Records Society, 1970), 39, 69 (henceforth JCD). It should be noted that even when directly transcribing Constable's letters Leslie was fond of embellishment and the lectures found their enduring form long after Constable's death—a caution which has not hindered their unqualified and influential use.
- 11 John Hayes, *The Landscape Paintings of Thomas Gainsborough*, 2 vols. (London: Sotheby Publications, 1982), 2:343.
- 12 Note of 10 November 1835 (JCC V, 194).
- 13 Archibald Geikie, *The Founders of Geology* (London: MacMillan, 1905), 403.
- 14 Timothy Mitchell, *Art and Science in German Landscape Painting 1770-1840* (Oxford: Oxford University Press, 1993), 6-8, 181. On the relationship between British landscape painting and geology in the early nineteenth-century, see Charlotte Klonk, *Science and the Perception of Nature: British Landscape Art in the Late Eighteenth and Early Nineteenth Centuries* (New Haven: Yale University Press, 1996).
- 15 James Hutton, "Theory of the Earth", *Transactions of the Royal Society of Edinburgh* 1 (1788-89): 209, 304. Although Hutton's essay was not widely read, it reached a wide readership when reformulated in John Playfair's influential *Illustrations of the Huttonian Theory of the Earth* (1802).
- 16 Robert Siegfried and R.H. Dott, Jr., "Humphry Davy as Geologist, 1805-29", *The British Journal for the History of Science* 9, no. 2 (1976): 219-227.

- 17 Joseph Farington, *The Farington Diary*, ed. James Greig, 7 vols. (London: Hutchinson, 1922–28), 7:151; Charlotte Klunk, *Science*, 99.
- 18 Letter to Fisher, 2 November 1823 (JCC VI, 142).
- 19 Letter to George Constable, 12 December 1836 (JCC V, 36). This is with the possible exception of the questionable inscription of “cirrus” on the reverse of a study typically dated to 1822, the original word being obscured by writing in another’s hand. Despite the frequent (yet wholly erroneous) claim that Constable inscribed *all* of the 1822 sketches with time, date, and weather details, he was methodical enough that it is improbable that he would offer technical terms on only one of dozens of instances.
- 20 John A. Day and Frank H. Ludlam, “Luke Howard and His Clouds”, *Weather* 27, no. 11 (1972): 448.
- 21 Luke Howard, *On the Modification of Clouds* (London: J. Taylor, 1803), 3.
- 22 For what seems the earliest suggested link, see E.L. Hawke, “Constable’s Clouds”, *Times*, 8 April 1937: 12. Relatively recent additions include John Thorne’s interdisciplinary monograph, *John Constable’s Skies: A Fusion of Art and Science* (Birmingham: University of Birmingham Press, 1999); *Constable’s Clouds*, ed. Edward Morris (Edinburgh: National Galleries of Scotland; Liverpool: National Museums & Galleries, 2000); and *Constable’s Skies*, ed. Frederic Bancroft (New York: Salander-O’Reilly Galleries, 2004).
- 23 John Thorne, “Constable’s Meteorological Understanding and his Painting of Skies”, in *Constable’s Clouds*, ed. Morris, 159. For further claims of meteorology’s influence on Constable’s art around or before 1820, see Richard Hamblyn, *The Invention of Clouds: How an Amateur Meteorologist forged the Language of the Skies* (London: Picador, 2001), 228; Martin Kemp, *Seen Unseen: Art, Science, and Intuition from Leonardo to the Hubble Telescope* (Oxford: Oxford University Press, 2006), 152.
- 24 Anne Lyles, “This Glorious Pageantry of Heaven”, in *Constable’s Skies*, ed. Bancroft, 43.
- 25 C.R. Leslie, *Memoirs of the Life of John Constable* (London: Phaidon, 1995), 11–12.
- 26 “On the Modification of Clouds, and on the Principles of their Production, Suspension, and Destruction”, *Philosophical Magazine* 16 (1803): 97–107; 344–357; vol. 17 (1803): 5–11. In the same year Howard’s essay was brought together in the above-cited *On the Modification of Clouds*, to which subsequent citations will be made.
- 27 *Philosophical Magazine* 1 (1798), unpaginated preface.
- 28 Louis Hawes, “Constable’s Sky Sketches”, *Journal of the Warburg and Courtauld Institutes* 32 (1969): 345–46.
- 29 Undated letter to John Dunthorne, ca. 1801 (JCC II, 26).
- 30 *Philosophical Magazine* 8 (1800–1): 293–305. This became the first essay in the series with the publication, starting from 1802, of the remaining essays.
- 31 *Philosophical Magazine* 14, 226.
- 32 Undated letter to William Carpenter (JCC IV, 147). The success of his Dayes’s essays in *Philosophical Magazine* is suggested by the advertisement to *The Works of the Late Edward Dayes*, published in 1805 shortly after the artist’s death, which noted that Dayes’s writing were “already known to the Public ... through the Medium of that esteemed Journal, the *Philosophical Magazine*”. *The Works of the Late Edward Dayes*, ed. E.W. Brayley (London: T. Malden, 1805), unpaginated advertisement.
- 33 *Philosophical Magazine* 17. Hawes states that the engraving after a sketch by Lady Beaumont was in volume 16, in which appeared the first two parts of Howard’s essay (“Constable’s Sky Sketches”, 346, n. 7).
- 34 Letter to Maria Constable, 27 October 1823 (JCC II, 292).
- 35 Hawes, “Constable’s Sky Sketches”, 363.
- 36 Louis Hawes, “John Constable’s Writings on Art” (PhD diss., Princeton University, 1963), 60. Ray Lambert has more recently made a similar claim, *John Constable and the Theory of Landscape Painting* (Cambridge: Cambridge University Press, 2005), 3.
- 37 Gillen D’Arcy Wood, “Constable, Clouds, Climate Change”, *Wordsworth Circle* 38, no. 1–2 (2007): 33.
- 38 Reference to astronomy, letter to John Dunthorne, 8 January 1802 (JCC II, 27). On the wild public popularity of astronomy around 1800, see Jan Golinski, “Sublime Astronomy: The Eidouranian of Adam Walker and His Sons”, *The Huntington Library Quarterly* 80, no. 1 (2017): 135–57. In 1797 Constable was involved with the basic chemistry required for etching, the artist choosing to make his own nitric acid. See undated letter to John Thomas Smith, in Leslie Parris, Conal Shields, Ian Fleming-Williams (eds.), *John Constable, Further Documents and Correspondence* (Ipswich: Suffolk Records Society, 1975), 292 (hereafter cited as FDC). Constable’s library contained an annotated 1797 edition of Thomas Garnett’s *Outlines of a Course of Lectures on Chemistry*, which briefly explains the production of nitric acid while ranging across developments in the field of chemistry. Thomas Garnett, *Outlines of a Course of Lectures on Chemistry* (Liverpool: J. M’Creery, 1797), 82.
- 39 See Cunningham and Jardine, ed., *Romanticism and the Sciences* (Cambridge: Cambridge University Press, 1990). Fred Blick, “Wordsworth’s Dark Joke in ‘The Barberry-Tree’: The Influence of Humphry Davy, Coleridge and the ‘Gang’”, *Romanticism* 20, no. 3 (2014): 246–260.
- 40 Max Oelschlaeger, *The Idea of Wilderness: From Prehistory to the Age of Ecology* (New Haven; London: Yale University Press, 1991), 98.
- 41 Samuel Taylor Coleridge, *Letters of Samuel Taylor Coleridge*, ed. Ernest Hartley Coleridge, 2 vols. (Boston, MA; New York: Houghton, Mifflin & Co., 1895), 1:346.

- 42 Charles Robert Leslie, *Autobiographical Reflections*, ed. Tom Taylor (Boston, MA: Ticknor and Field, 1860), 51, my emphasis.
- 43 Howard, *Modification of Clouds*, 3.
- 44 Howard, *Modification of Clouds*, 14, 20.
- 45 Leslie Parris, *Constable: Pictures from the Exhibition* (London: Tate Gallery, 1991), 57. For similar sentiments, see Lyles, *Constable: The Great Landscapes*, 130; James Heffernan, *The Re-creation of Landscape: A Study of Wordsworth, Coleridge, Constable, and Turner* (Hanover, NH: Dartmouth College by University Press of New England, 1984), 75.
- 46 Anne Lyles suggests that from *View on the Stour* of 1822 onwards, in the Stour six-footers Constable “strove to give the figures a more emphatic role, and also to create landscapes with more strenuous and dynamic action”. Lyles, *Constable: The Great Landscapes*, 129. For fuller and excellent analyses of the evolving sense of time in these paintings, see Rosenthal, *Constable. The Painter*.
- 47 FDC, 44–45, ellipses as transcribed.
- 48 John Herschel, *A Preliminary Discourse on the Study of Natural Philosophy* (London: Longman, etc., 1830), 329.
- 49 Howard, *Modification of Clouds*, 24.
- 50 Forster, *Researches in Atmospheric Phaenomena*, 188–89.
- 51 Humphry Davy, “The Bakerian Lecture: On Some Chemical Agencies of Electricity”, *Philosophical Transactions of the Royal Society* 98 (1807–8): 1–56; Humphry Davy, “Electro-Chemical Researches, on the Decomposition of the Earths ...”, *Philosophical Transactions of the Royal Society* 98 (1807–8): 333.
- 52 Samuel Taylor Coleridge, *Hints Towards the Formation of a more Comprehensive Theory of Life*, ed. Seth Watson (London: Churchill, 1848), 31.
- 53 Gage, *Decade of English Naturalism*, 12. On Varley’s scientific interests, Klonk, *Science*, 126–30.
- 54 Cornelius Varley, “On Atmospheric Phaenomena”, *Philosophical Magazine* 27 (1807): 117.
- 55 On Turner’s relationship with contemporary science, see John Gage, *J.M.W. Turner: “A Wonderful Range of Mind”* (New Haven; London: Yale University Press, 1987), 206–33; James Hamilton offers an interesting marriage of Turner’s imagery and contemporary research on electricity and magnetism in *Turner and the Scientists* (London: Tate, 1998), 128.
- 56 Herschel, *Preliminary Discourse*, 239.
- 57 For a contemporary summary of the two theories, see Robert Hare, “An Essay on the Question, Whether there be two Electrical Fluids according to Du Faye, or one according to Franklin”, *Philosophical Magazine* 62, no. 303 (July 1823), 3–7. For a retrospective survey, Roderick W. Home, “Franklin’s Electrical Atmospheres”, *The British Journal for the History of Science* 6 (1972), 131–151.
- 58 The full title of the edition containing the letterpress introduction was *Various Subjects of Landscape, Characteristic of English Scenery, Principally Intended to Display the Phenomena of the Chiar’oscuro of Nature: from Pictures Painted by John Constable, R.A.*
- 59 Introduction to *English Landscape*, 1833 (JCD, 10).
- 60 William Herschel, “On the Utility of Speculative Inquiries”, in *The Scientific Papers of Sir William Herschel*, vol. 1, ed. John Louis Emil Dreyer (Cambridge: Cambridge University Press, 2013), lxxxii.
- 61 Gage, *Decade of English Naturalism*, 16.
- 62 “And it shall come to pass, when I bring a cloud over the earth, that the bow shall be seen in the cloud: And I will remember my covenant, which is between me and you and every living creature of all flesh”, KJV, Gn. 9:14–15. Amy Concannon has noted that the work’s first exhibition generated considerable commentary on the sky but none on a rainbow, from which she infers (surely more than plausibly) that it was added by the artist later, probably in the mid-1830s. See “The Painting”, in Amy Concannon (ed.), *In Focus: Salisbury Cathedral From the Meadows Exhibited 1831 by John Constable*, Tate Research Publication, 2017, <http://www.tate.org.uk/research/publications/in-focus/salisbury-cathedral-constable/the-painting>, accessed 28 August 2017. On Constable and rainbows, see also Paul Schweizer, “John Constable, Rainbow Science, and English Color Theory”, *Art Bulletin* 64, no. 3 (1982): 426.
- 63 On landscape painting as a meeting of theology and geology (within the United States), see Rebecca Bedell, *The Anatomy of Nature* (Princeton: Princeton University Press, 2001).
- 64 Leslie, *Memoirs*, 245.
- 65 Letter to Fisher, 9 May, 1823, my emphasis. Constable’s spelling—although Beckett renders Constable’s writing as “Linnacus” rather than “Linnaeus” (JCC VI, 117).
- 66 Hampstead lecture manuscripts of 1833 and 1836 (FDC, 24, 12, 16). On the relationship between Hodges and HMS *Resolution*’s scientific community, see Bernard Smith, *European Vision and the South Pacific, 1768–1850: A Study in the History of Art and Ideas*, 2nd ed. (New Haven: Yale University Press, 1985); see also the essays in Geoff Quilley and John Bonehill (eds.), *William Hodges, 1744–1797: the Art of Exploration* (London; New Haven: National Maritime Museum; Yale University Press, 2004).
- 67 1842 draft preface to *Memoirs* (FDC, 250).

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