

American Interiors: Beneath the Surfaces of Natural History in Early U.S. Writing

by

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## LIST OF ABBREVIATIONS

AAAS

American Academy of Arts and Sciences

APS

American Philosophical Society

*SPCWP*

Lillian B. Miller, Sidney Hart, and David C. Ward, ed., *The Selected Papers of Charles Willson Peale and His Family*, volume 2 (New Haven, 1988).

## ABSTRACT

This dissertation examines investigations of natural interiors – spaces below the visible surfaces of bodies and land – in the scientific and cultural literature of the early United States. My archive of scientific societies’ transactions, personal letters, journals, advertisements, as well as more familiar works like Jefferson’s *Notes on the State of Virginia* and Bartram’s *Travels*, shows early U.S. writers engaging with subjects excluded from or “unpremeditated” by typical organizational apparatuses of natural history: the collection, the classification grid, the geodetic system. Instead, they present the un- or partially perceptible interior as critical to ontological and epistemological understanding: a space within an outwardly visible form that differs substantively – either in its hollowness or its contents – from the surface but is nevertheless essential to and inextricable from the whole of the form in question.

This pervasive sense of physical interiority challenges historiographies of both early national natural history, generally understood as explaining the natural world by classifying its surfaces, as well as that of the early republic’s preoccupation with things hidden: secret conspiracies and disguised identities that threatened to undo the representations on which the new nation was structured. I argue, however, that these interiors resist and problematize the possibility of representation itself, because interior and exterior never match – not as a function of dichotomized truth and falsity, but rather as a function of the essential multiplicity of identity: of animal and human bodies, of the

physical earth – forms which are irreducibly multi-layered and ceaselessly shifting. Furthermore, I contend that this awareness of internal process and transformation develops prior to or separately from the nineteenth-century intellectual movements typically associated with it: comparative anatomical and geological study, European Romanticism, or the Emersonian erosion of subject/object dualism within American literature. This interiorized thinking, proceeding not linearly from point to point, but elliptically, internally, and a-rationally, is seen in the tracings of the embodied eye, the infectious fascination of American writers and readers, the a-linear, multi-branched skeletal frame of the mammoth and its “framed” history of submerged monuments and chronologically displaced and displacing discoverers, and the hyper-linear narrative threads of sub-geographies and chronologies.

## INTRODUCTION

### ‘What the Stone Covered’

In a letter to a friend in England, J. Hector St. John de Crèvecoeur recounts relaxing on an “enchanting” Virginia hillside, meditating on what readers of *Letters From an American Farmer* will recognize as typical Crèvecoeurian topics: town life compared to rural pastimes, New World and Old World pleasures, and the beauty of the southern harvest degraded by the specter of slavery. He soon turns, however, from this “predilected spot” and these “premeditated subjects” to recount an unexpected experience along the Potomac River. As he walked along the shore, he spied an unusual large flat stone on the ground, and “on looking at it more attentively, I perceived the marks of ancient sea-shells encrusted on its surface.” Marveling at how these “marine impressions” appeared so far from the sea, and “hoping to find some of these shell fragments better preserved on the opposite side” of the stone, he managed to raise the heavy slab, only to find something quite different: “to my great surprise and amusement I found that it served as a roof to a subterranean structure of a very singular appearance.” Instead of fossilized curiosities, the stone had “covered the upper walks of a town” in miniature, “seemingly composed of arches, of vaults, of a multitude of passages intermixed throughout the whole.” To give himself “a fuller view” of the underground scene, Crèvecoeur removed the stone completely, discovering that the hollow’s “obscure mansions” held thousands of



ants, which quickly descended further underground, “trusting, perhaps...to my inability to pursue them where all appeared so dark and intricate.”<sup>1</sup>

Crèvecoeur realizes that these observations do not adhere to certain expectations about the description of American nature, and may in fact disappoint the letter’s English audience: “When some of your friends hear of your having received a letter from North America, they will perhaps expect to hear some learned accounts of natural knowledge, botany, etc.,” he wrote sheepishly, wondering “what will they think of your correspondent when, instead of useful discoveries, important dissertations, they hear you read” a report of an underground “ant-hill town” instead?<sup>2</sup> Indeed, Crèvecoeur himself seems just as unsure of how exactly to frame this unlooked-for “incident.” The botany anticipated by European readers from their American sources, for example, proceeded within an established, even prefabricated, system of writing, with the structure of the taxonomical description of any plant, however novel, already prescribed according to the number and arrangement of its visible, external parts. This complex, subterranean space, however, did not lend itself to such diagramming. Crèvecoeur could note that the town was approximately two feet by three feet, and had “seventy-one streets” and “fourteen subterranean openings,” yet this information did not convey its compelling, and only partially-revealed, intricacy – “the first idea it conveyed was that of a labyrinth,” he wrote – or the dynamic activity of its inhabitants: “no pen can delineate the seeming confusion...which my bold intrusion caused among them,” he added.

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<sup>1</sup> This letter is one of twelve essays, left out “by design, necessity, or accident” from the English and French editions of Crèvecoeur’s *Letters from an American Farmer* (1782), which were published under the title *Sketches of Eighteenth-Century America*, in the early twentieth century; ed. Albert E. Stone, “Introduction,” 23, in *Letters From An American Farmer, and Sketches of Eighteenth-Century America*, 241-49.

<sup>2</sup> Crèvecoeur, *Letters and Sketches*, 249.

Some of this rhetorical hesitation may be intentional; much like his narrator James of *Letters*, Crèvecoeur claims a lack of scientific training or expertise in this missive. He regrets that he had never read Buffon; if he had, “I could have explained myself technically, whereas I am now speaking to you in the language of a schoolboy who possesses as yet nothing of knowledge besides curiosity.” Yet I suggest that this qualification of knowledge, possessed and not possessed, is revealing – particularly as an evaluation of “what the stone covered”: a complex space normally concealed from the world above. Instead of unfolding to a “(lettered, male, European) eye” that “could familiarize...new sites/sights immediately upon contact, by incorporating them into the language of the system,” as Mary Louise Pratt describes idealized Enlightenment observation, the uncovered town hints at much more that cannot be seen – at unexamined but constitutive depths. Even as Crèvecoeur marvels at sunlight filtering in “where his rays had never reached before,” he realizes that the ants’ “other and invisible recesses must have far exceeded this little insignificant surface.”<sup>3</sup> Knowledge of the phenomenon is confined to and contingent on Crèvecoeur’s direct and subjective experience: “in five minutes, not the least vestiges were left of that numerous society, and no one would have believed” that they had been there at all, perhaps not even the friend to whom he writes.

Like Crèvecoeur’s letter, this dissertation examines the spaces embedded within the early United States: interiors, at best partially visible or accessible to the observer, which troubled and indeed transformed Americans’ languages of discovery and knowledge. As the new nation attempted to “naturalize” itself in the 1780s and 1790s, the spaces and objects beneath nature’s surfaces – ranging from cavities within animal bodies, to subterranean caverns and passages, to the inside of the eye itself – not only

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<sup>3</sup> Crèvecoeur, *Letters and Sketches*, 246-247.

uniquely determined conditions for observation and description in accounts of nature, but redefined early national questions of representation and identity, both of the self and of the object. As these investigations comprise a substantial part of early republican encounters with the natural world, I argue that they engendered an *interiorized* way of thinking and knowing, one that gives rise to an epistemological vocabulary that is not “technical” but instead experiential, responsive, and individuated. In the texts that follow, early U.S. writers engage with subjects that were largely excluded from or “unpremeditated” by typical organizational apparatuses of natural history: the collection, the classification grid, the geodetic system. As containers that resist containment – that is, depths that may be perceived and experienced but not, in any reliable way, charted or collected – these spaces are largely absent from contemporary accounts of American natural history. At the same time, these hidden depths do not fit within our scholarly narratives of the concealment and conspiracy within the early republic. Rather, these spaces beneath the surface upend this oppositional model of inner truth versus outer appearance, instead asserting irreducible complexities of form. Indeed, Crèvecoeur’s riverside find is not just the unusual rock slab, or the fossilized impression of ancient marine life, or the intricate ant-town, but all of these elements layered together, and perhaps infinitely more layers beyond the reach of his eye or his pen.

### Early U.S. Natural History and the Continental Interior

Not unlike Crèvecoeur’s skeptical transatlantic correspondents, literary scholarship on early U.S. natural history or environmental writing widely assumes that

Americans, in keeping with the practices and purposes of the transatlantic scientific community, tried to explain the natural world by classifying its surfaces. The eighteenth-century naturalist, under the auspices of Linnaean and other classificatory schemes, sought “to transform the visible world perfectly into words” as Michael Gaudio writes, or as Theodor Adorno and Max Horkheimer broadly characterize Enlightenment goals, to reduce “the multiplicity of forms...to position and arrangement.” Indeed, many examples of early U.S. natural history do seem to conform to the terms of Michel Foucault’s classifying episteme, which limits natural history’s field of knowledge to the description and categorization of natural specimens by their surface characteristics, a formulation that still anchors most literary studies and historiographies of Anglo-American encounters with nature, despite attempts to move beyond, or even repudiate, Foucault’s depiction.<sup>4</sup> Joyce Chaplin, considering if there is a “specifically American natural history,” concludes that after the Revolution, U.S. scientific efforts were confined to “concrete and descriptive” methods of study that did not seriously disrupt a pervasive, transatlantic impression that American naturalists “merely documented flora and fauna.”<sup>5</sup>

Within this paradigm, scholars have persuasively argued that the naturalist’s surveying of these surfaces is, at least in part, an imperialist and expansionist scheme.

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<sup>4</sup> Michael Gaudio, “Swallowing the Evidence: Bartram and the Limits of the Enlightenment.” *Winterthur Portfolio* 36, no. 1 (Spring 2001): 3. Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment: Philosophical Fragments*, ed. by Gunzelin Schmid Noerr, trans. Edmund Jephcott. (Stanford University Press: 2002), 4-5. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Random House, 1970), 132-137. See also: Andrew Lewis, *A Democracy of Facts: Natural History in the Early Republic* (Philadelphia: UPenn Press, 2011); Pamela Regis, *Describing Early America: Bartram, Jefferson, Crèvecoeur, and the Rhetoric of Natural History* (DeKalb, Ill.: Northern Illinois University Press, 1992); Christopher Looby, “The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram,” *Early American Literature* 22, no. 3 (1987): 264. *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730-1860*. Ed. Sue Ann Prince. Philadelphia, The American Philosophical Society, 2003), 1-2.

<sup>5</sup> Joyce E. Chaplin, “Nature and Nation: Natural History in Context,” in *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730-1860*. Ed. Sue Ann Prince. (Philadelphia, The American Philosophical Society, 2003), 76-90.

Chaplin argues that U.S. natural history mimicked the British extension of dominion through natural science, except that America's project was "continental and looked inward," bent on mapping this ground in terms "not just of coastlines and rivers, but of every visible square, or even cubic, inch of the earth's surface," as Pratt writes. More recently Thomas Hallock has suggested that the wide-ranging body of natural history texts, which cover so many strangely disparate things, are best held together as a genre by "an effort to construct place, the desire to expand imperial realms through the charting of nature and natural processes." Natural history's foremost significance in the early nation was its role in the "vexed or partial attempts to create place from space," underwriting the republic's westward expansion.<sup>6</sup>

My aim is not to dispute the existence or significance of these "surface" epistemologies and ideologies in the early nation. Rather, I suggest that to begin (or end) with these meta-narratives – of nature's surfaces transferred into text or natural space turned into *place* – obscures the ways in which spaces that did *not* become known "places" shaped ways of knowing and writing in the early United States. Euro-American systems of natural knowledge have been described as "blanketing the surface" of the continental "interior," a space itself rendered cartographically and figuratively as a two-dimensional field of constitutive and contiguous space which justified the U.S. as nation. While this looming, monolithic figure is frequently characterized in current scholarship as the "field against which early national culture defined itself," I argue that encounters with other, "micro" interiors, such as caves or caches of ancient bones, acted as multiple

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<sup>6</sup> Chaplin, "Nature and Nation," 82. Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation*, (New York: Routledge, 2008), 23, 30, 37. Thomas Hallock, *From the Fallen Tree: Frontier Narratives, Environmental Politics, and the Roots of a National Pastoral, 1749-1826*, (Chapel Hill: UNC Press, 2003), 31. Martin Brückner, *The Geographic Revolution in Early America: Maps, Literacy, and National Identity* (Chapel Hill: UNC Press, 2006), 80.

fields of definition which were just as critical to conceptions of American space – and indeed, in imagining the continental interior itself.<sup>7</sup> This archive of early national texts and images, which dates from the first decades of the United States through the eve of its continental expansion in the first half of the nineteenth century, reconsiders what “interior” signified to Americans prior to the Louisiana Purchase, the expeditions of Lewis and Clark and Zebulon Pike, and broader demographic western movements.

For example, Thomas Jefferson, presenting a scientific memoir to the American Philosophical Society on huge bones found underground in the Virginia mountains in 1797, speculated if the animal to which these belonged – he called it a Megalonyx, or Great-Claw – still roamed somewhere beyond the current spread of white settlement. He reasoned that “in the present interior of our continent there is surely space and range enough for elephants and lions” and even for “mammoth and megalonyxes,” maintaining that Americans’ “entire ignorance of the immense country to the West and North-West, and of its contents, does not authorize us to say what it does not contain.”<sup>8</sup> Jefferson’s language of contents and containing connotes a more three-dimensional cavity, which might hold unexpected objects like the recently discovered fossil bones, than a blank, two-dimensional area. Hallock contends that the image of a supposedly “empty” backcountry in early U.S. literature prompted the early republic to (prematurely) elegize “things disappeared” from nature.<sup>9</sup> This study, however, demonstrates that accounts of American nature from this period are characterized just as much by things *appeared*: bones of enormous size and unknown origin, a snake undulating within the eye

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<sup>7</sup> Pratt, *Imperial Eyes*, 37. Hallock, *From the Fallen Tree*, 7.

<sup>8</sup> Thomas Jefferson, “A Memoir on the Discovery of Certain Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia,” *Transactions of the American Philosophical Society* 4 (1799): 251-252.

<sup>9</sup> Hallock, *From the Fallen Tree*, xi, 7.

of a horse, hidden republics of ants. These objects offer a new and heretofore unexamined definition of “the internal ‘contents’ of those land...masses whose spread make up the surface of the planet,” as Pratt describes natural history’s concerns.<sup>10</sup>

Indeed, the diverse, smaller-scale interiors found throughout the early nation, in the city and town as often as in the wilderness, call for a shift in our thinking about the “ideological geography of the new republic.” While it is evident, as Hallock and Martin Brückner argue, that “a spatial or geographic sense” informs much of early U.S. writing – both Jefferson’s and Crèvecoeur’s use of “the organizing premise of a map” are cited – these arguments do not address how these authors respond to un-mappable space. Crèvecoeur, an experienced surveyor, described maps presented like “pieces of linen” to colonists looking to purchase land, but he suggested these flat representations did not replicate multi-dimensional observations of the land.<sup>11</sup> Nor would these maps register the labyrinthine recesses of the ant town, stretching deep below the reach of the sun or the observer’s eye. If the surveyor’s longitude and latitude implies that “no point on the earth’s surface is unknown or unaccounted for, even if no one has been there” – these “dark and intricate” interiors are not locatable or calculable – and are often encountered by accident.<sup>12</sup>

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<sup>10</sup> Pratt, *Imperial Eyes*, 30.

<sup>11</sup> Crèvecoeur, *Letters and Sketches*, 254-255.

<sup>12</sup> Kent C. Ryden, *Mapping the Invisible Landscape: Folklore, Writing, and the Sense of Place*, (University of Iowa Press, 1993): 17. Hallock, *From the Fallen Tree*, 30. Brückner, *The Geographic Revolution*, 5-14.

## The Hidden Interiors of the Early Republic

Of course, at the same time that U.S. naturalists and surveyors sought to record the nation's visible surfaces, the early American republic is also characterized by its pressing and pervasive cultural concerns about what was concealed. Scholars have noted that in this period – and particularly in the 1790s, a decade in which many of the interior investigations I discuss were undertaken – the “concept of deception...was endemic in American thought.” Famously outlined by Richard Hofstadter in the 1960s and subsequently analyzed by influential American literary studies like Robert Levine's *Conspiracy and Romance: Studies in Brockden Brown, Cooper, Hawthorne, and Melville*, rampant suspicions of foreign and domestic conspiracies and hidden political plots both reflected the terrors of the French Revolution and appeared to be “grounded in Enlightenment paradigms of mechanism and free will” which emphasized human action, rather than divine will, upon environment as the cause of unexplained phenomena.<sup>13</sup> More recently, scholars like Wendy Bellion have argued that the urgency of early republican sensory discernment of the visible/invisible was foundational and constitutive to the American state and consciousness. Indeed, the social and psychological anxieties concerning “the fears and attractions of imposture,” traced through early national literature from George Washington's Farewell Address of 1796 to Charles Brockden

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<sup>13</sup>Richard Hofstadter, *Paranoid Style in American Politics*, (New York: Vintage Books, 2008) first published as an essay in *Harper's Magazine* in 1964. Gordon S. Wood, “Conspiracy and the Paranoid Style: Causality and Deceit in the Eighteenth Century,” *The William and Mary Quarterly* 39, no. 3 (1982): 401-441; Robert Levine, *Conspiracy and Romance: Studies in Brockden Brown, Cooper, Hawthorne, and Melville*, (Cambridge: Cambridge University Press, 1989), 4-6, 16.



Brown's mysterious, duplicitous, and "alien" villains, are all about identity – are you who you say are? How do we know? Put another way, does appearance match essence?<sup>14</sup>

This dissertation argues, however, that the discoveries of hidden things in the early republic tell a distinctly different story: an awareness, emerging within this same fraught period, that outer appearance and inner essence is a false binary. In these texts, I contend, the invisible or partially visible interior becomes critical to ontological and epistemological understanding: a space within an outwardly visible form that differs substantively from the surface – either in its hollowness or its contents – but is nevertheless essential to and inextricable from the whole of the form in question. Furthermore, this pervasive sense of material and ontological interiority in early republican scientific inquiries directly challenges dominant scholarly narratives concerning "concealment" and "the manipulative fictions of representation" within the early U.S.<sup>15</sup>

Brown's *Wieland*, for example, is widely read as a post-French Revolution account of the fallibility of the human mind and the republic itself, in which "biloquist" Carwin's disembodied voices deceive the rational society of Theodore Wieland's family and friends. The interloper Carwin, with his mysterious connections to subversive continental organizations, may not be directly responsible for all the tragic events that unfold – the novel and its unfinished sequel leave Carwin's involvement in Wieland's

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<sup>14</sup>Wendy Bellion, *Citizen Spectator: Art, Illusion, and Visual Perception in Early National America*, (Chapel Hill: The University of North Carolina Press, 2011): 8-22, 66-80. Leigh Eric Schmidt, *Hearing Things: Religion, Illusion, and the American Enlightenment* (Cambridge: Harvard University Press, 2000), 136. See also Jay Fliegelman, *Declaring Independence: Jefferson, Natural Language, & the Culture of Performance*, (Stanford University Press: 1993), 36- 38, 140-143.

<sup>15</sup> Fliegelman, introduction to *Wieland* by Charles Brockden Brown (New York: Penguin Books, 1991), xi.

destructive delusions unresolved.<sup>16</sup> Even so, Brown's use of ventriloquism, Jay Fliegelman suggests, points to the hidden or disguised fact within the early nation that "representation always involves distortion and loss," whether it is the people's will represented by their officials – the founders speaking as the invented, homogenous entity of "we the people" – or ideas represented by words, or objects represented by images.<sup>17</sup>

I argue, however, that hidden American interiors resist and problematize the possibility of representation itself in the early republic, because interior and exterior never match – not because of deception, counterfeit, or misrepresentation, nor as a function of dichotomized truth and falsity, but rather as a function of the essential multiplicity of identity: of objects, of animal and human bodies, of the physical earth. At any given moment, these forms are irreducibly multi-layered (skin, skeleton, viscera; surface crust, strata, capacious cavern); over the course of many moments, they are ceaselessly shifting and transforming. A cup of liquid, described by physician John Morgan in the midst of examining a peculiar phenomenon in early republican Philadelphia, is not – and cannot be known as – merely a cup of liquid: instead of pure water all the way through, it is a swirling mixture of milk, water, and a writhing, partially visible living snake. Likewise, the continental interior is not a "tabula rasa," but instead revealed to be a palimpsest of many pasts, coexisting in partially present material vestiges.

Indeed, the problem of "biloquism" or ventriloquy (literally – the voice from the stomach) in *Wieland* is not so much that Carwin presents himself falsely with his thrown

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<sup>16</sup> Brown, *Wieland*, 226. Levine, *Conspiracy and Romance*, 27.

<sup>17</sup> Fliegelman, introduction, xi; see also Fliegelman, *Prodigals and Pilgrims: The American Revolution Against Patriarchal Authority, 1750-1800* (Cambridge: Cambridge University Press, 1985): 237-241, and Peter Kafer, *Charles Brockden Brown's Revolution and the Birth of the American Gothic* (Philadelphia: University of Pennsylvania Press, 2004), 113-131.

voice, but that his “inwards” produce these “bi-” or multiple voices at all – that he contains this unfixed multitude of possible identities, just as Wieland, the devoted husband and father, is also the homicidal fanatic. While generations of literary critics have read Brown’s novels, all composed between 1798 and 1802, as a critique of “the futurity of a republic wherein ‘emigrants’ can theatrically fabricate identities as ‘Americans,’ all the while cloaking their origins, politics, and agendas,” I argue that these viscerally produced voices, emerging not from speakers’ visible physiognomies but “strangely...out of their bellies,” fundamentally disrupt the conditions of dissemblance.<sup>18</sup> Bodies are not necessarily stable forms that can be either disguised or ‘uncloaked,’ but rather move through the world with uncertain and shifting boundaries; voices enter other bodies as physical, if not quite material, communications in a kind of anti-model of human reason. Scholars have argued that performances of ventriloquism in the early republic tested citizens’ discernment and exposed the “protean malleability of identity,” yet Brown’s depiction suggests that any discovery of a ‘true’ identity depends less on the observer’s empirical perspicacity and more on the moment and depth inside the physical body or object at which the measure is taken.<sup>19</sup>

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<sup>18</sup> John Ash, in *The new and complete dictionary of the English language* (1775), defined *ventriloquy* as “the act of speaking in such a manner as though the sound proceeded from the belly”; see also Thomas Fuller (1642): “when men strangely speak out of their bellies,” as well as the obscure, early-seventeenth-century definition of “di[v]ination by the inwards of beasts,” Henry Cockeram, *The English dictionarie, or, A interpreter of hard English words*,” (1623); “ventriloquy, n.”. OED Online. December 2014. Oxford University Press. <http://www.oed.com.proxy.lib.umich.edu/view/Entry/222297> (accessed December 21, 2014). Levine, *Conspiracy and Romance*, 16.

<sup>19</sup> Schmidt traces ventriloquy’s shift from early modern religious discourses to its role in late-eighteenth-century American public culture as an “artifice” to reveal superstition’s errors and shore up empirical discernment, *Hearing Things*, 135-198. See also Bellion, *Citizen Spectator*, 173, and Barbara Judson, “A Sound of Voices: The Ventriloquial Uncanny in *Wieland* and *Prometheus Unbound*,” *Eighteenth-Century Studies* 44, no.1 (2010): 21-37.

Furthermore, engaging the materiality or substance of these interiors raises questions that readings of the “interiority” of American subject and self largely cannot.<sup>20</sup> Indeed, when literary analyses of the “human interior...[of] feelings, fantasy, desire, and affect” engage with early national representations of material subsurface spaces and objects, they tend to similar and somewhat logically circular conclusions. An author’s peculiar, “internal” genius inspires his interest in geological or corporeal cavities, which in turn reflect back that individual writer’s exceptional subjectivity. Jefferson’s exploration of a labyrinthine Virginia cavern expresses his penetrative understanding of the variegated human character, for example, or William Bartram’s darkly shaded drawing of a gaping Florida sinkhole illustrates his own self-doubt in creating a public persona.<sup>21</sup> Yet these arguments, while reconciling puzzling hollows in early national texts to modern concepts of the post-Freudian, psychological self, also work to estrange the reader from late-eighteenth and early-nineteenth-century experience, abstracting and obscuring the historical and material specificity of encounters with the natural world, and disregarding “the material world as something more than a humanly made concept” in the recent words of scholars of “new materialisms.”<sup>22</sup>

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<sup>20</sup> For example, Special Issue: “Interiority in Early American Literature,” *Early American Literature* 37, no. 1 (2002) ed. Julia Stern and Christopher Castiglia. 1, and Castiglia, *Interior States: Institutional Consciousness and the Inner Life of Democracy*, (Durham: Duke University Press, 2008). This is, admittedly, perhaps a too simplistic distinction between certain material subjects of the natural world and the human mind, as a subject for philosophers who “saw themselves as natural scientists exactly in the sense in which physicists, botanists and physiologists were natural scientists,” as Alexander Brodie argues, but one I use here more to distinguish among currents of modern scholarship. Brodie, “The Human Mind and Its Powers,” in Brodie, ed., *The Cambridge Companion to the Scottish Enlightenment* (Cambridge, 2003).

<sup>21</sup> See Douglas Anderson, “Subterranean Virginia: The Ethical Poetics of Thomas Jefferson,” *Eighteenth-Century Studies* 33, no. 2 (2000): 233-249. Gaudio, “Swallowing the Evidence,” 8-9.

<sup>22</sup> Stacy Alaimo, *Bodily Natures: Science, Environment, and the Material Self* (Indiana University Press, 2010), and Rochelle Johnson, “‘This Enchantment is no Delusion’: Henry David Thoreau, the New Materialisms, and Ineffable Materiality,” *ISLE: Interdisciplinary Studies In Literature and the Environment* 20, no. 3 (2014): 606-635. Alaimo and Johnson include such recent areas of inquiry as material feminism, material eco-criticism, postmodern materialism, vital materialism, and object-oriented ontology under the

In contrast, I suggest that the assumption that metaphorical interiorities provide the bases for writers' depictions of caves or animal bodies is rather backwards. This project reverses these terms, proposing instead that early national writing in many ways adapts and responds to the found shapes and structures of nature; the image of a snake's supposed "infectious" stomach vapor, for example, as a model for the dispersal of dangerously influential stories within the republic.<sup>23</sup> While literary studies have posited systems and collections of early national natural history as "narratives, as stories told about things," this project explores the unexpected and unconventional ways stories form *within* things.<sup>24</sup> This interiorized thinking, proceeding not linearly from point to point but internally, elliptically, and a-rationally, can be seen in the tracings of the embodied eye, the infectious fascination of American writers and readers, the multi-branched skeletal frame of the mammoth and its "framed" history of submerged monuments and chronologically displaced and displacing discoverers, or the hyper-linear narrative threads of sub-geographies and chronologies.

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heading of "new materialisms," which seek to analyze the "ways in which nature, the environment, and the material world signify, act upon, or otherwise affect human bodies, knowledge's, and practices." For prominent examples, see Bruno Latour, *We Have Never Been Modern*, (Cambridge: Harvard University Press, 1993) and *Politics of Nature* (Cambridge: Harvard University Press, 2004); Lawrence Buell, *Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge: Harvard University Press, 1995).

<sup>23</sup> My approach is similar to several recent studies on Euro-American writings that argue that certain spatialities, insufficiently acknowledged by the dominant interpretive frameworks of their respective scholarly fields, generate representational and literary formats: Michelle Burnham, for example, argues that early English and New England literature of travel and trade, and the economic networks of investment and (delayed) return from which it emerged, were instrumental in "inaugurating a new geometry of selfhood and human relations that created, not only a kind of folded space and time, but also folded selves" stretching across "the curvature of circumatlantic space (and time)," *Folded Selves: Colonial New England Writing in the World System*. (Lebanon, New Hampshire: University Press of New England, 2007), 18. See also Stephanie Lemenager, *Manifest and Other Destinies Territorial Fictions of the Nineteenth-Century United States* (University of Nebraska Press, 2008), 3.

<sup>24</sup> Christopher Irmscher, *The Poetics of Natural History: John Bartram to William James*, (Rutgers University Press, 1999), xxiv.

Indeed, the ways in which these natural interiors shaped Americans' multi-directional perceptions and their at times chaotic texts allows for- indeed encourages – a remarkable sensitivity to natural processes which has not been previously investigated or theorized. Scholars tend to locate the development of cultural and scientific interest in later intellectual movements – the nineteenth-century scientific disciplines of comparative anatomy, physiology, and geology, emerging alongside and in conversation with European Romanticism. However, I argue that these early national works, which record and respond to organic and semi-internalized processes such as generation, decay, and contagion, reveal an awareness of dynamic aspects of the natural world beyond the supposedly static fields and objects of natural history.<sup>25</sup>

This mode of responsive, processural thinking and writing also emerges prior to and largely (though perhaps, with Bartram's noted influence on English Romantic writers, not entirely) separately from the Transcendentalist tradition in American nature writing in the mid-nineteenth-century. American literary studies often posits Ralph Waldo Emerson, Henry David Thoreau, and their circle as "a group of New England Unitarians...dissatisfied with the cold rationalism and mechanical philosophy of the Enlightenment" using Coleridge's version of German Romantic philosophy to forge an emotional and almost mystical, rather than functional, connection to nature – "an occult relation between man and the vegetable," in the words of Emerson.<sup>26</sup> Accounts of the

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<sup>25</sup> *Romanticism and the Sciences*, edited by Andrew Cunningham and Nicholas Jardine, (Cambridge University Press: 1990): 1-4; L.S. Jacyna, "Romantic thought and the origins of cell theory," 161-169, *ibid.* Sue Ann Prince, *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730-1860*. Ed. Sue Ann Prince. Philadelphia, The American Philosophical Society, 2003), 2. Ernst Mayr, *The Growth of Biological Thought*, (Harvard University Press, 1982), 182-4, 188. William Coleman, *Biology in the Nineteenth Century* (Cambridge: Cambridge University Press, 1977).

<sup>26</sup> Alexander Kern, "Coleridge and American Romanticism: The Transcendentalists and Poe," in *New Approaches to Coleridge*, ed. Donald Sultana, (London: Vision Press, 1981). For more on Coleridge and Wordsworth as Emerson's avenue to Germano-Romantic Idealism, see Patrick Keane, *Emerson*,

development of Emerson's thinking often point to his 1833 visit to the Muséum National d'Histoire Naturelle in Paris, where he observed Cuvier's comparative anatomical displays of "the normally hidden interiors of animals": skeletons and preserved organs which he enthusiastically described to a Massachusetts Lyceum audience upon his return to the United States. But whereas Lee Rust Brown argues that these compelling specimens were springboards into transcendent visions of the wholeness of nature for Emerson, the earlier American specimens of this project resist such integration, retaining even (or especially) under examination their particular contradictions and complexities – that is to say, their own interiors.<sup>27</sup>

The first two chapters discuss the bodily interiors of human and animal forms that both invite and defy examination, challenging the epistemological category of self-evidence in early national thinking: what can a body contain within itself, and how does it interface with the external world? The first chapter examines early U.S. depictions and investigations of the eye. While this organ is often considered the illuminating and controlling tool of Enlightenment science, in these texts it appears as a murky, materially capacious and absorptive object, both as an organ of perception and as an object of inquiry in itself. I argue the secretive inside of the eye complicates its status as *the* rational sensory instrument of late-eighteenth-century discourses of perception. Pregnant by foreign pathologies, the eye appears as vestige of the humoral body, interacting with

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*Romanticism, and Intuitive Reason: The Transatlantic "Light of All Our Day"* (Columbia: University of Missouri Press, 2005) and Leon Chai, *The Romantic Foundations of the American Renaissance*, (Ithaca: Cornell University Press, 1987), 141-155.

<sup>27</sup> Ralph Waldo Emerson, *Nature* (1836), in *The Norton Anthology of American Literature*, edited by Nina Baym, Robert S. Levine, and Arnold Krupat (New York: W.W. Norton & Co., 2007): 1112-1113. Samantha C. Harvey, *Transatlantic Transcendentalism: Coleridge, Emerson, and Nature*. (Edinburgh University Press, 2013): 12-14. On comparative anatomy's exposure of the "microcosmic structure of the specimen," and Cuvier's influence on Emerson, see Lee Rust Brown. *The Emerson Museum: Practical Romanticism and the Pursuit of the Whole*, (Cambridge: Harvard University Press, 1997), 59-168.

its environment and even seeming to incorporate within itself such modern instrumentalities as telescopic sight. Indeed, in these accounts, the eye is characterized as “naked” not only to distinguish its unaided vision, but also to emphasize its exposure and permeability as a body. As an embodied site of encounter between the external world and the particular observer, the eye does not simply receive fixed facts or images – but produces them responsively and individually: the kind of active and contingent witnessing in which Crèvecoeur participated at the ant town. This model of perception posits a kind of narrative seeing, or “tracing,” over time and space: a cognitive process that, in the words of one naturalist, “catches nature in the fact” and in the text.

The second chapter brings together three examinations of the mouths and stomachs of American animals, published together by the American Philosophical Society in Philadelphia at the end of the eighteenth century, in which writers struggle to delineate the physical and ontological borders between individuals, both as discrete bodies and as distinct creators and recipients of natural knowledge. Although the mouths of new world creatures had been depicted with varying degrees of accuracy and anxiety for centuries by Anglo-American observers of nature, these accounts substantially revise older concerns about America’s voracious consumption of others (or cannibalistically, of itself) into paradoxes of identity. These mouth-stomach zones, connecting the internal body and the outside world, open and obscure the boundaries of the body and the self. One species is found to “inhabit” the mouth of a totally different species, but the two seem so joined that they cannot live – or be named and known – separately. A snake appears to protectively “swallow” its young then release them unharmed; other snakes supposedly release an invisible, infectious stomach vapor, “possessing” their prey with



the desire to run into the snakes' open jaws. These indeterminate interiors – amorphous “gulphs” in which the limits of the individual are ambiguous – are not easily categorized within the supposedly immutable “laws of nature”: neither viviparous reproduction, nor digestive consumption, these strange phenomena raise questions about how a body carries its identity within itself. While they undermine older models of what natural histories can “contain,” they also offer new and compelling ways to describe an individual's “possession” of another – both in terms of proto-ecological relationships among animals, and in the context of the early republic's communities and networks of “national” knowledge.

The final two chapters examine early U.S. investigations of subterranean cavities, spaces that necessitate alternative rhetorical and epistemological modes in conceiving of and describing the shape of the new nation. The third chapter looks at early national attempts to recover the ancient buried bones. These mysterious artifacts, discovered in underground caves, ditches, and marshes across the trans-Appalachian region, received much attention from naturalists on both sides of the Atlantic. The American Philosophical Society's “Bone Committee” requested aid in locating an “entire” skeleton of the mammoth – what Jefferson described to Charles Willson Peale as a “great animal monument.”<sup>28</sup> Indeed, Peale's 1801 “exhumation of the mastodon” from the swampy morasses of the Hudson River valley and subsequent exhibition in his Philadelphia museum is well-known within American studies, particularly for its claims about the republic's “monumental” nature; as Chaplin writes, U.S. naturalists “finally found

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<sup>28</sup> “Circular Letter,” *Transactions of the American Philosophical Society* 4 (1799), xxxvii. Jefferson to Peale, July 29, 1801, Washington D.C., *SPCWP*, II, 349.

antique foundations for their nation” in the enormous fossils.<sup>29</sup> Yet *monument* at the end of the eighteenth century held multiple meanings: the word could signify both a grand memorial and any object that evoked the past, even a fragmentary and insignificant one. Furthermore, the subterranean monuments unearthed by Americans seemed to be almost universally of the latter category: whether they were dug out of the ground by uneducated laborers or the elite “friends of science,” the fragile and often decayed bones tended to break or disintegrate upon contact. In the context of this profound subsurface disorder, in which empiricist observation failed to secure reliable information about these “ruined” objects – or even the objects themselves, these texts ask what constitutes historical evidence or proof, and how these proofs – removed or ‘exhumed’ from their internal contexts of the body or the earth – authenticate or form the basis of a coherent American history.

The final chapter considers depictions of caverns in the early republic, including Charles Brockden Brown’s 1799 *Edgar Huntly*. In these texts, “penetration” as a model for discovery – a model frequently, if futilely, cited by Edgar – goes awry. This early national speleological discourse, comprised of disjointed subterranean geographies and chronologies, differs markedly from stories made along the surface: people, specimens, and “facts” appear or “erupt” out of proper time and place. Descriptions of caverns in state and local histories left early republican readers lost, unable to reproduce the author’s course in either their physical travels or their imaginations. Surprising accounts of exotic subterranean metrics of time, so off-scale and out of alignment with surface’s frames of reference – for example, living animals buried under feet of earth for hundreds of years,

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<sup>29</sup>Chaplin, “Nature and Nation,” 90.

or unstable strata exploding through the earth's crust – seemed to suggest or necessitate alternative natural histories to accommodate them. While the “place”-making apparatuses of early national settlement and expansion fracture when brought to bear on subjects “incompatible with order and coherence,” as Edgar writes, these accounts offer possibilities for alternative conceptions of national space, recording experiences that cannot be registered in surface plots or “plats.” Indeed, Edgar's own fractured, multiplicitous identities seem contained only within the twisting intricacies of Norwalk's subterranean caverns, in which he imagines himself still immured at the novel's bleak conclusion.

## CHAPTER I

### Catching 'Nature in the Fact': The Eye in Early Republican Natural History

In Philadelphia in the spring of 1782, readers of the *Pennsylvania Packet* learned that there was something unusual “To Be SEEN” in the heart of the city. For “Half a Dollar each person,” one could witness “A SMALL living SNAKE in a Horses Eye.” According to the report, the serpentine interloper had “made its appearance about two months ago,” and “when first discovered, the whole might be seen very distinctly, forming itself into two and a half diameters of the circle contained within the white of the eye.” Now the property of “a free Negro, in Arch-street” near the Leopard tavern, the “brisk and vigorous” snake wriggles and “moves about with great rapidity, as if attempting to make its escape” from the eye of the horse. Indeed, the *Packet* urged, “as it is uncertain how long it may remain alive or visible, the curious are invited to take a speedy view of it.”<sup>30</sup>

In the weeks that followed, at least two members of the American Philosophical Society of Philadelphia visited the horse on Arch Street and later relayed their experiences to the Society. Both men assured their audience of their initial skepticism: Francis Hopkinson, a jurist and signer of the Declaration of Independence, had at first dismissed the report, but after several acquaintances went to see the horse and confirmed the story, decided to go himself. Even then, he maintained he was “expecting to detect a

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<sup>30</sup> “To Be SEEN,” *Pennsylvania Packet*, May 23, 1782.

fraud or vulgar prejudice,” and thus skeptically “examined the eye with all the attention in my power.” John Morgan, a physician who had co-founded the first medical school in British America, likewise insisted that he was “little credulous or liable to impositions, from accounts of pretended miraculous appearances.” But because the “exact attention to the phaenomena of nature” was, as Morgan wrote, “the first step to new discoveries,” he dutifully observed the horse’s eye with “the closest ocular examination, with unwearied attention, repeated more than once.” To each man’s surprise, these careful inspections proved the fantastic reports to be accurate, convincing both “that there was a living, self-moving worm within the ball of the horse’s eye, free from all deception and mistake.”<sup>31</sup>

Despite their careful examinations, however, both writers indicate that visually observing this “singular phaenomenon” was a complicated enterprise, particularly because their object of inquiry was so physically internalized. The horse generally kept its irritated eye closed, Morgan reported:

To get a view of the eye, the keeper commonly strikes the horse on its back with an open hand, at which, as if frightened, it opens the lid... which continues disclosed but a short time; however this gives an opportunity for inspection for five or six seconds of time together, and the blows must be repeated to keep the eye open, when a person wishes to have a longer time for inspection.<sup>32</sup>

Hopkinson complained that watching for these “favourable moments for a distinct view of his tormentor” was mostly unsatisfying because the eye’s “humours were confounded together, and that the worm had the whole orb to range in.” Indeed, in its retreats and advances through the depths of the organ, the worm seemed to waver between being a seeable, material fact and an imperceptible phantom: “The creature was in a constant

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<sup>31</sup> Francis Hopkinson, “Account of a Worm in a Horse’s Eye,” *Transactions of the American Philosophical Society* 2 (1786): 184. John Morgan, “Of a Living Snake in a Living Horse’s Eye, and Other Unusual Productions of Animals,” *Transactions of the American Philosophical Society* 2 (1786): 386.

<sup>32</sup> Hopkinson, “Account of a Worm,” 184. Morgan, “Of a Living Snake,” 388, 385.

lively vermicular motion; sometimes retiring so deep in the eye as to become totally invisible, and at other times approaching so near to the iris as to become plainly and distinctly seen,” Hopkinson related. Despite or indeed because of these epistemological difficulties, however, these strained and complex “ocular examinations” offer a way into reading Americans’ representations of the eye in this period, which, like Morgan’s and Hopkinson’s accounts, often focus on the organ’s murky interior – a space which complicate the eye’s status as *the* rational sensory instrument of late eighteenth-century discourses of perception. How did this enigmatic, a-rational ball of the eye work to create knowledge in the early republic, in which empirical perception was frequently promoted as an essential component of citizenship?

Indeed, vision and visuality in particular were at the center of discourses of epistemology during the seventeenth and eighteenth century. Sight held “an almost exclusive privilege, being the sense by which we perceive extent and establish proof,” as Michel Foucault writes, in an age bent on classifying the visible world; as scholars have widely (and more recently) noted, the story of Enlightenment science is supposedly one of “the triumph of the eye over the nose (along with all other sensory organs),” as Holly Dugan writes.<sup>33</sup> While seventeenth-century philosophers Francis Bacon and René Descartes differed in their faith in the seen object, both thinkers emphasized the eye’s perceptive control. Bacon declared that “all depends on keeping the eye steadily fixed upon the facts of nature and so receiving their images simply as they are”; Descartes considered the eye “the first and best instrument for the acquisition of empirical knowledge,” a tool projecting unilateral control and organizing coordinates over a visual

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<sup>33</sup> Holly Dugan, *The Ephemeral History of Perfume: Scent and Sense in Early Modern England*, (Baltimore, Johns Hopkins University Press, 2011), 182.

field.<sup>34</sup> John Locke's *Essay concerning Human Understanding* at the end of the century further distinguished sight's "function and status" within theories of human knowledge, while Thomas Reid's 1764 critique, *An Inquiry into the Human Mind*, was notably influential in revolutionary and early national America.

Lectures in Philadelphia in the 1780s and 1790s expounded Reid's Common Sense philosophy, which posited that knowledge was the accumulation of data from the five senses – particularly the "noblest" sense, sight. Citizens were encouraged to train their eyes to detect deception, whether the source was the State House or the natural world. Meanwhile, naturalists in the American Philosophical Society and further afield generally espoused a "transparent, fact-based method" which, Andrew Lewis argues, theoretically "had the benefit of exposing and eliminating the problems of individual subjectivity," and the texts they created were ostensibly no more or less than records of empirical facts – "visceral, uncorrupted evidence" which "required only that the senses had not been corrupted to compel belief."<sup>35</sup>

In the texts discussed in this chapter, however, the eyes of Americans do not seem to participate in a shared, "common sense" – indeed, their perceptions are "visceral" primarily in the sense of belonging to internal, enclosed bodily space. Both as an object of inquiry and, significantly, as an organ of perception, the eye appears as an "orb" which

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<sup>34</sup>Francis Bacon, *Great Instauration* (1620), qtd. in Michael Gaudio, "Surface and Depth: The Art of Early American Natural History," in *Stuffing Birds*, 55. A demonstration of the eye's instrumentality in Descartes' 1637 *La dioptrique* involved cutting off the back of the eyeball from of a recently dead body – human or animal – and holding an object before its pupil, resulting in an inverted image of the object projected from the back of the eye; Frances Terpak, *Devices of Wonder: From the World in a Box to Images on a Screen*, (Los Angeles: The Getty Research Institute, 2001), 143.

<sup>35</sup> Bellion, *Citizen Spectator*, 4, 5, 8-10, 27-30. Michael Gaudio, "Swallowing the Evidence: Bartram and the Limits of the Enlightenment." *Winterthur Portfolio* 36, no. 1 (Spring 2001): 2-3, 7-8. Andrew Lewis, *A Democracy of Facts: Natural History in the Early Republic* (Philadelphia: University of Pennsylvania Press, 2011), 15-17, 34. See also Fliegelman, *Declaring Independence: Jefferson, Natural Language, & the Culture of Performance*, (Stanford University Press: 1993), 45; and Looby, "The Constitution of Nature," 252-272.

absorbs or is permeated by substance and information in flux: moving bodies which “range in” it, elemental liquids, components of optics – not facts or images “simply as they are.” Writers portray the eye as an embodied site of encounter between the external world and the particular observer. In some cases, the eye even performs as a vestige of the disappearing humoral body; it not only contains cloudy “humours” but also interacts with and is constituted by its environment.

Aligned with the depths and dimensions of the eye’s materially capacious interior, this absorptive sense of vision is experienced and described as a kind of narrative process: seeing through space and over time. Visitors to the horse on Arch Street, for example, wrote of witnessing a fact in progress; they had “to trace” the linear body of the worm unspooling like “a piece of common twine” through the horse’s eye, tracking with their own eyes an object which did not present itself visibly all at once. Indeed, rather than being readily evident to all, many of the visual phenomena which early national Americans described to each other are ephemeral and contingent on the individual observing eye – as one naturalist put it, the witnessing, tracing eye had to “catch nature in the fact.” Far from a possessing or dominating “capture” of the natural world, this model of perception posits a responsive, following object, pervaded by external stimuli.<sup>36</sup>

This *tracing*, a cognitive process which links seeing and writing as practices of knowledge-making, produces texts or “histories” fundamentally at odds with representations of “self-evidence” on which the young republic was founded. Ideally, the

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<sup>36</sup> Elisa New offers a related observation in *The Line’s Eye: Poetic Experience, American Sight*, (Cambridge: Harvard University Press: 1998), arguing that representations of American vision are not always inherently possessive, but often reveal “a more intimate and reciprocal relation to American resources.” New identifies this vein of responsiveness, however, as poetic feature, juxtaposing instances “perceptual” lyricism with “conceptual” narrative; 9.



object (or person) presents itself truly and consistently to every eye, by which its identity is, as Fliegelman puts it, “externalize[d]” as a “visual rather than an intuitive phenomenon.” The absence or failure of this complete externalization was cast as visual deception and indeed a “crisis of representation,” Bellion suggests.<sup>37</sup> The eye’s interiority, however, significantly alters this formulation. The traced history is a both an intervention in and, to some degree, an invention of what is observed: an “ocular demonstration of the fact,” to borrow Morgan’s phrase, which not only offered a way to describe nature beyond what might be momentarily described, but constituted the fact in itself. This chapter examines how the embodied eye shaped these visceral visual narratives and informed the making of knowledge in the early nation.

### The Naked Eye

At the end of the eighteenth century, Philadelphians in scientific circles frequently described observing nature with the “naked eye.” The expression, which first appeared in English texts in the late seventeenth century alongside the development and commercialization of lens technologies, distinguished sight through optical instruments from unaided vision, much in the way of its modern usage.<sup>38</sup> A botanist writing to the APS in 1790 described certain plant parts as “conspicuous to the naked eye,” while astronomer and mathematician David Rittenhouse reported several comets that were more or less “visible to the naked eye” in the 1780s and 1790s. Joseph Priestley, residing

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<sup>37</sup> Fliegelman, *Declaring Independence*, 2, 52. Bellion, *Citizen Spectator*, 77-78.

<sup>38</sup> The *Oxford English Dictionary* dates “naked eye” in English texts to 1664. Antonie van Leeuwenhoek earlier employed the phrase in Dutch: “bloote oogen,” which might also be translated as the “bare eye”; Barbara Maria Stafford and Frances Terpak, *Devices of Wonder*, 205-14.

in Pennsylvania the last years of his life, expressed exasperation that a “microscopic vegetable,” which had appeared in his experimental equipment and had “enlarged in so short a time as to become visible to the naked eye,” had led some to erroneously believe that the plants came into existence without “organized” predecessors.<sup>39</sup>

While these writers used and understood the idiom to signify seeing without the help of external instruments, Americans also used the phrase “naked eye” in another sense: to implicate the organ’s exposure as a corporeal object in itself. Philadelphia physician John Redman Coxe, in a letter to the APS, described an experiment he conducted in which “several drops” of an “aqueous solution” composed of “lettuce opium” and rain water were “dropped upon the naked eye” of a frog.<sup>40</sup> It seems unlikely in this case that Coxe intended to highlight the frog’s unaided sight. Rather, by positioning the eye both syntactically and conceptually as an object to which things might be done to, or “dropped upon,” Coxe emphasizes the organ’s vulnerability – not only to the experimental solution (which produced “some degree of pain” and “a slight inflammation for some hours” in the Coxe’s own eye, when he tried it upon himself) but to any external substance which might interact with it.

In fact, a variety of texts registered the eye’s susceptibility to its environment in the early U.S. Popular medical manuals such as William Buchan’s *Domestic Medicine*

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<sup>39</sup> James Greenway, “An Account of the Beneficial Effects of the Cassia Chamaecrista,” *Transactions of the American Philosophical Society*, 3 (Philadelphia, 1793), 234-239. David Rittenhouse, “Observations on a Comet Lately Discovered,” *Transactions of the American Philosophical Society* 2 (1786), 195. Joseph Priestley, “Observations and Experiments Relating to Equivocal, or Spontaneous, Generation,” Nov 18, 1803, *Transactions of the American Philosophical Society* 6 (1809), 119. Erasmus Darwin was a prominent believer in “spontaneous generation,” and cited Priestley’s “green matter” in his *Temple of Nature*, published posthumously in 1803, to Priestley’s frustration.

<sup>40</sup> John Redman Coxe, “An Inquiry into the Comparative Effects of the Opium Officinarum, Extracted from the Papaver Somniferum or White Poppy of Linnæus; And of That Procured from the Lactuca Sativa, or Common Cultivated Lettuce of the Same Author,” *Transactions of the American Philosophical Society* 4 (1799): 401.

insisted that “no organ of the body is subject to more diseases than the eye.” Some of these ocular maladies were dramatic and conspicuous; the eyes of sufferers of yellow fever which plagued Philadelphia in the 1790s “seldom escaped a yellow tinge,” physician Benjamin Rush wrote.<sup>41</sup> But threats to the eye were also more mundane: the eye could be “hurt by viewing bright or luminous objects,” or “excessive venery,” or “the long use of bitters,” Buchan wrote. Just as often, eyes were injured by imbalances of the body itself; as Buchan noted, “the eyes are often hurt by the stoppage of customary evacuations; as morning sweats, sweating of the feet; the menses in women.” The manual recommended a “cool regimen” to combat inflammation of eyes, or, even better, one should strive to “keep the body gently open, and either to bleed or purge every spring or fall” to prevent such disorders.<sup>42</sup>

These diagnoses and treatments appear to have been lifted directly from European humoral theories of previous centuries, in which, as Gail Kern Paster writes, “every subject grew up with a common understanding of his or her body as a semipermeable, irrigated container in which humours moved sluggishly.”<sup>43</sup> This “state of internal solubility” was maintained through expulsions or evacuations of the various bodily fluids. In its equilibrating liquidity and its sensitivity to the temperature and conditions of the

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<sup>41</sup> Benjamin Rush, “An account of the bilious remitting yellow fever, as it appeared in the city of Philadelphia, in the year 1793,” (Philadelphia, 1794), 70. See also Bellion, *Citizen Spectator*, 10.

<sup>42</sup> William Buchan, *Domestic Medicine: or, a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, (Dublin, 1784), 364-367. Buchan’s manual and others like it were circulated and reprinted in the early U.S. and overlaid “traditional humoral understandings with the physiology of the nervous system”; Sarah Knott, “The Patient’s Case: Empiricism and Knowledge in the Early American Republic,” *The William and Mary Quarterly* 67, no.4 (2010): 650.

<sup>43</sup> Gail Kern Paster, *The Body Embarrassed: Drama and the Disciplines of Shame in Early Modern England* (Ithaca: Cornell University Press, 1993), 6-8. Historians of the early modern period note the persistence of humoral theories through seventeenth centuries, even in the face of paradigmatic shifts to increasing iterations of disease as infiltrating organisms; Jonathan Gil Harris, *Foreign Bodies and the Body Politic: Discourses of Social Pathology in Early Modern England*, (Cambridge: Cambridge University Press, 1998), 25-26, 142. Elizabeth Maddock Dillon, *The Gender of Freedom: Fictions of Liberalism and the Literary Public Sphere*, (Stanford: Stanford University Press, 2004), 102. Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World*, 78-82.

outside world, the eye stands in for or indeed re-incarnates the humoral body. In fact, physicians in the late eighteenth-century like Buchan, Rush, and Morgan typically described the eye as composed of “humours.” These liquid elements of the eye were not the same as the blood, phlegm, and yellow and black bile of classical or early modern humoral theory, though Rush did attribute the disconcerting jaundice seen in the eyes of yellow fever patients to “an absorption and mixture of bile with the blood.” Instead, the eye’s humors had their own designations: Morgan, for example, listed the “aqueous and vitreous humours of the eye” in his treatise “Of a Living Snake,” while Buchan identified a cataract as an “opacity of the chrySTALLINE humour.” I suggest that the humoral eye in these contexts represents not only a mingling of earlier discourses of the body’s composition with more contemporary methodologies, but also offers a powerful interpretive model for how the eye operated. While Rush knew that a person did not need to be “taught the names of the humours of the eye...in order to learn to see,” this humoral conception of the eye is nevertheless implicit in early national ways of seeing: perceiving not only external evidence, but also the sensing of fluid, internal dynamics.<sup>44</sup>

Consider Morgan’s and Hopkinson’s documentations of the progressive clouding of the horse’s eye in their reports. When the horse’s original owner had first noticed something was wrong with the animal, “the eye still retained its transparency enough to admit seeing the whole of the snake distinctly.”<sup>45</sup> At the time of his examination, however, Morgan noted that the “the milky appearance has for some weeks grown

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<sup>44</sup> Rush, “An account of the bilious remitting yellow fever, as it appeared in the city of Philadelphia, in the year 1793,” (Philadelphia, 1794), 70; “Observations upon the study of Latin and Greek languages, as a branch of liberal Education, with hints of a plan of liberal Instruction, without them, accommodated to the present state of society, manners, and government in the United States,” 54. Buchan, *Domestic Medicine*, 366.

<sup>45</sup>Morgan, “Of a Living Snake,” 386-387.

gradually more opaque,” and to Hopkinson “it appeared as if all the humours were confounded together,” and these were “beginning to grow opake like a chilled jelly.” This ever-increasing murkiness – both material and epistemological – prompted both writers to qualify their accounts as provisional and imprecise; estimates of the worm’s length were given only “as nearly as can be determined through the intervening medium,” as Morgan wrote. The opacity of the eye, however, is not merely an impediment but a point of interest in itself, which Morgan registers in multiple ways. As a consulting physician, he offers the anatomical prognosis that “the disease occasioned by the presence of an extraneous body, or unnatural animal irritating the organ, will gradually produce too great an obscurity to afford that satisfaction in viewing it.” As an immediate observer of the phenomenon, however, he takes a more colloquial tone: “I cannot think a snake of the same size moving briskly in a tumbler-ful of fair water, or of water discoloured with a tea-spoonful of milk, would be more visible.” Both iterations speak to the materiality of the eye, but the latter analogy of a vessel filled with liquid – one which might equally suit the humoral body – seems to offer a more evocative, descriptive sense of the phenomenon’s appearance and effect: the incongruousness of the snake’s “presence” in the eye and its surprising “constant serpentine motion.”<sup>46</sup>

An episode from William Bartram’s *Travels Through North & South Carolina, Georgia, East & West Florida*, published in Philadelphia in 1791, provides another variant on the eye’s shifting, humoral substance and sensitivity. *Travels* is known for its author’s rapturous description and meticulous cataloguing of his visual observations of southeastern North America; in one frequently cited passage, Bartram finds the “pellucid waters” of a sinkhole to be “so extremely clear as to be absolutely diaphanous or

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<sup>46</sup> Hopkinson, “Account of a Worm,” 184. Morgan, “Of a Living Snake,” 385, 388.

transparent as the ether.” In striking contrast to the hazy “intervening medium” noted by Morgan and Hopkinson in the Arch Street horse’s eye, here “there seems no medium” at all, but rather a hyper-immediacy of eye and object, or even human eye and animal eye: “you imagine the picture to be within a few inches of your eyes, and that you may without the least difficulty...put your finger upon the crocodile’s eye, when really it is twenty or thirty feet under water,” Bartram marveled.<sup>47</sup>

With the experience of a “severe disorder in my eyes,” however, Bartram extends and darkens this depiction of the tactility apparent in the eye’s perceptions. Having developed a high fever and a painful headache near Mobile in present-day Alabama, Bartram was at first able to continue his trip on the Pearl River, surveying wide panoramas of verdant forests and shoreline “to a great distance back.” He even encountered a French woman who, having lived half a century among the visual wonders of the American southeast, possessed “eyes [which] seemed as brisk and sparkling as youth,” though she was reportedly over a hundred years old. Bartram’s own eyes, however, were faring less well. As in cases presented by Buchan’s manual or Rush’s yellow fever reports, Bartram’s painful “disorder soon settled in my eyes, nature pursuing that way to expel the malady, causing a most painful deluxion of pellucid, corrosive water.” The reappearance here of “pellucid,” one of Bartram’s favorite descriptors for the sparkling rivers and lakes of the southeast, suggests a continuity between the naturalist’s earlier exuberant visual experience and his current malady: in the process of draining and rebalancing the body’s fluids, the eye also discharges the sights – the pellucid, and now “corrosive,” waters – it has taken in. This sensation or impression of ocular absorption

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<sup>47</sup> William Bartram, *Travels and Other Writings*, ed. Thomas P. Slaughter, (Princeton: Princeton University Press, 1976), 192, 211, 150-151.

and expulsion overwhelmed Bartram, who was now “incapable of making any observations, for my eyes could not bear the light, as the least ray admitted seemed as the piercing of a sword...the corroding water, every few minutes, streaming from my eyes, had stripped the skin off my face, in the same manner as scalding water would have done.”

Readers of *Travels* often note recurrent episodes in which wildness and disorder resolve into “peace and tranquility,” and in some respects, Bartram’s account of his illness follows this pattern.<sup>48</sup> Despairing that his “situation was now become dangerous,” the artist “expected to sink under the malady...and my torments were so extreme as to desire it,” but after a treatment of a hot poultice, he at last awakened “intirely relieved from my pain, my senses in perfect harmony and mind composed.” In the midst of this “pleasing delirium” in which his “body seemed but a light shadow,” however, the embodiedness of his eyes, by contrast, is undeniable: “it was several weeks before I could expose my eyes to open day light, and at last I found my left eye considerably injured, which suffered the greatest pain and weight of the disease.”<sup>49</sup> While this incident seems at first to uphold Foucault’s aphoristic observation that “the blind man in the eighteenth century can perfectly well be a geometrician, but he cannot be a naturalist,” it is clear that this naturalist’s eyes are sensing, sensitive entities, even if and when they cannot see. Having likened his own clear sight of objects to touching a “finger upon” them, the palpable impressions in his eyes of settling “weight” and piercing daylight suggest his ordeal further revealed, rather than altered, how his eye perceives.

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<sup>48</sup> See, for example, Looby, “The Constitution of Nature,” 263-264.

<sup>49</sup> Bartram, *Travels*, 339-340.

## The Telescopic Eye

Bartram's account of his ocular ailment may be read as "sentimental empiricism," which Sarah Knott defines as a highly individuated narrative, joining "evidence of the senses with subjective self-observation," but it also participates in a broader cultural defining of the interiorized, material eye in the early United States.<sup>50</sup> Depictions of the organ as an individual and compartmentalized receptacle appeared frequently in scientific publications; not long after Hopkinson had painstakingly observed the worm in the horse's eye, he submitted another "optical problem" to the APS which also seemed to speak to the eye's propensity to integrate or incorporate elements external to it. Sitting at his door on a summer evening, Hopkinson had conducted an impromptu experiment, stretching a silk handkerchief over his eyes and looking towards a street lamp. With his eyes thus swathed, the threads of the cloth appeared magnified, but when he moved the handkerchief back and forth, expecting these "dark bars" to move "before the eye," he was surprised to see "the fact was otherwise," and the lines "remained permanent before the eye." Flummoxed, Hopkinson requested that his friend Rittenhouse try the experiment himself and report back with a "solution based on philosophical principles."<sup>51</sup>

Rittenhouse complied, going so far as to construct his own version of the handkerchief and what would now be termed a diffraction gradient: a "frame of parallel hairs," spaced 190 to an inch, with the aid of a watchmaker. Rittenhouse concluded that Hopkinson's query was "much more curious than one would at first imagine," because "the object we see is not the web of the handkerchief magnified, but something very

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<sup>50</sup>Knott, "The Patient's Case," 650.

<sup>51</sup> Francis Hopkinson and David Rittenhouse, "An Optical Problem, Proposed by Mr. Hopkinson, and Solved by Mr. Rittenhouse," *Transactions of the American Philosophical Society* 2 (1786): 201.



different” – indeed, “an object” produced not only by the threads of the cloth but also by the shape and structure of the eyeball itself and “the wonderful substance, light” which entered it. While physicians like Morgan discussed the eye as a body of “chambers” divided by septa, the mathematician also renders the eye as a bounded space or container in which substantive elements interact to form images. Rittenhouse explained that rays of light from “different points of objects *without* the eye” must “*fall on* the eye” to form images on the retina. Furthermore, when an object is “placed close to the eye...all such rays...will be collected at the bottom of the eye,” where they cannot form “a distinct image.” In this case, the silk threads or hairs caused the diffraction of the rays “before they enter” the eye, creating the image of the non-moving dark bars, “for the point of the retina on which the image shall fall is determined by the incidence of the rays...before they enter” the eye.<sup>52</sup>

The astronomer noted that optical instruments worked by increasing the angles of these rays entering the eye, dramatically expanding its field of vision while also creating some optical irregularities. Rittenhouse had written before, for example, on the apparent inversion of ridges and depressions on the surface of objects when viewed through a pair of convex lenses, such that even an everyday sight like a piece of chocolate or a brick hearth appeared “directly the contrary when it was viewed with the naked eye.”<sup>53</sup> Indeed, the subjective and transformative nature of vision seemed especially apparent with the

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<sup>52</sup> Rittenhouse, *Ibid.*, 202-206, emphasis added. Morgan, “Of a Living Snake,” 388

<sup>53</sup> Rittenhouse, “Explanation of an Optical Deception,” *Transactions of the American Philosophical Society* 2 (1786), 37-42, read March 1780. Brooke Hindle notes that this phenomenon was “later described as cameo-intaglio illusion or the illusion of reversible relief,” Brooke Hindle and Helen M. Hindle, “David Rittenhouse and the Illusion of Reversible Relief,” in *Early American Science*, ed. Brooke Hindle. (New York: Science History Publications, 1976), 145-150.

use of such instruments. Having constructed several telescopes himself, Rittenhouse discovered:

...when viewing the moon through a good telescope, in company with persons not accustomed to such observations, that whilst the cavities and eminences of the moon's surface appeared to me marked out with the utmost certainty by their light and shades, my companions generally conceived it to be a plain surface of various degrees of brightness.<sup>54</sup>

This image of a flat moon, which so conflicted with the astronomer's own perception, was "a matter of surprize to me," Rittenhouse confessed. It seemed that the discrete observations of lunar topography as a "plain surface" or as a three-dimensional, light-reflecting globe depended not solely on the particular light rays collected by the viewer's eye, but were instead a unique, hybrid production of object and observer:

The astronomer knows from the moon's situation with respect to the sun, and even from the figure of its enlightened part, precisely in what direction the light falls on its surface, and therefore judges rightly of its hills and vallies, from their different degrees of light, according to those rules which are imperceptibly formed in the mind, and confirmed by long experience. But a person unacquainted with astronomy knows nothing of the direction of the sun's light on the moon, nor does he attend to the moon's globular figure, and is besides, perhaps, possessed with a notion of its being self-luminous; no wonder then that the same object has a very different effect on his imagination.<sup>55</sup>

Rittenhouse drew upon a recognizably "Common Sense" account of perception to explain this phenomenon, deferring to the influence of a person's sensory experience –

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<sup>54</sup>Rittenhouse built a small transit telescope to observe the transit of Venus in 1769 and had sent to Britain for more grinding glasses for telescope lenses in the early 1780, but the telescope was still relatively uncommon in the early United States, even in cosmopolitan Philadelphia. The demand for complex optical instruments in British America around the time of the Revolution was small – only two formally trained instrument makers, and no trained opticians. A decade later, Thomas Jefferson complained that there were only two "instrument shops" in Philadelphia, and those "very illy furnished, and very dear." In the following decade, at least six more shops opened, though these were primarily importers. Deborah Jean Warner, "Optics in Philadelphia during the Nineteenth Century," *Proceedings of the American Philosophical Society* 76 (1985): 291-99; Bellion, however, points to a "lively transatlantic trade in optical instruments" aimed at entertainment, such as camera obscuras, convex mirrors, magic lanterns among early U.S. shopkeepers, *Citizen Spectator*, 32.

<sup>55</sup>Rittenhouse, "Explanation of an Optical Deception," 38.

“those rules of judging, which we begin to form in our earliest infancy, which we set aside, re-establish, alter, correct and confirm, and at length rely on with the utmost confidence, even without knowing that we do so.” But the self-evidences of the Scottish Enlightenment were supposed to be “intuitively known by a communitarian rather than individualistic or subjective epistemology,” enabling and legitimating a republican citizenry participation in a democracy, as scholars of early US culture have argued. In this case, however, sight – purportedly the noblest sense – had fostered the “utmost certainty” of opposite facts among a “company.” The telescope’s structure – a closed tube with single eyepiece applied almost directly to the eye – reinforces what one art historian deems the “antisocial mode of vision” and the subjective nature of the individually circumscribed and corporeal eye.<sup>56</sup> Benjamin Rush even eulogized the intractable intimacy between the particular observer and instrument after Rittenhouse’s death in 1796 and his burial, at his request, beneath the floor of his observatory. Rush asked his listeners to “repair for a few minutes to that awful spot” in their imaginations: “In entering it, - we behold the telescope, dear instrument of his discoveries, turned upon its axis, and pointed to the earth, which has closed its master’s eyes,” the telescope appearing as permanently closed off from future perceptions as the departed astronomer.<sup>57</sup>

This somatic connection between instrument and eye, I argue, allows for epistemic and perceptual possibilities beyond the relatively limited number of individuals

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<sup>56</sup>Alexander Nemerov, qtd. in Bellion, 42. See Bellion for a reading of the similar experience of the table microscope’s “embodied and intensive gaze” in the early republic, *Citizen Spectator*, 41-43.

<sup>57</sup>Fliegelman, *Declaring Independence*, 45. Benjamin Rush, “An Eulogium, intended to perpetuate the memory of David Rittenhouse, late president of the American Philosophical Society, delivered before the Society in the First Presbyterian Church, in High-Street, Philadelphia, 17<sup>th</sup> Dec. 1796,” (Philadelphia, 1797).

who actually used telescopes in the early U.S. One case from New England – a reported “instance of a *telescopic eye*” – illustrates the intertwining of the awareness of emergent lens technology with conceptions of the eye as a susceptible, collecting object in fascinating and unpredictable ways. Peres Fobes, minister and professor of natural philosophy at Brown University, wrote in 1793 to the American Academy of Arts and Sciences in Boston about a strangely compelling “Curious Phenomenon of Vision.” Fobes was interested in astronomy and had even constructed an orrery to observe planets at the university; “as a lover of science, and especially of optics,” he wrote, he forwarded the account of forty-six year-old “Preserved Pierce, of Somerset” to members of the Academy.

Pierce’s tale has many points in common with Bartram’s experience: the Somerset man “was painfully exercised with a kind of ulcer collected in his head” and was confined to his bed. During his illness, Pierce’s “eye sight was extremely weak and tender, in so much that he could not, without great uneasiness, endure any degree of light.” At last the “supposed ulcer broke” during the night, and in the morning, Pierce “was entirely free from pain, and in a state of sensible ease and comfort; his mind, which before had been greatly depressed and confused, was now quite free and composed.”

However, Pierce’s narrative continues with an astonishing difference from Bartram’s:

On return of the morning, the sun being about an hour high, he arose and went to a south window, through which he looked, and to his great surprise he saw, at a place called Reed’s warehouse, near the ferry, at the distance of near two miles, a cart and yoke of oxen. He could plainly discern the colour of the oxen, the rounds in the cart, the stones on the beach, and even the courses and joints in the shingles on the ware-house.<sup>58</sup>

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<sup>58</sup> Peres Fobes, “A Curious Phenomenon of Vision,” August 21, 1793, *Memoirs of the American Academy of Arts and Sciences*, Vol. 3, 123-24.

Reports of long-distance vision had appeared previously in the early United States. Thomas Jefferson and others had described the phenomenon of “looming,” by which “distant objects appear larger, in opposition to the general law of vision” – and these cases may offer clues not only to the puzzle of Pierce’s “telescopic eye,” but also to contemporary understandings of the phenomenological interaction between the eye and its environment. From Monticello, Jefferson could observe a mountain forty miles to the south, “whose natural shape, as presented to view there, is a regular cone; but, by the effect of looming...it assumes at times the most whimsical shapes, and all these perhaps successively in the same morning.” Although Jefferson discusses this recurrent “metamorphosis” in the query on “Climate” in his *Notes on the State of Virginia*, this was neither a material or environmental change but an ephemeral “phaenomenon” which “begins to show itself” only to an observing eye. Jefferson insists there was “no particular state, either in the weight, moisture, or heat of the atmosphere, necessary to produce this.” In fact, “the only constant circumstances” was that the mountain was only seen to loom in the morning, the same time of day that Pierce experienced his episode of unusual vision, a transformation just as fleeting. Fobes reported that the “extraordinary degree of acute, telescopic vision continued for about one hour”; after the telescopic episode, “his sight returned to its usual state,” except “from that memorable period to the present time he never could see to read or discern small objects without glasses.”<sup>59</sup> Both Fobes’s and Jefferson’s accounts of these “curious” and brief phenomena attest as much to the eye’s

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<sup>59</sup> Thomas Jefferson, *Notes on the State of Virginia*, 80-81. See also Andrew Ellicott and David Rittenhouse, “Extract of a Letter from Andrew Ellicott, to David Rittenhouse, Esq. Dated at Pittsburg, November 5th 1787, Containing Observations Made at Lake-Erie, on That Singular Phenomenon, by Seamen Termed Looming,” *Transactions of the American Philosophical Society*, vol. 3 (Philadelphia, 1793), 62-63. Fobes, “A Curious Phenomenon,” 123-24.

propensity to be substantively altered, integrating both sickness and the far-reaching vision provided by telescopic lenses, as to the unusual incidents themselves.

### The Tracing Eye

In June 1794, an exhibition of a solar microscope opened across from the State House in Philadelphia. This device, set into an upper window of the Half Moon tavern, reflected sunlight through two convex lenses and magnified specimens on a glass plate, offering, at fifty cents, an experience not unlike that of the telescopic eye – in this case, a kind “microscopic” eye, which could observe with “astonishing magnifying powers” the projected images of “mites in cheese increased to an enormous size,” “a louse the size of an ox,” or “the wings of a mosquito...as large as an umbrella on the wall of a darkened room.” Like the horse in Arch Street, the solar microscope was a kind of urban visual spectacle, purposely displayed “in a public part of the city,” as local newspapers advertised, where those who attended were sure to “find themselves equally delighted and improved.”<sup>60</sup>

Art historian Wendy Bellion, in her study of such optical theater and technologies in Federal-era Philadelphia, contends that the public nature of its display made the solar microscope somewhat unique among visual devices. Significantly, the instrument “made nature spectacular in a way neither attempted nor realized by the tabletop microscope,” like those fixed on insect specimens in the nearby Peale museum. With its larger-than-life

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<sup>60</sup> “To the Lovers of the Works of Nature,” *General Advertiser*, June 24, 1794 –July 25, 1794 (Philadelphia); “Solar Microscope,” *General Advertiser*, May 1794. Invented around 1736, the solar microscope first came to Philadelphia only eight years later: “Just Arrived from London...the Solar or Camera Obscura Miscroscope,” *Pa. Gaz.*, Aug. 2, 1744. Bellion, *Citizen Spectator*, 43-44. Stafford and Terpak, *Devices of Wonder*, 215-220.

projections, the solar microscope “possessed the capacity to engender a sense of collectivity within and among audiences present at its shows” – viewing the display was an “inherently social” experience which “implicitly joined disparate groups in a shared phenomenology of viewing.” Furthermore, with its lens set at a distance from the viewer, the solar microscope might be said to have “reordered the corporeal relations of instrument, image, and observer,” at least temporarily. This arrangement “effectively relocated the perceiving eye outside the observer’s body, rendering him a passive recipient of knowledge,” Bellion argues.<sup>61</sup>

I suggest, however, that the solar microscope merely – if spectacularly – rehearses the eye’s already established role in tracing dynamic nature. The observer at the solar microscope exhibition was a recipient, but an *active* one, whose eye was freed from the restrictions of a fixed, immobile focal point of the table microscope but never, in fancy or effect, from his body. As the *General Advertiser* promised, the solar microscope involved the members of the audience – “excited their admiration and engaged their esteem” – as it displayed “the Works of Nature” in motion: “The circulation of blood can be distinctly observed; a number of living animals in a drop of water, moving with amazing velocity, some of them apparently as large as mice. Living animals will likewise be shewn in vinegar, beer, &c the process of fermentation may be seen, producing a very beautiful appearance.” This lively presentation was not one stable image, but required the eye to range and track objects over space and time – two viewers, side by side, almost certainly followed different and irreproducible paths with their respective eyes.<sup>62</sup>

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<sup>61</sup>Bellion, *Citizen Spectator*, 43-45. Over four thousands insects were displayed in Peale’s museum, with “the smaller specimens mounted under microscopes... adjusted for examination,” produced by instrument maker Jotham Fenton; Sellers, *Mr. Peale Museum*, 162.

<sup>62</sup>“To the Lovers of the Works of Nature,” *General Advertiser*, June 24, 1794 –July 25, 1794.

This dynamic way of seeing can be found in other visual investigations described in Philadelphia around the same time. While living in the city, the French botanist Ambroise Palisot, Baron de Beauvois, had used a double microscope to study the pollen capsule of “cryptogamick” mosses – plants whose reproductive organs were “so extremely minute, and so concealed from the eye, that they have hitherto escaped the observation of philosophers,” leading some naturalists to theorize that they were an exception to nature’s laws of generation. In attempting to disprove this unreasonable claim, Beauvois had found the microscope’s magnification less informative than observation with the naked eye. His “very simple and very easy observations, which may be made by others, with the greatest facility” were essentially close and patient surveillance of the plants, enabling him to follow the mosses’ development over time: to see them “in their different states and periods of vegetation,” and to “better discover the moment when the pollen was bursting forth.” In this way, Beauvois declared, “I was a witness” to the mosses’ ongoing development, despite their tiny and cryptic forms, and “I fortunately caught nature, as it were, in the fact, and discovered the use and operation of each of the parts.”<sup>63</sup> This “catch” appears not merely the fortuitous moment of discovery, but the unmediated incorporation of the observed process into the eye of the observer.

Bartram provides another example of this progressive vision in his *Travels*, observing the aptly named “Ephemera,” or mayflies, which hatch and die within the span of a day. Over the course of his journey upriver, Bartram observes the insects

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<sup>63</sup> M. De Beauvois, “First Memoir of Observations on the Plants Denominated Cryptogamick,” *Transactions of the American Philosophical Society*, 3 (Philadelphia, 1793), 204. Beauvois, born and educated in France as a member of the aristocracy, resided at various intervals in Philadelphia between 1791 and 1798, after several years in West Africa and Haiti. He was in Philadelphia at the time of his presentation on “cryptogamick plants” as a representative of the Haitian colonial government to solicit U.S. aid for the French colony; imprisoned and nearly executed by upon his return to Haiti in 1793, Beauvois was deported back to Philadelphia shortly thereafter; E.D. Merrill, “Palisot de Beauvois as an overlooked American botanist,” *Proceedings of the American Philosophical Society*, 76, no. 6 (1936), 899-920.



“continually emerging from the shallow water...some of them immediately taking flight to the land, whilst myriads crept up the grass and herbage,” and by evening, “they are seen in clouds of innumerable millions, swarming and wantoning in the still air.” As the clouds of insects “solemnly and slowly move onward,” this “procession” of sights requires the viewer, and the reader, to process information continuously and multidirectionally: Bartram wonders, “What eye can trace them, in their varied wanton amorous chaces, bounding and fluttering on the odiferous air!” Underscoring the narrative-like progression of the event, Bartram “entreat[s] the reader’s patience, whilst we behold the closing scene of the short-lived Ephemera.” Like the spectators at the solar microscope, these perceptions are individual and not automatically shared – the reader and Bartram, “beholding” together, would have to “communicate to each other the reflections which so singular an exhibition might rationally suggest to an inquisitive mind.”<sup>64</sup>

Like the visual phenomena already discussed – telescopic vision and telescopic eyes, looming, ocular diseases – these observations, like the Ephemera’s momentary and “transient view” of the world, were not collectable in the sense usually associated with eighteenth-century natural history practices. They were each utterly contingent on a particular viewer, who had to look in the right place at the right time – the *General Advertiser* had warned, for example, “the minutiae of nature may be examined with accuracy” with the Half Moon inn’s solar microscope only “from half past ten in the morning till half past four in the afternoon, provided the sun shines clear.” The eye’s tracings inherently lacked universality, in the same way Bartram’s illustrations were critiqued by London correspondents for their tendency to depict specific, rather than

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<sup>64</sup> Bartram, *Travels*, 87.

representative, specimens. Rather than secure or describe a stable and self-evident object, the naturalist was compelled to take a subjective history, limited to his own experience.<sup>65</sup>

The “history” of natural history, as discipline or genre, was interpreted differently by different practitioners throughout the seventeenth and eighteenth centuries. In early national scientific circles, it frequently implied a compilation or review of previous and contemporary writings on the subject in question, and despite these naturalists’ emphasis on primary observation, such histories could provide epistemological ballast to the doubt inherent in basic empiricism.<sup>66</sup> Though Morgan was convinced that he had seen a real snake in the horse’s eye, he admitted the limits of this visual perception: he could observe “the animal, or, to speak like a sceptic, the animal appearance of a snake,” but he could not settle definitively between the two. Similar accounts, or “other inconstestible histories to match it, in the annals of medical history,” offered, in Morgan’s opinion, a way to resolve this dilemma, and for the mere “trouble of turning over the writings of authors of high repute.” He pointed “all who doubt the reality of its being a snake in the eye,” to a “history of the Guinea worm,” an animal that could grow up to several yards within human bodies and which Morgan had seen in a local hospital. He also recommended a decades-old “well known history of a jointed worm bred in the liver of Mrs Holt, in this city,” which had been published by the London society of physicians. One could also

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<sup>65</sup> Bartram, *Travels*, 87. “To the Lovers of the Works of Nature,” *General Advertiser*, June 24, 1794 –July 25, 1794. Gaudio, “Swallowing the Evidence,” 3.

<sup>66</sup> See Foucault on “history becoming natural,” *The Order of Things*, 129-131; Lewis, *Democracy of Facts*, 6-7; Brian Ogilvie, *The Science of Describing: Natural History in Renaissance Europe* (Chicago: University of Chicago Press, 2006), 3-5.

consult a “history and engraving of one exactly similar, as large as life,” in Edinburgh medial essays.<sup>67</sup>

For the snake on Arch Street, Morgan wanted to “deliver what I have been able to collect of its history,” although this information was markedly limited. Both Hopkinson and Morgan expressed a desire to dissect the horse’s eye “for better examination,” but despite their efforts, including canvassing the scientific “gentlemen” of the city for the horse’s purchase, the animal was not for sale; “perhaps,” Morgan mused, “the owner keeping it for show places too high a value upon it” as a profitable spectacle (for which the two APS members were rather unwittingly providing free advertisement).<sup>68</sup> Thus the worm, enclosed within the depths of the undissected eye, remained “in size and appearance much like a piece of fine bobbin,” but a thread without a distinguishable beginning or end, as Hopkinson wrote – the creature coiled within the sphere could not “extend its full length,” and “neither end [was] perfectly exhibited whilst I viewed it.”

Furthermore, tracing out the worm’s “curious history” was rather like tracing the elusive strand of its body, “its whole length never appearing at one time” – leaving the question of “how this worm got there, or if bred in so remarkable a place, where its parents came from” unresolved.<sup>69</sup> Morgan was of the “orthodox” opinion, shared by Beauvois and Priestley, that living things could not appear spontaneously or without progenitors, but he was well aware different animals have been found “to exist in the bodies of other animals, and in extraordinary places, which neither the discoverers of those animals, nor others have been able to *trace, with clearness and certainty*...a

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<sup>67</sup> Morgan actually observed the worm from the Philadelphian “Mrs. Holt” in London, “ten years after preserved in spirit, in the anatomical cabinet of the celebrated Dr. William Hunter,” “Of a Living Snake,” 388-389.

<sup>68</sup> Hopkinson, 184-185. Morgan, “Of a Living Snake,” 389.

<sup>69</sup> Morgan, “Of a Living Snake,” 388. Hopkinson, “Account of a Worm,” 183-84.

probable or satisfactory origin.” Certainly, the snake in the horse’s eye had not followed a self-evident path or physical course into the body of its host; but the fact that the “passages” or avenues whereby “animals or their eggs were insinuated into the interior parts of the body” remained mysterious only increased, rather than dispelled, the sense of the body’s essential permeability.<sup>70</sup>

It is clear that while Morgan and Hopkinson considered their histories incomplete and missing some causal links in what Priestley called a “regular connexion, which we are able to trace,” these texts nevertheless perform an important, even indispensable, epistemological role within early republican natural history. According to both writers, their tracings are literary and cognitive productions of the fact, narratives in which writing and seeing are mutually constitutive. Hopkinson explained at the beginning of his report that he had been moved to preserve, in a sense, the worm in the horse’s eye in his account because the strange occurrence was so fleeting; “having been myself a witness” to this “curious fact, I thought it should not pass unrecorded, especially as it occurred in this city, under the immediate notice of the Philosophical Society.” This transcription into text is integral to the report’s facticity, setting or catching in print the sight that will “pass” away.

Morgan considers the implications of his literary endeavor even further, identifying himself as an author as often as a “Professor of the Theory and Practice of Physic.” Advising his “Fair, gentle, and learned reader” to “start not at this information, as if it were fictitious or the child of fancy,” Morgan is careful to distance his own writing from the specter of fictiveness, declaring that he “has ever strenuously opposed, and thinks he ever shall, what he deems empty tales of visionary speculatists.” In a critique

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<sup>70</sup> Morgan, “Of a Living Snake,” 383-384, emphasis added.

strikingly similar to those inveighed against novels in the early republic, he adds that such interpretive “fictions” are “raised by designing men, to amuse or deceive the vulgar.” In direct opposition to eye-witness observations, these speculative explanations are, in fact, a scourge to vision specifically: a kind of “blindfold” by which some writers tried to “conceal their ignorance of what they could not explain,” while discouraging others from seeing truly. By contrast, “the writer of this piece,” Morgan insists, “has undertaken the present task, on purpose to excite every class of people to satisfy themselves of the reality of the fact,”— indeed, to bring about this factual reality with and for their own eyes: “all have it in their power to determine its existence, on the testimony of their own eyesight,” he concludes.<sup>71</sup> Yet if these ocular determinations should combat the ignorance of individual viewers, as Morgan claims, they also promised multiple and divergent histories, coiling and stretching to unknown ends.

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<sup>71</sup> Morgan, “Of a Living Snake,” 384.

## CHAPTER II

### Lines Which Separate: Mouths, Stomachs, and Texts of Early U.S. Natural History

In the years surrounding the American Revolution, the objects of natural history seemed to many to embody an essential coherence of form, an ideal of stable and individuated identity. American writers and orators were instructed to represent objects in art or discourse “as they are found in Nature,” in which “not one but has its Line of Circumspection, which bounds it and separates it from every other Object.”<sup>72</sup> James Madison, in 1788, compared the proper divisions among federal and state governments to the “boundaries between the great kingdoms of nature.” This moment in the Federalist Papers is often cited as evidence, as Christopher Looby astutely observes, of “a kind of automatic metaphorical exchange between images of natural order and ideas of social political order” in the cultural conversation of early national thinkers and leaders.

It seems important to recognize, however, that Madison’s primary image in this passage is not one of legibility but rather one of misapprehension:

The most sagacious and laborious naturalists have never yet succeeded in tracing with certainty the line which separates the district of vegetable life from the neighboring region of unorganized matter, or which marks the termination of the former and the commencement of the animal empire... When we pass from the works of nature, in which all the delineations are perfectly accurate and appear to be otherwise only from the imperfection of the eye which surveys them, to the institutions of man, in which the obscurity arises as well from the object itself as from the organ by which it is contemplated, we must perceive the necessity of

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<sup>72</sup>John Rice’s *Art of Reading* (1765), consulted by Thomas Jefferson as an early guide to the mechanics of public speaking, qtd. Fliegelman, *Declaring Independence*, 15-16.

moderating still further our expectation and hope from the efforts of human sagacity.<sup>73</sup>

Madison has faith in nature's inherent, ontological identities. Unlike the "faculties of the mind," which "are found to be separated by such delicate shades and minute gradations that their boundaries have eluded the most subtle investigations," the problem with locating nature's divisions, in his opinion, is a matter of perception: a question of how to "to contemplate and discriminate objects, extensive and complicated in their nature."<sup>74</sup>

Yet while Madison attributes naturalists' confusion to the eye – an organ that, as discussed in the previous chapter, might indeed be called "imperfect" in its continually changing internal substance and productions – American naturalists implicitly challenged this conclusion. Their uncertain attempts to trace the lines separating individuals both as discrete bodies and as distinct creators and recipients of natural knowledge indicate a more extensive epistemological problem than human sensory error. Indeed, their struggles betray persistent questions about the "accuracy" of nature's own delineations: the very standard by which American social order was frequently measured.

Between the release of its third volumes of *Transactions* in 1793 and its fourth volume at the end of 1799, the American Philosophical society received over sixty specimens from donors – including, for example, a "Specimen of petrified supposed Buffalo dung," shells collected northwest of the Ohio River, and various "stones" found within the stomachs of domestic animals. During this same span, however, the society was also presented a number of reports that challenged the epistemological primacy of

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<sup>73</sup> James Madison, "Concerning the Difficulties which the Convention must have Experienced in the Formation of a Proper Plan," in *The Federalist Papers*, 241-247. Ed. by Isaac Kramnick. (New York: Penguin Books, 1987), 244. Looby, "The Constitution of Nature:," 253-54.

<sup>74</sup> Madison, "Concerning the Difficulties," 245. For more relating Madison's passage to "political valences of visual perception" in the early national period, see Bellion, *Citizen Spectator*, 15-16.

such objects as a reliable basis for natural knowledge. Examining three of these accounts, which investigate and describe unusual, even extraordinary, properties of stomachs and mouths of American animals, this chapter considers how writers accommodated these bodily interfaces between inside and outside, self and other – the “obscurity,” that is, of “the object itself.” These cavities show that the outer surfaces of the body often do not contain or delimit the individual; rather, like the inside of the eye, the body’s interior is not static, but acts as a remarkable space of both material and ontological plasticity.

The open and menacing mouths of beasts had metonymically registered Anglo-American anxieties about hostile and ravenous new world nature for centuries. These early republican investigations revise these concerns about being consumed by or subsumed within American nature as a paradox of identity and identification: how to classify an organism which lives exclusively within the mouth of another? How to name and number bodies layered inside other bodies? How to observe one creature’s “possession” of another by its invisible, infectious stomach vapor? Methods for the orderly “arrangement of natural bodies,” such as Linnaeus’s system, which impressed and influenced generations of American naturalists, called for a one-to-one correspondence of description to the described: a “fundamental articulation of the visible” which should generate a universally legible description, no matter who describes. But these indeterminate interiors – amorphous “gulphs” in which the “terminating” and “commencing” points of an individual are indecipherable – undermine the idea that the body “carried its identity within” and defy, as Foucault describes, a descriptive “linear unwinding of language.”<sup>75</sup> Rather than defining a discrete specimen, the following texts ask what constitutes evidence of self. If identity dissociates from delineated forms and

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<sup>75</sup> Elizabeth Maddox Dillon, *Gender of Freedom*, 99-101. Foucault, *The Order of Things*, 132.



transgresses outer surfaces, blending with or overtaking other bodies, minds, and texts, where can naturalists “draw the line”? What can natural histories “contain”?

These quandaries uniquely emerge from phenomena not easily categorized or explained within the “laws of nature,” thought to be “always consistent”: mouths that do not eat, stomachs that do not digest, maternal bodies that swallow their young in perverse caricatures of viviparous reproduction.<sup>76</sup> These intriguing structures of interdependency prompted a nascent ecological awareness that points beyond the individual as the primary unit of life/nature. They also, and perhaps more significantly, offer compelling ways to think about an individual “possessed” or “infected” by another within the context of early republican communities and networks of “American” knowledge. Perhaps even more so than images of natural order, these inquiries speak to central questions of identity, autonomy, and “self-sameness” in the early nation, with its new and oft-disputed boundaries.

### A Singular Habitation

Benjamin Henry Latrobe’s report to the APS seems, at first, to fulfill the clearest imperative of natural history: the first-hand “drawing and description” of interesting and perhaps “nondescript,” or undocumented, natural specimens. Latrobe recounts how in the spring of 1797, he had become ill at a friend’s house on the York River in Virginia. While recuperating, unable to “move further than to the shore of the river,” he had the opportunity to “examine carefully, and in more than an hundred instances,” a

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<sup>76</sup> Ambroise Palisot de Beauvois, “Memoir on Amphibia,” *Transactions of the American Philosophical Society*, 4, (1799), 364.

phenomenon which he hoped would interest the Philosophical Society, but one which made the work of description decidedly more complicated: “an insect, whose mode of habitation” *inside* the mouth of an alewife, “has appeared to me one of the most singular, not to say whimsical, that can be conceived.” The alewife fish arrived in the river in “almost incredible” numbers each spring, and “in this season, each of these alewives carries in her mouth an insect, about two inches long, hanging with its back downwards, and firmly holding itself by its 14 legs to the palate.” In fact, “every fish which I saw had the oniscus in his mouth,” Latrobe reported, and he was informed “not only by the more ignorant fishermen, but by a very intelligent man who came down now and then to divert himself with fishing, that, in 40 years observation, he had never seen a bay alewife without the louse.”<sup>77</sup>

The connection between the alewife and “louse” appeared critical to both animals, even if the exact nature of the arrangement was unclear. Not only did the insect live within the mouth of the alewife, it shared (or appropriated) its sustenance too: “whether he have obtained his post, by force, or by favor, whether he be a mere traveler, or a constant resident,” Latrobe wryly noted of the “disgustingly corpulent” creature, “he certainly has a *fat* place of it, and fares sumptuously every day.” Indeed, the fish and its internal “traveler” were so joined that “it is with difficulty that [the insect] can be separated, and perhaps never without injury to the jaws of the fish. The fishermen therefore consider the insect as essential to the life of the fish; for when it is taken out, and the fish is thrown again into the water, he is incapable of swimming, and soon dies.” Latrobe himself tried to detach the pair numerous times, but he too “was always obliged

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<sup>77</sup> Benjamin Henry Latrobe, “A Drawing and Description of the Clupea Tyrannus and Oniscus Praegustator,” *Transactions of the American Philosophical Society*, 5 (Philadelphia, 1802), 77-81.

either to destroy the one, or to injure the other.” Even when he did manage to remove the insect alive, the creature would not stay outside the body of the alewife: “as soon as he was set free from my grasp, he immediately scrambled nimbly back into the mouth of the fish, and resumed his position,” defying a separate examination.<sup>78</sup>

Latrobe’s sketches of the insect and alewife convey both this connectivity and the ambiguity of the boundaries between the animals. The lower half of the plate which he submitted with his account (Figure 1) depicts the body of the alewife: a flat, two-dimensional rendering of the fish’s outer surface, its “outline” neat and uninterrupted.

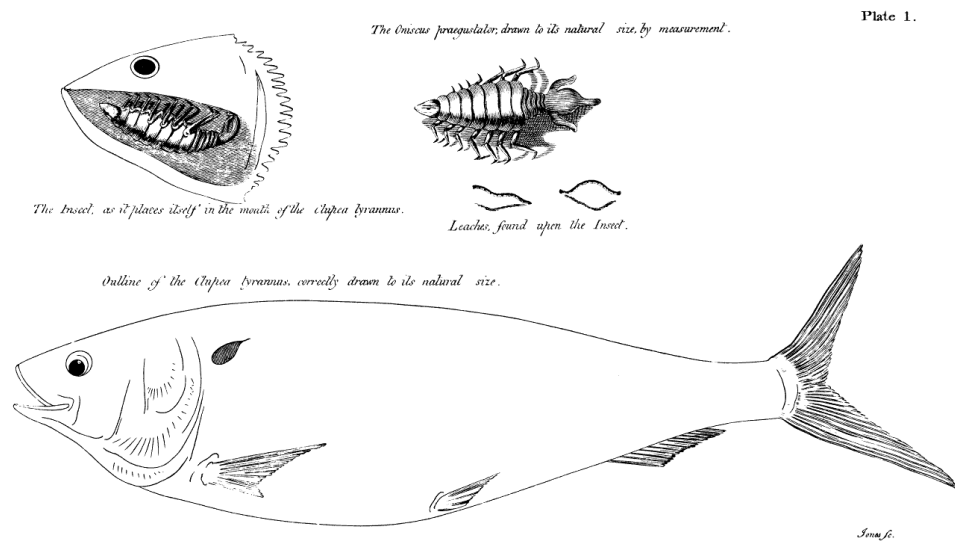


Figure 1. Benjamin Henry Latrobe, “The Oniscus praegustator and the Clupea tyrannus,” 1803, *Transactions of the American Philosophical Society*

The image of the interior of the alewife’s mouth, in the top left corner, presents a decided contrast: the profile of “The Insect, as it places itself in the mouth,” appears against a darkly shaded space, amorously overlapping with the lines of the exterior gills. The cavity’s unbounded edges, as well as a lack of detail in the fish’s mouth and head, suggest that the image is not so much a reproduction of a material cross-section but a

<sup>78</sup> Latrobe, *Ibid.*, 78.

selective visualization, accommodating the uncertainty of lines bounding individuals and bodily compartments. The illustration of the isolated insect, in the top right quadrant of the plate, seems to drag the deep shadow and dimensionality of the mouth-cave across the page (even where these don't quite belong: the silhouette of the insect's jointed legs falls at slightly improbable angles), as if it cannot be properly rendered without its shadowy "mode of habitation."

Latrobe's drawings recall what art historian Michael Gaudio terms the "dark niches" in the images created by William Bartram during his journey through the American southeast in the 1770s – the black recesses of shells, seedpods, sinkholes, and perhaps most frequently, the mouths of animals. These visual absences in Bartram's illustrations, Gaudio argues, figure "the limits of Enlightenment aesthetic" in which Bartram both participates and improvises. In Bartram's *Great Yellow Bream* (Figure 1), for example, the fish's mouth is deeply shaded and even tilted towards the viewer at a slightly unnatural angle, "as if the artist wanted to emphasize the voidlike opening," Gaudio writes. Indeed, the fish's "eminently visible" surface, punctuated by the cavity of its mouth, exemplifies what Gaudio sees as a "tension in Bartram's work between...becoming self-evident on the one hand and being swallowed on the other" as a discerning subject.<sup>79</sup>

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<sup>79</sup>Michael Gaudio, "Swallowing the Evidence: Bartram and the Limits of the Enlightenment." *Winterthur Portfolio*, 36:1 (2001): 1, 4, 8-9. Joseph Ewan, *William Bartram: Botanical and Zoological Drawings*, 69, qtd. Gaudio, 8. Latrobe, "Drawing and Description," 79-81.

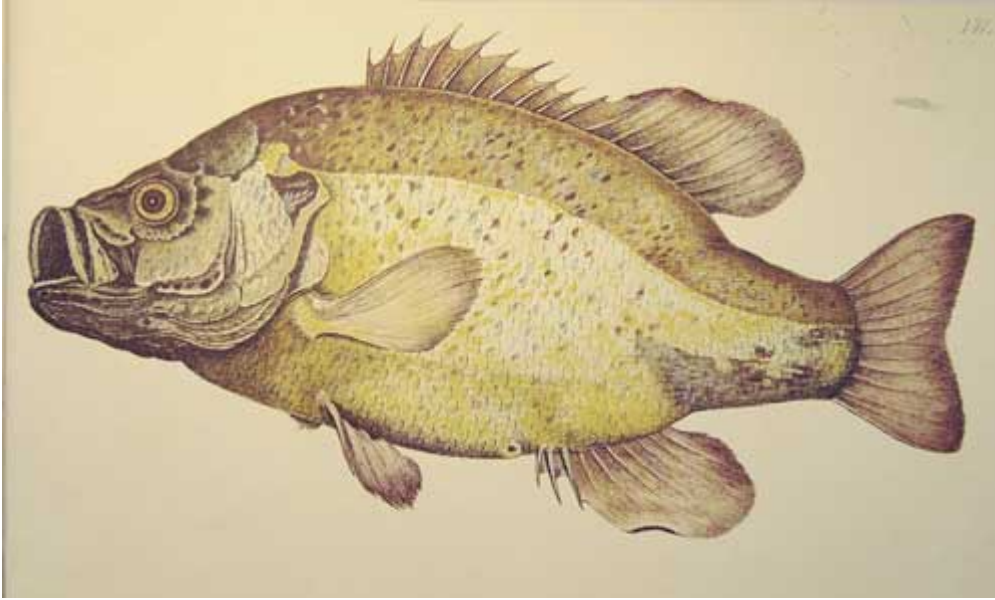


Figure 2 William Bartram, *Great Yellow Bream Call'd Old Wife of St. John's Et. Florida*, 1774, Bartram Collection, Natural History Museum, London

Latrobe's image of the alewife-insect dyad, however, presents an intriguing variation on these voids: a mouth which swallows and does not swallow evidence at the same time, an inhabited absence. If the bream's mouth swallows the self-evidence of nature, as Gaudio suggests, Latrobe's images of the multiple entities within the fish's body (including the handful of wavy lines representing "leaches, found upon the Insect" – mere open-ended parenthetical symbols of creatures "adhering so closely, that their removal cost them their heads") cast doubt on the extent to which an individual's outer surface demarcates or defines a self.

Verbal description of these separate-but-not-separate entities was equally problematic: if the insect was "essential to the life of the fish," as the fishermen believed and his own attempts to disengage the pair suggested, Latrobe wondered what was "essential to the natural history of this insect." Indeed, the textual traces of this history were inconclusive. At the time of his examination and drawings in Virginia, Latrobe had

no other sources to consult, but he was later “surprized to find so exact a description” of the insect in Linnaeus’s *Systema Naturae*, except that this organism lived at sea and apparently without any protector fish. Among other European naturalists, who most likely had copied Linnaeus, none described “the circumstance of habitation in the mouth of the fish.”<sup>80</sup> It was possible, Latrobe considered, that the insect described by Linnaeus was the same species as those which traveled inside the alewife’s mouth up the rivers of Virginia from the ocean, and that the insect, in some circumstances, “is found detached from his conductor.” Even on the American side of the Atlantic, Latrobe admitted, “no one could tell me *positively*” if the pair maintained their bond throughout the summer, because alewives were rarely caught after June.

But without the context of what he considered the insect’s more vital location – “the fish whose mouth he inhabits” – Latrobe remained convinced that the York River louse was “a species not accurately described.” The name he proposed reflected its connection to the fish: “I think he might very aptly be named *oniscus praegustator*,” or “food-taster.” Likewise, for the alewife, which was also “not accurately described in any icythyological work” he could find, Latrobe suggested *clupea tyrannus*, because of the fish’s retainment of a “regular praegustator” like a king, albeit a “tyrant” who could not live without his “minion.” These designators – like the illustrations of the pair and like the title of Latrobe’s account – rely on the index of the other constitutive body.

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<sup>80</sup> Latrobe, “Drawing and Description,” 78-79, 81.

## A Gulph Conceived

The same year that Latrobe observed the alewife-insect dyad, French naturalist Ambroise Palisot de Beauvois brought a similar puzzle of animal bodies within bodies to the attention of the American Philosophical Society, one that also raised questions about the physical configurations of identity. Beauvois had lately returned from an extensive journey – reportedly “2400 or 2500 miles” – through the southern United States, during which he took particular notice of the country’s “serpents” in an attempt to improve “the slight information and inaccurate ideas which we have” about the animals.

The American snake’s body had inspired centuries of Anglo-American and European curiosity, dread, and what Beauvois called the “very dubious” stories about the power or faculty of fascination, which rattlesnakes and other American species of snake supposedly possessed:

It is said that when the serpent wishes to seize a bird, a squirrel, &c., he remains motionless, his eyes constantly fixed upon his prey, and that the unhappy victim, acted upon by a supernatural power, loses all its faculties...it agitates itself, throwing out lamentable cries, goes, returns, advances, retreats, approaches, retires, comes and goes again, till at last exhausted by fatigue, it voluntarily delivers itself up to its enemy, who delays not to devour it.<sup>81</sup>

Snakes’ “source of the influence” over their small prey was often explained by their apparent inspiration of a paralyzing fear, or “impression of terror and alarm,” in their

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<sup>81</sup> Ambroise Palisot de Beauvois, “Memoir on Amphibia,” *Transactions of the American Philosophical Society*, 4, (1799), 363. Fascination has routinely drawn some interest from readers of early American literature; but these earlier studies are mainly concerned with establishing these natural histories writings as literature and identifying these accounts as “products...of the storytelling human imagination”; see, for example, Irmscher, *Poetics of Natural History*, 149-150, 155-185. Herbert Leventhal dates the first published account of the fascinating power of snakes to *The Discoveries of John Lederer*, 1672, though Lederer does not mention “charm” or “fascination” specifically; Leventhal, *In the Shadow of the Enlightenment: Occultism and Renaissance Science in Eighteenth Century America* (New York: New York University Press, 1976), 137-143.

victims – that birds and squirrels were struck “with terror, to such a degree, that...we should be tempted to believe they are from that moment deprived of their senses, and, as it were, attacked with insanity.” Beauvois doubted that this supposed debilitation, so far exaggerated beyond “the ordinary effects of fear,” was ever truly exhibited by birds or squirrels. In fact, an experiment he witnessed at the museum of Charles Willson Peale, who kept a live rattlesnake, suggested quite the opposite: a live bird put into the snake’s cage showed no signs of fear or apprehension – “far from being alarmed, it amused itself with pecking in the bottom and picking up a few grains which it found there,” and even landed on the snake’s back.

Instead, Beauvois suspected a different physically invasive effect – or affect – to be the true root of the phenomenon: snakes, “whose pretended ugliness and danger have been so much exaggerated, *instill into us* a species of repugnance which few have the courage to overcome.” Reports of fascination were really “the produce of that unreflecting horror which these reptiles *infuse into* the greater part of mankind.”<sup>82</sup> These images of permeated bodies suggest a sense of internalized and interchangeable elements: the palpable presence of the snakes’ “influence” *flowing into* a subject’s susceptible, receptive interior, from which “senses” and sanity may be displaced. In much the same way, the power of fascination itself seemed “one of those secret operations which nature seems to envelope in impenetrable mystery,” inaccessibly insulated from rational elucidation.

Beauvois, who had previously revealed the “cryptic” operations of mosses to the Society, rhetorically counters this perceived physical and epistemological envelopedness in his descriptions of his personal observations of snakes. He had not only attended the

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<sup>82</sup> Beauvois, “Memoir on Amphibia,” 363-364, 366, emphasis added.



dissection or “opening” of many rattlesnakes but also accessed and manipulated of the snake’s body himself – in some cases, quite literally defanging its defenses. He recounted picking up a live rattlesnake “with great caution by my left hand, and holding it very near its head, so that by forcing its jaws forward I made its mouth open,” then trying to “dissect out” the fang “with scissars in my right hand.” The physical immediacies of Beauvois’s recitation – the precise placement of each of his hands and tools, the sensation of “two or three drops” of venom which “flowed upon on my fingers”– seem calculated to demonstrate not only the snakes’ limited threat, but also the naturalist’s command of his subject. Paradoxically, by laying the body open, he bounded the snake’s presence and influence, isolating and reducing its disembodied menace to discrete, tangible, and paltry substance. Beauvois’s recollection of being bitten (albeit by a non-venomous black snake) is narrated in very similar terms, with the naturalist at once framing the encounter as a controlled inquiry and dismissing the apprehension of his companions (and audience):

One day I took in my hand a black snake, after having irritated and made it wild, it bit me on the lower joint of the fore-finger, two or three drops of blood issued from the wound, which very much alarmed my guide and several persons who were witnesses, in a few seconds the wound had dried up, and I felt not greater pain than if I had been only pricked by a pin.<sup>83</sup>

Just as Beauvois had asserted to the Society a few years earlier, useful observations “require a long and particular attention.” Therefore, the naturalist included illustrations (Figure 3) by which even the fearful viewer could closely observe the rattlesnake.

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<sup>83</sup> Beauvois, “Memoir on Amphibia,” 367-370.

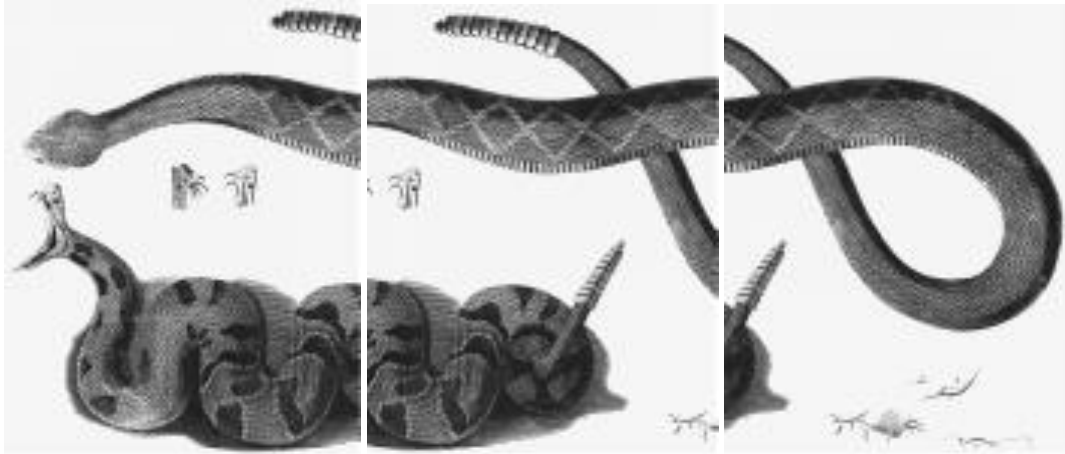


Figure 3 Ambroise de Palisot de Beauvois, “Crotalus Boiquira and Crotalus Adamanteus,” 1799, *Transactions of the American Philosophical Society*

These drawings display two rattlesnake bodies, one extended as though in “the act of creeping” over the page and the other “irritated, and ready to dart,” like those snakes which “recoil upon themselves, raise their heads, and make a hissing while they open their wide mouths.” In the upper left and lower right corner of the frame, one may observe the arrangements of fangs in deconstructed parts of the jaw. Like Beauvois’s verbal dissections, these illustrations of open jaws attempt to render the locus of the snake’s most terrifying qualities a material object “of easy explication.”<sup>84</sup>

Yet over the course of his travels and rigorous investigations, Beauvois admitted there was “one point which greatly excited my curiosity” about the properties of the snake’s body, and it almost eluded his observation entirely. Several people had informed him “that the female rattlesnake concealed its young ones in its body. That when they were alarmed by any noise, or by the approach of man, they took refuge in the body of

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<sup>84</sup> Ibid., 367, 379. Beauvois argued that two species of rattlesnakes pictured were mistakenly “confounded together” by naturalists, including Linnaeus, pointing to the disparate markings, habitats, and behaviors of the pictured “crotalus boiquira” and “crotalus adamanteus.”

their mother, into which they entered by her mouth.”<sup>85</sup> The naturalist confessed that he was “constantly occupied” with this strange, though not entirely unprecedented, account.

The peculiarly protective maternal body had been represented before in the annals of American nature. Seventeenth-century European descriptions of the opossum, another iconic New World animal, emphasized how the animal sheltered her offspring within her body and might “receive” them therein “upon any Occasion of Danger.” The possum, of course, did not protectively swallow its young, but possessed a separate structure – its unique pouch, or *marsupium* – for this purpose. However, as Susan Scott Parrish points out, “the underside of maternal reincorporation was a cannibalistic consumption”: the opossum sometimes devoured its young, a behavior both intriguing and distressing to the naturalists who observed it.<sup>86</sup> Perhaps not surprisingly, the rattlesnake’s unusual “concealment” of its offspring in its mouth and/or stomach struck many as similarly incongruous and even monstrous. Beauvois noted that this swallowing behavior had been attributed to the European viper as well. Yet there, as in America, “the unfavorable and repulsive dispositions inspired by this kind of reptile” produced “an absurd interpretation” – “in order to render it still more hideous...it was pretended that this serpent eats its little ones after having given them birth,” he scoffed.

Beauvois admitted that he started to “despair of ever making the observation,” until at last, “accident furnished me the means”:

Having fallen sick among Indians, I found myself obliged to remain a few days with one of them...During my convalescence I took a walk every morning, and one day when I was following a pretty broad path, I perceived, at a distance, a serpent lying across the road in the sun. I had a stick in my hand, and drew near to kill it, but what was my surprise, when, in the moment I was about to give the

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<sup>85</sup> Beauvois, “Memoir on Amphibia,” 374-77.

<sup>86</sup> Susan Scott Parrish, “The Female Opossum and the Nature of the New World,” *William and Mary Quarterly*, 54, no. 3, (1997), 477, 480, 482-483, 513.

blow, the reptile perceived me, coiled upon itself, and opened its large mouth, into which five serpents, which had not till then observed, because they were lying along its body, rushed into the gulph which I had conceived opened for myself.

This accidental encounter differs strikingly from the “careful study” that Beauvois models and exhorts his colleagues to follow with regards to snakes: rather than “observe them with coolness, and without prepossession,” Beauvois appears to do the opposite. Indeed, unlike the incident in which he antagonized and “made” the black snake “wild,” the positions of observer and observed here are destabilized: moment-by-moment “perceptions” belong not only to Beauvois but also the snake, which opens its mouth “for” him: not to reveal itself to the naturalist, but to rebuff or attack him, Beauvois believes. In fact, Beauvois nearly misses the very phenomenon that had so captivated his interest, as the dualities of this “gulph” – fearful menace and extraordinary refuge, point of entrance and egress – powerfully assert themselves.<sup>87</sup>

Interestingly, Beauvois’s narrative of the snake’s concealing of its young mimics the syntactical structure of the fascination tale, though this time it is the naturalist who “advances, retreats, approaches, retires, comes and goes again”:

I retired to one side and hid myself behind a tree, the reptile crawled a few paces, but hearing no further noise, and not perceiving me, stretched itself out afresh. In a quarter of an hour the young ones came out again. Satisfied with this observation I advanced anew towards the animal, with intention to kill it and examine the interior of its stomach: but it did not permit me to approach so near as it did the first time, the young ones entered with still greater precipitation into their retreat, and the [rattlesnake] fled into the grass. My satisfaction and astonishment were so great that I did not think of following it.<sup>88</sup>

If Beauvois does not experience (or admit to) the “fearfulness” of his contemporaries during this encounter, his physical response is, in effect, the same: a stunned paralysis

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<sup>87</sup>Beauvois, “Memoir on Amphibia,” 379.

<sup>88</sup>Ibid., 371-372.

reminiscent of that suffered by the snake's fascinated victims, his rational scheme to "examine the interior" of the animal abandoned. Furthermore, unlike the snakes he had observed previously, or the possum, whose pouch seemed designed for human access and investigation by the "penetrative eye and hand," this animal in fact controls the terms of the encounter – it rejects or does "not permit" Beauvois's intrusive investigation.<sup>89</sup>

This episode – and its rehearsal of fascination's climax – not only reorders the relationship of observer and observed, but also seems to reset the epistemological terms of Beauvois's memoir, reasserting the figure of "impenetrable mystery." The naturalist insists that, when confronted with the inaccessible and unexplainable, "men of the present day are sufficiently enlightened to remain in suspense," justifying the non-investigation of this particular animal body while at the same time precluding a definitive denial of fascination. Just as the multiple versions of the snake's open mouth inform and underwrite each other in Beauvois's narration, this suspension of inquiry and judgment undermines the conditions for a clear separation or division between natural and "supernatural." The snake's interior encloses both phenomenologies within itself; if a "fact till now unknown" was to be determined and derived from direct and methodical observation, Beauvois was no more able to interrogate this space than those nervous practitioners he criticized.<sup>90</sup>

Indeed, though Beauvois introduced his observations with the invocation of an extensive geographical trace "on this continent," implicitly promising to encompass and address the many questions regarding snakes, he concludes with open-ended uncertainty: "I shall allow myself no reflections on these observations," only that "we have almost

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<sup>89</sup> Parrish, "The Female Opposum," 495.

<sup>90</sup> Beauvois, "Memoir on Amphibia," 363-364.

every thing yet to learn” about the animals. This conclusion is a typical iteration of the philosophical modesty espoused among American scientific circles of the day, but its also reflects, I suggest, the opacity of the “gulphs” he encountered, nature’s internal spaces yawning widely but opaquely, like his blackly, blankly shaded illustration of the snake’s hissing mouth.<sup>91</sup>

### An Infectious Breath

Not long before Beauvois presented his report to the Society, Benjamin Smith Barton presented his own “Memoir concerning the Fascinating Faculty Which Has Been Ascribed to the Rattle-Snake, and Other American Serpents,” to the Philosophical Society. Like Beauvois, Barton believed “the whole story of the enchanting faculty” was “destitute of a solid foundation.” In fact, both men had attended an experiment in Philadelphia that cast doubt on another theory of the fascination’s mechanism: “the snake’s infectious breath.” Many reputable people in Barton’s scientific circles claimed “a most offensive odour, similar to that of flesh, in the last stage of putrefaction, is continually emanating from every part of the body of the rattle-snake.” Barton knew that some South American species of snake “evolved in the stomach...a vapour, or a gas, whose odour is intensely fetid.” But the breath of fascinating North American snakes was said to be something different: an “effluvium” which transformed creatures outside of the snake’s body into participants in their own demise, even at “a considerable distance from

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<sup>91</sup> Beauvois, “Memoir on Amphibia,” 378. Lewis, *Democracy of Facts*, 14.

the body of the animal,” as they would reportedly “run towards their enemy” and were made “fit for swallowing.”<sup>92</sup>

This proposed vapor was as difficult to empirically disprove as it was to observe. Not unlike Latrobe’s attempts to extract the insect from the alewife’s mouth, which often destroyed his subject in the process, dissections of the snake’s body would allow gases contained within it to escape. Therefore, those who wished to study the vapor tried to recreate the bounded environment of the snake’s body. Barton had even interviewed some daring individuals “who are not afraid to put the heads and necks of the black-snake, and other serpents that are destitute of venomous fangs, into their mouths.” In the Philadelphia experiment, a box containing several live snakes had been sealed “so close as to admit but a very small quantity of fresh air,” and “the observation was made in a small warm room.” Barton reported, however, that the group of investigators present “did not perceive any peculiarly disagreeable effluvia to arise from the bodies of these animals.”

For his own part, Barton freely admitted to be one of those naturalists Beauvois criticized, whose “prejudices against the serpent-tribe” prevented him from “cautiously dissecting and examining their structure and their functions, with that attention which the subject merits.” Watercolors of rattlesnake dissections in Barton’s papers, showing the layers of skin and internal organs peeled back and intricately labeled, were revealed to be Latrobe’s work, though long assumed to be Barton’s (Figure 4).

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<sup>92</sup> Benjamin Smith Barton, “A Memoir concerning the Fascinating Faculty Which Has Been Ascribed to the Rattle-Snake, and Other American Serpents,” *Transactions of the American Philosophical Society*, 4, (Philadelphia, 1799). Barton also published this *Memoir* independently (Philadelphia, 1796). Barton notes that William Bartram, a “man of rigid veracity,” informs him that horses were sensitive to and agitated by the vapor “at the distance of forty to fifty yards from the snake,” 87, 90.

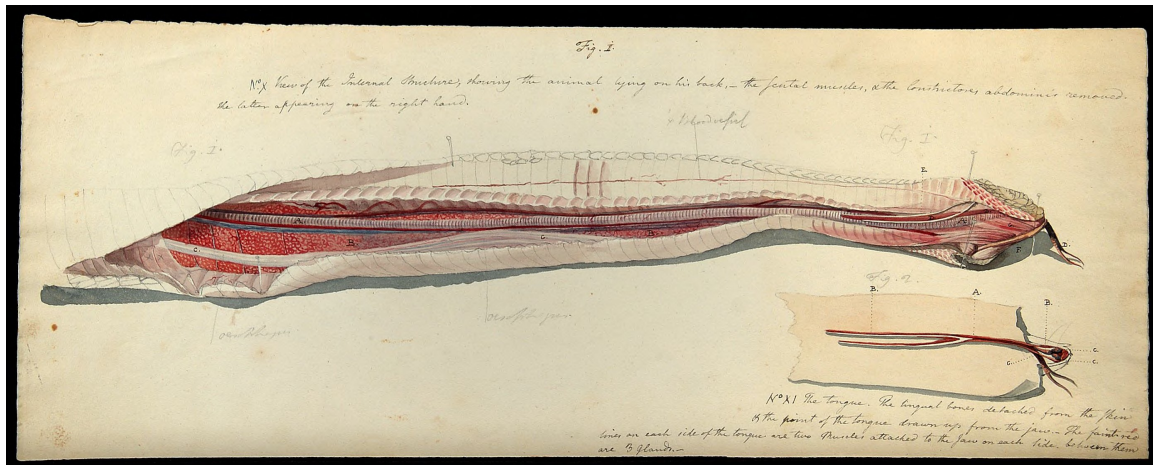


Figure 4. Benjamin Henry Latrobe, “Rattlesnake Internal Organs,” Undated watercolor given (and formerly attributed) to Benjamin Smith Barton, *Benjamin Smith Barton Papers*, American Philosophical Society

In lieu of these intimate investigations, however, Barton presented an alternative model of discovery: the naturalist as a circumspect reader, declaring “I think it proper... to observe, that I have anxiously sought for, and have patiently perused, the volumes of tales published in favour of the doctrine which I mean to controvert.” This method especially suited his subject, because fascination, he was sure, was not a “natural” but rather a literary phenomenon: existing only in texts, springing from even as it “disgraces the page of natural history.” Indeed, Barton assured his audience, “there is but one wonder in the business; ---- the wonder that the story should ever have been believed by a man of understanding, and of observation.”<sup>93</sup>

Barton, who was Rittenhouse’s nephew and had been educated in Edinburgh and at the University of Pennsylvania, rather expected such superstitious beliefs to be “general among the uninformed part of a people,” but he was clearly troubled to find fascination so widely accepted by those with elite scientific and cultural literacy. Not only renowned and “most eloquent” naturalists like Linnaeus but also Samuel Johnson,

<sup>93</sup> Barton, “A Memoir,” 78, 108.



the “Hercules of English literature...gave credit to this tale,” Barton complained. These were readers “who have the book of nature in their hands” – a turn of phrase that originated in medieval theories of the natural world, but was especially popular in the scientific circles of Philadelphia at the end of the eighteenth century. As a kind of shorthand for idealized notions of orderly nature as an open and legible text to be read by the human observer, the “book of nature” appeared frequently in the American Philosophical Society’s papers and prominently at Peale’s museum at Independence Square, where a visitor might read inscribed above the door of “The Book...No time can change, no copier corrupt.” It seems, however, that Barton had *books* of nature in mind here – material objects with heft “in hand,” particularly given the many “pages” and “volumes” he had personally encountered in his research. In fact, as “the farce of fascination” had so “often been related, by different writers,” it was not corruption, but copying itself, that Barton found especially problematic.<sup>94</sup>

The reader-naturalist assured his audience that it would be all too “easy to cite, from different authors” how the “enchantment” was said to take place – significantly, though, “between these accounts, there is hardly a specifick difference,” but rather “considerable unity in all the relations I have heard or read.” A survey of fascination stories published in the early U.S. largely substantiates this claim – most descriptions of fascination were nearly identical, tending to include, as in Beauvois’s version above, the “unhappy animal” victim, its “piteous cry,” and how, as Barton quoted Peter Kalm, “it runs up the tree...comes down again, then runs up, and, lastly, comes lower down” to the snake, “whose mouth is already wide open for its reception.” In fact, the English

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<sup>94</sup> Barton, “A Memoir,” 75, 77, 95. Sellers traces Charles Willson Peale’s citation of the “Book of Nature” from Fettiplace Bellers’s *Injur’d Innocence* (1732), *Mr. Peale’s Museum*, 15.

translation of the Swedish Kalm's *Travels into North America*, published in London in the early 1770s, was a probable source for many American writers, including Bartram and Crèvecoeur.<sup>95</sup> Natural histories and travel accounts, of course, frequently relied on the citation or repetition of earlier sources. For Barton, however, the conspicuous similarities among these "several American writers" indicated a more sinister process at work: a breakdown of proper divisions between texts. Some of the repetitions, he insisted, were "daring and scandalous instances of plagiarism."<sup>96</sup> Barton's accusations may register a generational and paradigmatic shift in the concept and standards of copyright, but his concerns seem to center less on issues of authorial property than on the effect of such repetitions on readers. The striking sameness of the reports, with their almost hypnotic litanies of the prey's "approaches" and retreats, fostered an overwhelming sense of consensus, collectively amplifying an author's "authority" and distorting what Barton called the "democracy of facts."<sup>97</sup>

Historian Andrew Lewis, borrowing Barton's phrase, argues that this *democracy of facts*, or the culture of competing eye-witness testimonies in early U.S. natural history, explains the surprising persistence of strange stories like snake fascination in the early nation. Tales of swallows wintering for months underground or even underwater, for example, were spread by newspapers or journals reprinting accounts from one another,

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<sup>95</sup> Barton, 76, 86, 106. Barton quotes Bartram's *Travels* in a footnote: "It is generally believed that they charm birds, rabbits, squirrels and other animals, and by stedfastly looking at them possess with infatuation: be the cause what it may, the miserable creatures undoubtedly strive by every possible means to escape, but alas! Their endeavors are in vain, they at last lose the power of resistance, and flutter or move slowly, but reluctantly, towards the yawning jaws of their devourers, and creep into their mouths, or lie down and suffer themselves to be taken and swallowed"; see *Travels*, 224. Similarly, Crèvecoeur writes: "The distracted victim, instead of flying its enemy, seems to be arrested by some invincible power; it screams; now approaches and recedes; and after skipping about with unaccountable agitation, finally rushes into the jaws of the snake and is swallowed, as soon as it is covered with a slime or glue to make it slide easily down the throat of the devourer," *Letter From an American Farmer*, 183.

<sup>96</sup> John Brickell's "*History of North-Carolina*," or *The Natural History of North Carolina* (1737) in particular rankled Barton's sense of authorial integrity, n86.

<sup>97</sup> Barton, "A Memoir," 77. 98.

“intriguing people who were unaware of the theory and reinforcing the beliefs of those who already considered the theory true,” Lewis writes.<sup>98</sup> The proliferation and cross-regional movement of these natural history reports seems, on the one hand, to have the trans-localizing effect famously described by Benedict Anderson – the creation of an imagined community of geographically far-flung readers experiencing the same texts.<sup>99</sup> The first edition of Samuel Williams’s *Natural and Civil History of Vermont* in 1795, for example, inspired what one historian calls a “wave” of letters reporting instances of snake fascination from all over the new nation, and well beyond the state’s borders, many of which Williams appended to his second edition in 1798. Likewise, Kalm’s American sources for his fascination account had all ““unanimously, though living far distant from each other, asserted the same thing.”” Studies of early US print culture since Anderson’s thesis have debated how effectually the territory of a nation may be defined by the “sphere of circulation” of printed artifacts, yet Barton himself suggests, if rather derisively, that the space of the early republic could well be defined as “America, the land of fascination.”<sup>100</sup>

But Barton’s depiction of the story’s diffusion through the nation differs from this circulatory model (itself an Enlightenment-era metaphor of the body): the tale

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<sup>98</sup> Lewis argues that due to early national “discourse of fact and earlier rhetorical conventions to report wonders and marvels, published swallow stories show little variation from one to the next, following a similar literary pattern,” and many Americans, espousing a “philosophical modesty” seemingly motivated as much by anti-European and anti-“systematical” feeling as much as epistemological principles, were reluctant to dismiss each others’ reports, *A Democracy of Facts: Natural History in the Early Republic*, 2-3, 14, 27, 38-39.

<sup>99</sup>Benedict Anderson, *Imagined Communities: Reflections on the Origins and Spread of Nationalism*, (1983; New York: Verso, 1991).

<sup>100</sup> Samuel Williams, *Natural and Civil History of Vermont*, (1795) 155, (1798). Leventhal, *In the Shadow of the Enlightenment*, 143. Benjamin Smith Barton, “Memoir,” 74-76. Barton quotes Peter Kalm, *Travels into North-America; containing its natural history, and a circumstantial account of its plantations and agriculture in general*, vol. i. p 317-318, vol ii p 207-210. English Trans. (London, 1770, 1771). Trish Loughran, *The Republic in Print: Print Culture in the Age of U.S. Nation Building*, (New York: 2009) 5-6, 9-13.

disseminates through not so much a *sphere* of circulating objects as an *atmosphere*. In the eighteenth century, Jayne Lewis argues, ideas and experiences of physical and literary atmosphere developed interdependently. Perhaps “the ironic shadow of the Enlightenment’s vaunted faith in the self-evident,” atmosphere was “apparent, if not strictly visible” or tangible, knowable by its effects, like the alleged “atmosphere of the rattlesnake,” which, Barton wrote, “extended its influence to animals situated at a considerable distance” and “would generally occasion the sickness or death of those that were so unfortunate to come within its sphere.”<sup>101</sup> Indeed, although Barton considered the theory of the snake’s sphere of vapors logically bankrupt, it is nevertheless rhetorically and conceptually powerful within his text, informing his description of a transgressive and transformative dispersal of the story:

Unfortunately, the progress of error and credulity is extremely rapid. Their dominion is extensive. The belief in the fascinating faculty of serpents has spread through almost all the civilized parts of North-America. Nor it is confined to America. It has made its way into Europe, and has there taken possession of the mind of scholars, of naturalists, and of philosophers.<sup>102</sup>

The story itself appears a kind of gaseous exhalation – unconfined and seeming to pass through the air, and into other bodies, with the speed of breath. This conflation of the written word and physical air gestures towards the darker, uncontrollable aspects of communication among increasingly connected “communities.” As Lewis contends, the “visual medium of writing” in the eighteenth century – whether fiction or natural philosophy – “openly aspired to the ubiquity, liberty, and commonality of air,” but “also seemed to absorb many of the occult powers, despotic and inscrutable, previously

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<sup>101</sup> Barton, “A Memoir,” 93.

<sup>102</sup> Barton, “A Memoir,” 82.

identified with air.”<sup>103</sup> Here, the “infectious or mephitick vapour proceeding from the mouth of the rattle-snake” offers a convenient and compelling model for the compromised boundaries of the multiple and multiplying accounts, leaching into one another and into new victims – not unlike Carwin’s ventriloquistic voices in *Wieland*. The environment of American land of fascination, bathed in this unhealthy atmosphere, homogenizes its inhabitants into parrot-like victims, depriving them of individual autonomy and reason. The “unity” of an unreasoning conformity produces not a democracy of facts but an “empire of...error.”<sup>104</sup>

Of course, a salient promise of the establishment of a new nation on the North American continent was, as Trish Loughran observes, a “much sought-after sense of self-identity” – not only that “of cherished Enlightenment truisms (such as ‘all men are created equal’), but of geographical self-sameness” – a government physically coherent with the space of the governed.<sup>105</sup> American maps of the United States from the 1790s, Martin Bruckner notes, depict “the nation as a self-contained entity.” Bruckner even likens these well-defined cartographic bodies to popular images of anatomy in magazines and handbooks of the day, the “thickly shaded lines tracing the coastal and national boundaries” like an “epidermal layer visually protecting the land against the encroachment of oceans and neighboring territories.”

But the anatomical imagery of fascination is distinctly at odds with this “corporealized gestalt of the nation’s territory” and its cartographic, “overt emphasis on

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<sup>103</sup> Lewis notes air “became visible as an object of knowledge” around the time of the founding of Royal Society (1660), “in concert with both the decline of supernatural accounts of what goes on in the air” and definitions of modern sociability. Jayne Lewis, *Air’s Appearance*, 1-2, 5.

<sup>104</sup> Barton’s rhetorical suggestibility here is in line with the many British scientists and “pneumatic chemists” who, as J. Lewis points out, “were also compulsive writers and self-conscious literary stylists who consciously moved within ‘Orbs’ of recurrent words,” *Air’s Appearance*, 3.

<sup>105</sup> Trish Loughran, *The Republic in Print*, 9, 12.

boundary lines.”<sup>106</sup> Rather than an insulating, defining epidermis of an “ontogenized” body, the outermost layers of predator and prey, of source and victim, are insubstantial and porous: the “influence of various species of superstition” leak as a “subtile emanation from the body of a serpent” and into others. Barton grimly outlines the subversive transformation from a rational being to a literally fascinated victim: a reader convinced of the truth of fascination “will hardly stop here. He may, and probably will, believe much more. He will not, perhaps, think himself entirely exempted from this wonderful influence” of the snake’s power.<sup>107</sup>

Literary critics have noted the contagious mimicry – between bodies, produced by texts – in Charles Brockden Brown’s *Edgar Huntly*, a novel published in Philadelphia the same year as Barton’s and Beauvois’s essays. As Elizabeth Maddox Dillon observes, the written word within the novel has “contagious effects” and the movement of texts is particularly hazardous. Edgar decides not to copy Waldegrave’s letters for Mary as originally planned, because to share them with her would be to “expose thee to pollution and depravity from this source.” Later, in the final moments of the narrative, a “misguided” letter from Edgar brings about Mrs. Lorimer’s miscarriage. Whereas Michael Warner and others have argued that the value of print in republican culture lies in its broad dissemination of information to the public, in *Edgar Huntly*, Dillon argues, the “circulation of written ideas functions less to spread reason and enlightenment than disease,” and dangerous ideas are “physically communicated, like microbes,” – or, I suggest, in a revision perhaps more recognizable to a reader in 1799, an “infectious

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<sup>106</sup> Bruckner, *The Geographic Revolution*, 124-129.

<sup>107</sup> Barton, “A Memoir,” 113.

vapor.”<sup>108</sup>

Dana Luciano, meanwhile, notes *Edgar Huntly*'s purported Gothic possession of its *reader's* body: the narrator's harrowing experiences are “reproduced through readerly absorption” and subsequent psychological and physical distress – “an effect of compulsory mimicry” not unlike that seen in the credulous consumers of fascination stories.<sup>109</sup> Barton admitted readers might, as with sensational novels, “receive some degree of entertainment” from the dark fictions of fascination, but this pleasure had its risks – namely, the seductive relaxation of the boundaries of the self as an entity, as Dillon describes, “that repelled foreign influence and retained its essence within.” Barton had witnessed how a reader's body reenacted or reproduced the texts in question: “in our country situations,” he lamented, “there is hardly a man or woman, who will not, when the subject comes to be mentioned, seriously relate some wonderful story, as a convincing proof” – suggesting not only the evidence of a truth but the proof-copies of a replicating printing press.

Even the skeptical Barton, it seems, was not completely immune to this mimetic influence. Anatomical dissections, such as those intricately illustrated in Latrobe's watercolors and conspicuously avoided by Barton, might systematically expose and circumscribe the naturalist's subject – but writing for audience, as Barton was acutely aware, was an unpredictably proliferative and disseminating act, and his own essay strains noticeably between a drive toward rhetorical concision and a specter of an almost

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<sup>108</sup>Elizabeth Maddox Dillon, *Gender of Freedom*, 99-101, 170-173. Charles Brockden Brown, *Edgar Huntly*, 127.

<sup>109</sup>Dana Luciano, “Perverse Nature: *Edgar Huntly* and the Novel's Reproductive Disorders,” *American Literature*, 70, no. 1, (1998): 1, 6, 25.

spatial unboundedness.<sup>110</sup> On the first of the forty pages of his memoir, Barton expressed concern that his own readers would complain he had been “too diffusive” and wide-ranging in his argument. He allowed that “the memoir is more extensive than was necessary,” despite attempting to “offer my objections...in as concise manner as I can” and vowing he did “not intend to take up much time” in refuting various naturalists. Barton hoped, at the same time, that his text “at least, contains some new and interesting facts.” Yet, considering his meditations on the dissemination of fascination’s legend, the question of what a single text could *contain* was clearly a vexed one; as Jayne Lewis writes, “atmosphere cannot be stood outside of, so it can never be completely objectified, fixed, or, as a result, intellectually possessed.” Barton couldn’t control or limit what even an “unprejudiced reader” would take away from his offering on the subject. Even in his voluble rebuttal of the powerful tale, he knew was, in effect, reproducing and dispersing it himself. He tried to limit his own repetitions of the story to “as few words as I can,” as if the language would get away from him, but admitted that at times he could not help but “use, for the present, the language of those who differ from me in opinion” in his descriptions. In these self-reflexive hedges, Barton appears less like the naturalist tracing certain lines between objects and more like one trying to stop up imaginary vapor from a snake’s open jaws in his own mouth.

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<sup>110</sup> Barton, “A Memoir,” 74, 98,99. J. Lewis, *Air’s Appearance*, 6.



## CHAPTER III

### Animal Monuments and American Histories

*...the surface, is but a garment covering the ruins of an antecedent state of nature. Whether we turn up the plains, whether we penetrate the cavernous mountains, or climb their broken sides, the remnants of organized bodies are every where found, buried in the various strata which form the external crust of this globe...But what is most surprising is the disorder which reigns...In short, although nature has thus embellished the actual residence of living beings, although so much care is shewn in their preservation and happiness, she seems equally pleased with exhibiting the monuments of her power in this disorder and apparent confusion.*

– Georges Cuvier, quoted in Rembrandt Peale's Historical Disquisition on the Mammoth, (1803)

In the late 1790s, the “Bone Committee” of the American Philosophical Society – a group comprised of Thomas Jefferson, museum keeper Charles Willson Peale, and half a dozen others – requested help in their mission to “procure one or more entire Skeletons of the Mammoth, so called, and of such other unknown animals as either have been, or hereafter may be discovered in America.” This call reflected increased interest among scientific circles in the mysterious “ancient” objects which had been discovered beneath the earth’s surface. Accounts from South Carolina to New England of enormous leg bones, strange teeth, horns and claws appeared with increasing frequency in the journals of scientific societies and academies as well as popular newspapers and magazines. Jefferson had presented his own contribution to this genre, “A Memoir of the Discovery

of Certain Bones of the Clawed Kind in the Western Parts of Virginia,” to the Society in 1797.<sup>111</sup>

However, the vast majority of these accounts, including Jefferson’s, were based on “mutilated, rotten, and broken” bones. These long-buried fragments hinted at impressively sized American beasts which could save the continent “from the imputation of impotence” by European naturalists like Buffon – Jefferson insisted the Virginia bones belonged to a gigantic lion-like creature which he excitedly called the “Great-Claw.” But the bones, decayed and sometimes “much Injured by...curiosity,” appeared severely compromised in their ability to illustrate or prove what the Bone Committee called the “antiquity...of their own country.”<sup>112</sup> Visitors to in Peale’s Philadelphia museum in the Society’s Philosophical Hall in the 1790s were impressed by fossilized mammoth bones, but this was merely a miscellaneous set of “bones, jaws, and grinders of the incognitum,” so-called because so little was definitively known about the animal, whose full skeletal frame had never been assembled.<sup>113</sup> Thus in 1801, when Peale seemed close to achieving the goal of an “entire Skeleton” of the mammoth, Jefferson wrote to enthusiastically “congratulate you on the prospect you have of obtaining a compleat skeleton of the great incognitum, and the world on there being a person at the critical moment of the discovery

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<sup>111</sup> “Circular Letter,” *Transactions of the American Philosophical Society* 4 (1799), xxxvii. Thomas Jefferson, “A Memoir on the Discovery of Certain Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia,” American Philosophical Society, *Transactions of the American Philosophical Society* 4 (1799): 246-260.

<sup>112</sup> Robert Annan, “Account of a Skeleton of a Large Animal, found near Hudson’s River,” *Memoirs of the American Academy of Arts and Sciences* 2 (1793), 160-164. Jefferson, *Notes on the State of Virginia*, 47; “A Memoir,” 248.

<sup>113</sup> “Description of Peale’s Museum, National Gazette,” Philadelphia, September 4, 1793, *SPCWP*, II, 68-69. Henry Wansey, English historian and antiquarian, visited the Peale museum in 1794 and reported seeing “Mammoth’s teeth, found on the banks of the Ohio...one that was broken in two, appeared of the same horney substance within, so as to confirm to me in the opinion of its being the real cheek tooth of some animal now utterly unknown,” “Excerpt, *The Journal of an Excursion to the United States of North America in the Summer of 1794*,” *Ibid.*, 97.

who has zeal enough to devote himself to the recovery of these great animal monuments.”<sup>114</sup>

Exactly what Jefferson meant by this commendation is rather ambiguous, given the semantic multiplicity of *monument* at the end of the eighteenth century: a range of interrelated but divergent meanings that in many respects emblemized the period’s debates over what qualified as historical objects and how these objects produced meaning within the new nation. Jefferson had, rather famously, declared that he knew “of no such thing existing as an Indian monument” in America – a distinction usually understood to mean an honorific and commemorative structure, of which the United States had few.<sup>115</sup> But the artifacts in antiquarian collections – coins, relics, manuscripts – were also frequently referred to as *monuments*: tokens or pieces of evidence, not necessarily grand or imposing, that merely by surviving bring “the past” to mind.<sup>116</sup> Formally, the “Bone Committee” was named the Antiquarian Committee – a double moniker that indicates the overlapping interests of eighteenth-century natural history and antiquarianism, but also highlights the degree to which the category of “American antiquities” was vexed and loosely defined in the first decades of the republic.<sup>117</sup>

This chapter examines early national attempts to historicize the disordered underground discoveries. How might these buried, ruined objects offer a basis for

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<sup>114</sup> Jefferson to Peale, July 29, 1801, Washington D.C., *SPCWP*, II, 349.

<sup>115</sup> See Kirk Savage, *Monument Wars: Washington, D.C., the National Mall, and the Transformation of the Memorial Landscape* (Berkeley: University of California Press, 2009) on the earliest monuments for Revolutionary War sites and heroes, 1-40.

<sup>116</sup> “Monument, n.” OED Online. September 2014. Oxford University Press.

<sup>117</sup> According to Stuart Piggott, antiquarianism took off in the late 17<sup>th</sup> and early 18<sup>th</sup> centuries “as a result of the new science, with the sense that history can be found, experienced, in ‘things themselves,’” *Ancient Britons and the Antiquarian Imagination*, (1989), 23. Membership overlapped considerably between the Society of Antiquaries and the Royal Society; Sir Joseph Banks, among others, “saw them as mutually complementary activities,” Rosemary Sweet, *Antiquaries: The Discovery of the Past in Eighteenth-Century Britain* (Cambridge University Press: 2004), 196. Susan R. Stein, *The Worlds of Thomas Jefferson at Monticello*, (1993), 400. “Circular Letter,” *Transactions of the American Philosophical Society* 4 (1799), xxxvii.

American history? The antiquarian's heap of "broken," "illegible," and "obliterated" objects were widely considered out of place in the formation of eighteenth-century British historical thought – "bits of worthless things" that had to be incorporated or reshaped into a compelling and temporally continuous narrative to convey meaning, Mack writes. Yet the later part of the century "saw the emergence of the object as a new kind of historical evidence in what was until then a strictly text-based historiography" – a move that anticipated nineteenth-century archaeology and began to describe a historical knowledge accessible in *things*.<sup>118</sup> Writers began to ask how the past might "inhere in an object," a question especially problematic in the context of American "antiquities": the "perished" bones and fragmented skeletons found within drainage ditches or marshy manure pits.

In many ways, an animal skeleton seemed an unlikely candidate for becoming the kind of monumental structure that could become "an actual and permanent acquisition to the state, adding to its value as well as to its ornament," as Jefferson wrote in his *Notes*.<sup>119</sup> A skeleton is an internal structure, most often enclosed within flesh or within the earth; its former physiological function as a multipart, interior scaffold for the form of the body prefigures its piecemeal decay, concealed underground – hardly the exemplar of what Jefferson called "such exterior and visible characteristics as every traveler is competent to observe, ascertain, and to relate."<sup>120</sup> Like the objects, bodies, and vaporous "influences"

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<sup>118</sup> Mack critiques the idea that history in eighteenth-century Britain is "most importantly understood as narrative history," associated with the historical works of Edward Gibbon and David Hume and the novels of Henry Fielding and Laurence Sterne, for example, and not antiquarianism's wayward fragments, *Literary Historicity: Literature and Historical Experience in Eighteenth-Century Britain*, 110-112. Francis Grose, *The Antiquarian Repertory* (1775), qtd. in Mack, 111.

<sup>119</sup> Jefferson, *Notes*, 154.

<sup>120</sup> Letter from Jefferson to John Manners, February 22, 1814, qtd. in Timothy Sweet, "Jefferson, science, and the Enlightenment," in *The Cambridge Companion to Thomas Jefferson*, Ed. Frank Shuffleton. (Cambridge University Press, 2009), 110-111. Sweet writes that Jefferson "continued to prefer the

enfolded within the eye or the stomach, these bones were resistant to full empirical explication – to remove them from their interiorized contexts of body or subterranean resting place was to materially and ontologically destabilize them. Nevertheless, shifting epistemologies of historical – or natural historical – evidence brought these bones to the forefront of debates over how to represent the United States’ historical origins.

This chapter explores the ways Americans experienced these uncertain monuments as evidence and ephemera in the early nation. In diaries, natural histories, advertisements, and a framed and mounted “historical disquisition,” writers attempt to resolve these “ruins” with images of concrete and universally legible icons, asking what these subsurface remains “prove”? What was the relationship between “actual” remains and “embodied truth”? Indeed, what kinds of material or textual representation could offer a unifying sense of national permanence – a dilemma of specific importance in a republic whose “perishable” structures produced a kind of historical vacuum, in which “every half century...our country becomes a tabula rasa, whereon we have to set out anew, as in the first moment of seating it,” as Jefferson lamented. These queries, set in disordered and obscure subterranean space, emerge as particularly revealing explorations of the nation’s grounds for authentic and communal “truths.”

### Certain Bones

Midway through his *Notes on the State of Virginia*, Thomas Jefferson decides to “open and examine” the material ground of Virginia itself: specifically, a barrow, or

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Linnaean taxonomy” over Cuvier’s functional taxonomies of the early nineteenth century, which based on the more specialized and exclusive study of more internalized structures, like embryos.

mound of earth, along the Rivanna River near his home. The contents and origins of such barrows, which were “found all over this country,” were matters of debate; “that they were repositories of the dead, has been obvious to all,” but some observers had suggested they were the sites of former battles, remnants of military fortifications, or “general sepulchres” for ancient towns. Curious as to which of these theories were true, Jefferson reports that he “cut through body of the barrow, that I might examine its internal structure” and its “collections of human bones.”

This subterranean investigation directly follows the passage in which he seems to rule out the possibility of “Indian” monuments in the U.S., declaring he “would not honor with that name arrow points, stone hatchets, and half-shapen images.” Beyond these smaller artifacts, which would seem at home in a contemporary caricature of an antiquary’s hoard of “trifles, Jefferson also considers structures of a grander size, continuing “on the large scale, I think there is no remain as respectable as would be a common ditch for the draining of lands, unless indeed it be the Barrows.”<sup>121</sup> This syntactical equivocation – does Jefferson consider the barrows a “respectable” exception, after all? – has been widely read as reluctance to venerate the mounds and a denial of their builders’ “commemorative impulse.”<sup>122</sup> I suggest, however, that our reading of this point is incomplete without the context of shifting cultural definitions of *monument* at the end of the eighteenth-century, particularly among descriptions of ancient American objects.

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<sup>121</sup> Thomas Jefferson, *Notes on the State of Virginia*, 97-99. For caricatures of eighteenth-century antiquarians, see Mack, *Literary Historicity*, 111.

<sup>122</sup> See, for example, Andrew Lewis, *A Democracy of Facts*, 80. Jonathan Elmer, “The Archive, the Native Americans, and Jefferson’s Convulsions,” *Diacritics*, 28.4 (1998), 7.

Interestingly, Jefferson does not hesitate to describe the barrows as monuments elsewhere: in a letter about the mounds written shortly after *Notes*, he wishes that “our philosophical societies would collect exact descriptions of the several monuments as yet known and insert them, naked, in their Transactions.”<sup>123</sup> It is unclear whether Jefferson intended to confer any honor on the mounds with this distinction; indeed, the specification that groups like the APS should publish unembellished or “naked” accounts of the tumuli suggests he had in mind something more like a specimen – an object from which an examiner could glean new information. For example, Jefferson had marveled earlier in *Notes* at the “monuments of a war between rivers and mountains,” where the Potomac and Shenandoah rivers converge and pass through a cleft in the mountains at Harpers Ferry. Though largely unremarked by the people who lived nearby, these piles of rocks and “the evident marks of their disrupture and avulsion from their beds” make present an ancient event for Jefferson: “The first glance of this scene hurries our senses” through a narrative of geological change, that “this earth has been created in time, that the mountains were formed first, that the rivers began to flow afterwards” and became dammed by the Blue Ridge mountains. He imagines, as if he were witnessing it, “in the moment of their junction they rush together against the mountain, render it asunder, and pass off to the sea,” an event that “must have shaken the earth to its center,” just as, indeed, Jefferson is shaken.<sup>124</sup> Despite his invocation of “our senses,” however, the experience is not strictly sensory; rather, the monuments seem to requisition an empiricist discourse by the impressiveness of their materiality.

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<sup>123</sup> Jefferson, *Notes*, 97. Jefferson to Charles Thomson, Sept. 20 1787, *Jefferson Papers*, Library of Congress, qtd. in Brooke Hindle, *The Pursuit of Science in Revolutionary America, 1735-1789*. (Chapel Hill: 1956), 324.

<sup>124</sup> Jefferson, *Notes*, 19-20, 31-32.

The description of the excavated Rivanna barrow seems at first to recreate this evocative silhouette in miniature. Like the mountain “cloven asunder” from “its summit to its base,” the mound was bisected with “a perpendicular cut” and “opened to the former surface of the earth.” Yet while the rock-monuments offer a vivid immediacy to a “time anterior to records either of history or tradition,” Jefferson’s impression of the barrow bones is instead one of overwhelming chaos:

These were lying in utmost confusion, some vertical, some oblique, some horizontal, and directed to every point of the compass, entangled, and held together in clusters by the earth. Bones of the most distant parts were found together, as, for instance, the small bones of the foot in the hollow of the skull, many skulls would sometimes be in contact, lying on the face, on the side, on the back, top or bottom, so as, on the whole, to give the idea of bones emptied promiscuously from a bag or basket, and covered over with earth, without any attention to their order.

Here are perverse parodies of the organized structures and rational instruments of the surface world: a compass of bones, pieces of feet resting inside crania, a jumbled hydra of skulls. Though Jefferson thought he could rule out several hypotheses of barrow-building based on these observations, he could not reach a clear idea of “whatever occasion” led to this subterranean disorder.<sup>125</sup>

Scholars have sometimes linked Jefferson’s digging in the barrow to his less material investigations, assuming that the “bones reveal the secrets of past Indian cultures in an apparently objective manner,” as Gordon Sayre writes.<sup>126</sup> Sayre, for example, characterizes Jefferson’s compilation of Native American vocabulary lists as an attempt to “make Indian languages as tangible, storable, and searchable as a collection of bones,”

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<sup>125</sup> Jefferson, *Notes*, 98, 100.

<sup>126</sup> Gordon Sayre, “Jefferson and Native Americans: policy and archives,” *The Cambridge Companion to Thomas Jefferson*, Ed. Frank Shuffleton. (Cambridge University Press, 2009) 63. See also Douglas Anderson, “Subterranean Virginia: The Ethical Poetics of Thomas Jefferson,” *Eighteenth-Century Studies*, vol. 33:2 (2000), 236.



arguing that these attempts to “turn word into object,” outlined in the same Query of Notes as the mound excavation, echo or aspire to that investigation’s methods and conclusions. It is clear from Jefferson’s description, however, that the bones, in their “different states of decay,” are unstable as objects and as evidence, disintegrating in the midst of observation. Indeed, while eighteenth-century readers praised Jefferson’s “penetrating genius” and “perfect examination” which “rendered certain” the mound’s origins and contents, his empirical observations seem in fact to undermine the bones’ object-ness.<sup>127</sup> Far from being tangible or storable, many of the bones “were so tender, that they generally fell to pieces on being touched,” preventing thorough inspection or recollection. A child’s jawbone paradoxically offers “the most decisive proof” that the barrow was a general burial site, but it must be handled extremely carefully because juvenile bone will “probably decay sooner” than the rest of the brittle collection. Another skull “on a slight view appeared to be that of an infant, but it fell to pieces on being taken out, so as to prevent satisfactory examination.”<sup>128</sup> Although one might expect these artifacts, guarded under strata of earth, to appear as faithful and undoctored representatives of a past reality like the boulders at Harpers Ferry, they instead present multiple and competing valences of evidence: of an original “natural state,” of disintegration over time, of a current fragmented condition.

Accounts of barrows located throughout the trans-Appalachian region increased in the years following the publication of *Notes*, as white settlement continued to move westward. These reports, which often promulgated wild theories as to the mounds’

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<sup>127</sup> James Madison, “A Letter on the supposed Fortification of the Western Country, from Bishop Madison of Virginia to Dr. Barton,” *Transactions of the American Philosophical Society* (1809): 136-37. Bishop James Madison, president of the College of William and Mary (1776 -1812), was the cousin of James Madison, Jefferson’s secretary of state and presidential successor.

<sup>128</sup> Jefferson, *Notes*, 98-99.

sources, also registered the contradictions implicit in dealing with disintegrating material evidence.<sup>129</sup> Benjamin Smith Barton, writing in 1796, considered the “American monuments,” or tumuli, to be “proofs” of highly developed societies on the continent from which the present-day “rude nations of America” had fallen: the mounds were “monuments whose magnitude or materials shall secure them an existence” after their descendants “have passed away.” Despite this declaration, the evidentiary strength of the barrow’s contents was questionable, Barton found, particularly because “the subjects of investigation have been taken from the darkness of the GRAVE,” a confused subsurface space, as Jefferson had depicted, that resisted “enlightened” methodologies.<sup>130</sup> Barton explained he would have to abandon “the sure road of historical inquiry” for the “too often uncertain, path of the antiquary,” relying more heavily “imagination and conjecture” than he otherwise would allow himself.<sup>131</sup> Historian Andrew Lewis reads this passage as a delineation of “methodological difference between natural history and antiquarian study,” insofar as American naturalists typically eschewed speculation,

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<sup>129</sup> Early republican Americans’ explanations of the mounds were “bounded, it seemed, only by the limits of their imagination and their ability and willingness to borrow ideas from classical writings and ancient legends...a spectrum...running from the Lost Tribes of Israel, Vikings, migrants from Phoenicia, and refugees from Atlantis, to evidence supporting polygenesis; Lewis, *A Democracy of Facts*, 72-78.

<sup>130</sup> In fact, the earliest recorded sense of the monument in English is a burial place or sepulcher, though this use was fairly archaic by the late eighteenth-century. Major Jonathan Heart, describing the “ancient works” at Grave-Creek and the Muskingum River in the Ohio territory, distinguished the various mounds as “graves” or “monuments” by the presence of bones within them: “the common mounts, or Indian graves, or monuments (for they are not always found to contain bones), are scattered over the whole country,” “A letter from Major Jonathan Heart, to Benjamin Smith Barton, M.D. Containing Observations on the Ancient Works of Art, the Native Inhabitants, &c. of the Western-Country,” *Transactions of the American Philosophical Society* 3 (1793), 215.

<sup>131</sup> Barton’s opposition of the “sure path” of history and the “uncertain path” of antiquarianism recalls John Dart’s 1742 contrast of the historian’s “direct Road” and the antiquary’s off-road “marking out,” which Mack notes as a significant distinction in eighteenth-century conceptions of historiography; *Literary Historicity*, 109. Barton, “Observations and Conjectures concerning Certain Articles Which Were Taken out of an Ancient Tumulus, or Grave, at Cincinnati, in the County of Hamilton, and Territory of the United States, North-West of the River Ohio: In a Letter from Benjamin Smith Barton, M.D. to the Reverend Joseph Priestley, L. L. D. F. R. S. &c.” *Transactions of the American Philosophical Society* 4 (1799): 181-183, 186.

claiming to make purely empirical or (“naked”) descriptions of their subjects.<sup>132</sup> Yet this division becomes less clear even within Barton’s own work on the subject. In his 1798 monograph on the mounds, Barton reflected that “Natural History . . . teaches us, a mortifying truth, that nations may relapse into rudeness again, all their proud monuments crumbled into dust.”<sup>133</sup>

Furthermore, early national descriptions of the remains in barrows, and their disorder and ephemerality in particular, bear striking resemblance to natural histories of underground bones from the same period.<sup>134</sup> In 1785, a worker dug up “the remains of a very surprising animal” on the farm of Robert Annan near the Hudson River in New York; deep in the swampy ground, “the bones were become so soft, that the spade cut them almost as easily as the clay,” Annan reported. Further efforts to recover the bones were met mostly with frustration:

It was impossible to handle many of them, without breaking them. We found the vertebrae or joints of the back, lying in a row, as they had been when the animal was alive, but the line, in which they lay, run out into the ditch, when all was marred; and in lifting them up they broke. We then discovered on one side of them, near to where they began, what we supposed to be the loin joint. We worked very carefully about it; and got it up; but it also fell in two pieces.<sup>135</sup>

Here the vestiges of the animal’s form are tantalizingly suggestive but also persistently obscure: the “line” of vertebrae hints at shape and scale, but this structural continuity is

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<sup>132</sup> Barton, “Observations and Conjectures,” 182-187. Barton was of the belief that the mounds had been created by “a race of people, who . . . had made much greater advances in the arts, and in improvement, than the present race of Indians,” “Observations,” 183. Lewis, *A Democracy of Facts*, 83-84.

<sup>133</sup> Benjamin Smith Barton, *New Views on the Origin of the Tribes and Nations of America*, (Philadelphia: 1798), iv-vi. Barton noted his affiliation with the Society of Antiquaries of Scotland as well as American scientific societies on the frontispiece of his 1798 Memoir.

<sup>134</sup> While the fields of anthropological archaeology and paleontology developed through nineteenth and twentieth centuries into distinct disciplines with specific standards of practice, excavations of various kinds in the first decades of the United States largely predate this division; the Bone Committee, for example, specifically requested data on American tumuli along with their call for aid in locating mammoth skeletons, “Circular Letter,” xxxvii. For more on Jefferson’s barrow science in relation to modern-day archaeological regulations, see Sayre, “Jefferson and Native Americans,” 61-62.

<sup>135</sup> Annan, “Account of a Skeleton of a Large Animal, found near Hudson’s River,” *Memoirs of the American Academy of Arts and Sciences*, vol. 2 (Boston: 1793), 160-164.

abruptly disturbed as it traverses the unevenly excavated ground. Indeed, in addition to the disorganization and damage wreaked by the physical attempts at recovery, Annan's recorded observations seem to reenact a temporal process of decay and dissolution: he sees the spine column's "run out" into the ditch, "when" – not where – "all was marred."<sup>136</sup>

Likewise, Jefferson's 1797 memoir of the fossils of the Great-claw registers similar physical and representational fragility. These "certain bones" were remarkably *uncertain* as physical specimens: after the discoverers "recover[ed] what were still recoverable" from the limestone cavern in the Blue Ridge mountains, they had only "a small fragment of the femur or thigh bone," "an ulna, or fore-arm, perfect, except that it is broken in two," and "the residue of the femur...split through the middle," though "this piece was afterwards lost." Yet in this instance, Jefferson appears more willing to derive definitive knowledge from fragments; as he declared to the APS, "the bones exist: therefore the animal existed." This assertion of self-evidence recalled his earlier thoughts on the elusive mammoth, whose "vestiges of existence," though at that time incomplete, "bespeak" of an impressively sized if largely unknown animal – indeed, "whatever animal we ascribe to these remains, it is certain such a one has existed in America, and that it has been the largest of all terrestrial beings," he wrote.<sup>137</sup> Advancing a similar

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<sup>136</sup> For other examples of disintegrating bones, see Timothy Edwards, "A Description of a Horn or Bone" [1788]: "there is reason to believe, that in its natural state, it was nearly a semicircle of ten or twelve feet," but much of it is "perished, tender, and broken," *Memoirs of the American Academy of Arts and Sciences* 2 (1793), 164-65; George Turner, "Memoir on the Extraneous Fossils, Denominated Mammoth Bones: Principally Designed to Shew, That They are the remains of more than one species of non-descript Animal," *Transactions of the American Philosophical Society* 4 (1799), 510-18; William Dunbar, "Extracts from a Letter, from William Dunbar Esq. of the Natchez, to Thomas Jefferson, President of the Society" [1801], *Transactions of the American Philosophical Society* 6 (1809).

<sup>137</sup> Jefferson, *Notes*, 44-47.

argument about the great-claw, he extrapolates a “certain estimate” from the broken limb bones of a cat several times larger than the lion of the old world.<sup>138</sup>

Besides supporting what Timothy Sweet calls Jefferson’s “hemispheric chauvinism” regarding native animals, the great-claw bones also appears to legitimate other American narratives as well. Jefferson claims the great-claw bones confer factuality to the written history of the supposed lion, citing several “accounts given by the earlier adventurers to this part of America” that had been “heretofore considered as fables” but “have regained credit since the discovery of these bones.” It should be noted, however, that Jefferson takes as much or more “credit” from a “well-known” ancient carving of a lion on rock near the confluence of the Ohio and Kanhawa Rivers.<sup>139</sup> Even more so than the Harpers Ferry rocks, this artifact is document and monument both: a permanent and durable object, “always susceptible of verification.” It was unclear if the “residue” of the great-claw skeleton could become such an empirical totem. Jefferson concluded his memoir with his plan to “deposit his bones with the Philosophical Society, as well as in evidence of their existence and of their dimensions, as for their safe-keeping,” rhetorically straddling the bones’ status as certain evidence and uncertain ephemera.

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<sup>138</sup> Jefferson, “A Memoir,” 250, 253. Jefferson completed his “Memoir” in February 1797, but on the day he presented it to the American Philosophical Society the following month, he hastily added a post-script which acknowledged his identification of the Great-Claw might be in doubt. A recent description in London’s *Monthly Magazine* of a large skeleton “dug up...in Paraguay, and now mounted in the cabinet of Natural History in Madrid” which appeared quite similar to his Megalonyx; this animal, however, was identified as a relative of the sloth instead of ferocious lion. Jefferson was hesitant to completely disavow his own conclusions, since the illustration in the London account “is not so done as to be relied on, and the account is only an abstract,” and, significantly for the describer of the “Great-Claw,” the claws in “the figure appear very small, the verbal description does not satisfy us whether the claw-bone, or only its horny cover be large.” More bones, he decides, “must be waited for, and hoped with patience,” and suggests “it may be better, in the mean time, to keep up the difference of name,” A Memoir,” 259-60. Julian P. Boyd, “The Megalonyx, the Megatherium, and Thomas Jefferson’s Lapse of Memory,” *Proceedings of the American Philosophical Society* 102 (1958): 421.

<sup>139</sup> Jefferson reported that this “perfect figure of a lion” was “so rudely done as to leave no room to suspect a foreign hand,” “A Memoir,” 252-253. T. Sweet, “Jefferson, science, and the enlightenment,” 102.

## Actual Remains

In June 1801, Charles Willson Peale stood in the granary of Jon Masten's farm, looking at the battered bones of the mammoth "heaped on the floor." Peale had traveled from Philadelphia to Masten's property in New York, not far from the site of Annan's find, because he had heard the farmer had found the most complete mammoth skeleton to that date, though Peale was uncertain if Masten would part with it.<sup>140</sup> The museum keeper, who had spent much of his adult life as an artist, considered that if he "could get nothing more, at least drawings of [the bones] would give satisfaction," and asked for permission to create "Copies of them on paper" in the scale or "size of nature," which when pinned or pasted together might form a paper simulacrum of the animal's enormous skeleton.<sup>141</sup>

Peale's interest in the presentation and preservation of significant American subjects predated his search for the mammoth skeleton. As a respected painter and portraitist (indeed, his earliest correspondence with Jefferson was in regards to a portrait sitting), Peale had amassed "a collection of portraits of many of the persons who have been highly distinguished in their exertions, in the late glorious revolution." It was, Peale maintained, "by good and faithful paintings the likeness of man is perhaps with the greatest precision handed down to posterity." In the years that followed, these paintings hung over the natural history exhibits at the museum as visible signs of national continuity and order. Yet these images, however well executed, were effectually the same

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<sup>140</sup> Peale describes a visit to the "Morass that formerly belonged to the Revd. Mr. Hannah [Annan]... the place where the first bones of this extraordinary animal were found," "Diary 19. Philadelphia to Newburgh, New York, July 29 – September 25," *SPCWP* II, 364.

<sup>141</sup> Peale, "Diary 18. Part 1: Philadelphia to NYC and Newburgh, NY, June 5-July 2 1801," 330; 343.

as the “slite drawing” of a mammoth bone: at best “Copies” of originals. As Peale wrote enthusiastically to potential visitors of the museum:

There are other means to preserve, and hand down to succeeding generations, the relicks of such great men...The mode I mean, is the preserving of their bodies from corruption and being the food of worms...Altho’ perhaps it is not in the power of art, to preserve these bodies in that high perfection of form, which the well executed painting in portrait, and sculpture can produce; yet the *actual remains* of such men as I have just described, must be highly regarded... Sorry I am, that I did not propose the means of such preservation to that distinguished patriot and worthy philosopher, Doctor Franklin, whose liberality of soul was such, that it is not improbable that by the interest which I might have made with his friends, he could have been prevailed upon, to suffer the remains of his body to be now in our view.<sup>142</sup>

This surprising suggestion never came to fruition – the preponderance of “gentlemen of known merit” in the early republic notwithstanding – but it underscores the central importance Peale ascribed to “*actual remains*,” at least in regards to certain subjects.<sup>143</sup>

The artist might produce a higher “perfection of form,” and he might even cleverly deceive the senses into perceiving imaginary forms (as in the various trompe l’oeil images and visual tricks of Peale’s museum), but could he not offer the authenticity or “precision” of natural “relicks.”<sup>144</sup>

Mack cites two eighteenth-century definitions of *relic*: a religious object like a memorial of a saint or martyr, and “an object invested with interest by reason of its antiquity or associations with the past.” For example, Horace Walpole, perhaps the period’s “most problematic antiquary,” was a famous collector of relics or ““bits of famous people.”” Walpole was also well-known, however, for the imitative or artificial

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<sup>142</sup> *Ibid.*, 14-16.

<sup>143</sup> Lillian Miller, Sidney Hart, and David C. Ward write that for Peale, “as for the Enlightenment generally, death was an event in the economy of nature, and no special religious or spiritual sanctity was associated with the corpse. Thus, in March, 1806, [Peale] without qualms attempted to obtain an embalmed child from a New York church,” *Ibid.*, 24.

<sup>144</sup> For more on Peale’s pictorial and optical illusions, see Bellion, *Citizen Spectator: Art, Illusion, and Visual Perception in Early National America*, (Chapel Hill, 2011), 1-4, 63-111.

historical elements of both his historiography and his home, Strawberry Hill, a point which has drawn much attention from scholars concerning the degree to which an object's "substance" is equated with its "historicality." For some contemporary critics, the artificial or "papier-mâché" features of Walpole's house are "problematic" not because they are "fake" but "that they are paper," Mack points out. Indeed, this present-day emphasis the "implicit link between fact and object" appears to rehash the very eighteenth-century arbitrations of the truth of history pondered by Peale.<sup>145</sup> Like "flimsy representation of stone," would the equally flimsy "paper" mammoth bones lack the representational or substantiating power offered only by the relic?

Throughout the 1790s, Peale had written frequently to correspondents on both sides of the Atlantic about his efforts to transform fragile animal specimens into permanent fixtures which "will keep for ages with little trouble to the master of the Museum," anticipating the longevity of not only the museum, but also the nation for which it was intended to be a cultural and educational institution.<sup>146</sup> In particular, Peale was frustrated that methods which were successful in "foreign countries" were "ineffectual to prevent the depredations by the vermin of America." Peale eventually developed a process of treating specimen skins with arsenic, which were then stretched over a wooden skeletal structure to create "almost perfect forms." Yet in contrast even to this meticulous gallery of stuffed animals posed in a facsimile of life, their wooden

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<sup>145</sup> Mack, *Literary Historicity*, 112-115, and "Horace Walpole and the Objects of Literary History," *ELH* 75, no. 2 (2008): 371-372. See James Watt, *Contesting the Gothic: Fiction, Genre and Cultural Conflict, 1764-1832* (Cambridge, 1999), 35.

<sup>146</sup> Peale, "To the Citizens of the United States of America," 9; "Broadside," 15. *Guide to the Philadelphia Museum*, (Philadelphia, 1806) qtd. Sellers, *Mr. Peale's Museum*, 162. Robert McCracken Peck describes Peale's unique "ability to create the illusion of skeletal structure and musculature in his birds and mammals...by mounting his skins on anatomically accurate wooden forms," which were superior to wire or wooden frames for life-like appearance. "Preserving Nature for Study and Display," in *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730-1860*. Ed. Sue Ann Prince. Philadelphia, The American Philosophical Society, 2003.



pseudo-skeletons enveloped in skins, Peale imagined a spare, visually compelling form comprised only and elegantly of “actual” mammoth bones. Indeed, Peale had written hopefully some years earlier that if “a number of those bones were collected together, and made into a complete skeleton, it would lead to an illustration of the animal by analogy.”<sup>147</sup>

After a few suspenseful days of negotiations, Masten at last agreed to sell the bones themselves to Peale, as well as the rights to those that Peale might find there in the future.<sup>148</sup> But as Jefferson, Annan, and others had found before him, the long-sought-after ancient objects were dubious artifacts. The pile of bones in the granary appeared as a kind of anti-collection reminiscent of the Virginia barrow: the dumped and discarded contents of a bag or basket. They had been discovered initially by a group of Masten’s neighbors who had been helping him dig the swampy morasses on his property for “marle,” or calcium-carbonate-rich mud, to use as manure; in fact, the discovery of the first bone was purely accidental, the result of a “deeper than usual” thrust of a spade. Although the find elicited some interest from the laborers in “the ruins of an animal so gigantic, of whose bones very few among them had ever heard, and over which they had so often unconsciously trod,” their “impatient and unruly” – and, as Peale’s son Rembrandt noted, often inebriated – efforts had “nearly destroyed the skeleton.”<sup>149</sup> It was only after a “learned physician...gave importance to the objects” that Masten himself decided “to

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<sup>147</sup> Peale, “Broadside,” 15-16.

<sup>148</sup> Peale’s offer to buy the bones was apparently well-timed to Masten’s growing unease with his neighbors’ claims to the bones they had helped retrieve. R. Peale, *An Historical Disquisition*, *SPCWP*, II, 551. Peale, “Diary 18. Part 1: Philadelphia to NYC and Newburgh, NY, June 5-July 2 1801,” *SPCWP*, II, 329-330.

<sup>149</sup> Rembrandt Peale, *An Historical Disquisition on the Mammoth, or, Great American Incognitum, an Extinct, Immense, Carnivorous Animal, Whose Fossil Remains Have Been Found in North America*. London, July 18, 1803, *SPCWP*, II, 550-51. (I will refer to Charles Willson Peale as “Peale,” and Rembrandt Peale as “Rembrandt,” following the conventions of Peale scholarship.)

recover as many bones as possible” with the help from his neighbors, for whom “curiosity did much,” Rembrandt wrote ruefully, “but rum did more.”

Many accounts of bones found during this time tend to follow a recognizably similar pattern.<sup>150</sup> After Annan’s hired man dug up and broke some of the strange teeth, “he threw them on the side of the ditch; and being a stranger to contemplation, took no further notice of the...strange stones in the ditch”; days passed before Annan himself recognized the significance of the “stones.” Likewise, Jefferson’s great-claw was first unearthed by locals digging for saltpeter in the limestone caverns of the Blue Ridge Mountains, and like Annan, Jefferson was quick to point out that “the importance of the discovery was not known to those who made it, yet it ... led persons of vague curiosity to seek and take away the bones.” He deemed it “fortunate for science that one of its zealous and well informed friends” heard about the bones and intervened, saving the few that remained.<sup>151</sup>

The repetition of this narrative – of discoverers whose rough and earthy labor brings them into first contact with the buried bones, and of their subsequent misapprehension and mishandling of them – can be read as an arbitration or oblique enforcement of who could truly perform scientific work in the early republic: elite friends of science or amateur, uneducated Americans.<sup>152</sup> I suggest that, just as importantly, these accounts are also registering writers’ concerns about the basic failure of bones to signify

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<sup>150</sup> See also a 1797 diary entry in which Peale describes a bone from a New Jersey farm which “had long been promised to me for my Museum” and was “about 4 feet long, but by misfortune was broken by the Negro in digging it up.” Peale, “Diary 15: Account of a Trip to New Jersey to Hunt for Rattlesnakes,” Bridgeton, NJ, February 21-26, 1797, *SPCWP*, II, 173.

<sup>151</sup> Jefferson, “A Memoir on the Discovery of Certain Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia,” American Philosophical Society, *Transactions*, vol. 4 (Philadelphia: 1799), 246-260.

<sup>152</sup> For a reading of the excavation at Jon Masten’s farm in terms of “rationalized” and “unrationalized” labor and production in the early republic, see Laura Rigal, *The American Manufactory: Art, Labor, and the World of Things in the Early Republic* (Princeton: Princeton University Press, 1998), 101.

to a wide range of Americans. The “ruins of an animal so gigantic” appears a succinct inversion of Jefferson’s “great animal monuments”: instead of legible proofs of a distinctive past, the bones nearly decay unseen beneath the ground and unconscious steps of republican farmers. Masten himself admitted “he felt no interest in the fossil shells contained in his morass,” and “for him the bones might have rotted in the hole which discovered them: this he confessed to me,” recorded a troubled Rembrandt. This array of differing “felt interests” highlights the quandary faced by the Bone Committee, and the early republic at large: establishing the socially determined worth of not just historical objects, but national objectives.<sup>153</sup>

From these examples of damage and indifference, Peale derived even more of an impetus to rescue and reconstruct the skeleton – to scaffold, as it were, not just the frame of the extinct animal, but the reactions of an American audience, who ideally should “enjoy pleasure while contemplating the magnitude of the animal and the manner of its support.” Writing to Jefferson at the end of June 1801, Peale hoped the “grandeur of this Skeleton when compleated” would “produce” a presidential visit to the museum to witness the monument Peale had “preserved, and saved to this Country,”<sup>154</sup> especially because this fully “actual” figure would transcend Jefferson’s “bespeaking” bones, and the estimates they prompted, to become a *speaking* skeleton:

...the Labour of making up *one* from the Bones of *Many*, would have been immense & perhaps unsatisfactory. We have now found the remains of an animal, apparently unmixed with any other; whose structure will leave no room for false

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<sup>153</sup> In an interesting aside on the ways in which multiple layers of economic and private meaning attach to objects, Peale noted in his diary that during negotiations over the bones, Masten requested Peale’s gun. As this was a gift given to Peale’s then-deceased son, Peale refused to part with it “in remembrance of both my son & his friend” instead promising to purchase a new gun for Masten, *SPCWP*, II, 331.

<sup>154</sup> Peale to Thomas Jefferson, June 29 1801, *SPCWP*, II, 338.

conjectures – every Bone, Tooth, & Tusk will find its Counterpart, and when put together, as I think I shall be able, will speak for itself.<sup>155</sup>

This nearly realized image of essential structural integrity, with each part so perfectly fit to the others that “conjecture” was almost spatially repelled, seemed the apotheosis of monumentality, both as proof and commemorative product.

### An Illuminated Skeleton

In the winter of 1801, advertisements heralding the “SKELETON of this ANTIQUE WONDER of North America” began to appear in newspapers from Philadelphia to North Carolina. These notices, mainly composed by the Peales themselves, laud the exhibit as a foundational achievement for the nation, while explicitly positioning the Peales’ intervention as a correction or reparation of earlier encounters with America’s fossilized bones. In contrast to “the occasional discovery of various mutilated collections of similar bones,” Peale’s efforts had made the animal manifest: “C.W. Peale has been enabled *to bring into form*, the relics of animal which has so long excited the wonder and admiration of Europe and America,” a public letter to the American Philosophical Society proclaimed.<sup>156</sup> A notice in the Philadelphia *Aurora* in early January 1802 similarly praised Peale for arresting, even reversing, the mammoth’s disappearance and decomposition:

In another century the proofs of existence of such an animal as the Mammoth would have been totally lost. The sceptical part of mankind would have then called in question even the truth of the enormous size of the bones, which have

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<sup>155</sup> Peale to Robert Patterson, July 24, 1801, Philadelphia, *SPCWP*, II, 347.

<sup>156</sup> Peale, “Announcements to the Public of Peale’s ‘Mammoth,’” Philadelphia, Dec. 1801-Jan. 1802, *SPCWP*, II, 376-77. *Guide to Philadelphia Museum*, Philadelphia, 1804, *SPCWP*, II, 764. Emphasis added.

been found in various parts of this continent – while the lovers of fable and romance would have pictured to their imaginations a creature of ten-fold power, strength, and bulk to the real Mammoth. Thanks to the indefatigable exertions of Mr. Peale, who at an expence of 2000 dollars has, as it were, embodied the truth, brought to light, that which had lain in obscurity for ten thousand moons, and would have puzzled the naturalist for ten thousand to come.<sup>157</sup>

Standing grandly at the center of vast swathes of past and future time, the “real Mammoth” seems to inaugurate a new epistemological certainty, collapsing the spectrum of dis/belief and disarming both skepticism and the romantic imagination’s picture at either extreme with the “embodied truth.”

The Peales brought mammoth to light literally as well, as the museum and its new star were shown by lamplight each winter evening. The illuminated skeleton was even the scene of a dinner party for a dozen men in February 1802, during which the attendees overtly connected the physical magnitude of the bones to the greatness of the structures of the United States in toasts to the nation’s “arts and sciences,” “the American People,” and “the Constitution of the United States – May ‘its rib be as ribs of brass, and its backbone of molten iron.’”<sup>158</sup> These toasts are notable not just for their explicit identification of the state with the mammoth, but also for their rhetorical solidification of the previously inchoate matter into strikingly “durable materials.” Indeed, in the celebratory aftermath of the skeleton’s completion, the many long-simmering concerns over the bones’ physical state were explained away. According to Peale, reconstruction had even transfigured the damage in “those bones...broken by Persons who first began to drag them from their boggy bed” into helpful guidelines for piecing them back together.

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<sup>157</sup> “Mammoth,” *Aurora*, January 9, 1802, Peale, “Announcements to the Public of Peale’s Mammoth,” Philadelphia, Dec. 1801-Jan. 1802, *SPCWP*, II, 377.

<sup>158</sup> *Ibid.* The toasts to the mammoth were accompanied by more irreverent salutes to the “Ladies of Philadelphia – Ere their *naked beauties* proves as horrible as bare bones, may virtue behold them clothed in the garment of modesty.” Rembrandt and Rubens Peale’s 1802 tour of England with the second mammoth skeleton, September 1802 - June 1803, Sellers 156. Rembrandt Peale, *An Historical Disquisition*, *SPCWP*, II, 550.

This “fitting of a fracture” had “at last produced *a whole*, wonderful and pleasing,” Peale informed Sir Joseph Banks, president of the Royal Society of London, or as Rembrandt wrote in the dedication of his *Historical Disquisition*, the “permanent specimen” had become “a monument...of stupendous creation.”<sup>159</sup>

The *Historical Disquisition*, comprised of an extensive catalogue of the bones and a “Narrative” of their recovery, had its own place in the Mammoth Room of Peale’s museum: the entire text was displayed in “92 gilt frames, hung up in a convenient gallery for viewing.”<sup>160</sup> As Laura Rigal points out, this “democratic diffusion of the pamphlet” made the text accessible “to many eyes while preserving it from the wear and tear of human hands.” Visitors might assemble these discrete pieces of the narrative, like dispersed pieces of the skeleton itself, into a coherent whole, thus participating in an incorporative republican experience.<sup>161</sup> In this respect, the “collective object,” as Rigal describes the gallery, seems to anticipate the form of public monuments to come. Historian Kirk Savage argues that, as in the oversized text of the Gettysburg Address in Lincoln Memorial, a “monument creates an actual, if temporary, community of readers, who must obey a particular decorum: they must stand at a certain distance to see the text panels in their entirety,” much like the quartet of museum visitors portrayed in Peale’s

*The Artist in His Museum* (Figure 6). Furthermore, “if the nation is ordinarily

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<sup>159</sup> Jefferson, *Notes*, 154. C. Peale to Joseph Banks, June 22, 1802, Philadelphia, *SP*, II, 436. In fact, Peale later recalled “those of the least knowledge” had greater success at the “fitting of a fracture” than “the most expert anatomist”: Moses Williams, a slave who had spent his youth in the Peale household, “fitted pieces together by trying, [not] the most probable, but by the most improbable position, as the lookers-on believed. Yet he did more good in that way than any one among those employed in the work.” C. Peale, *Autobiography*, qtd. in Sellers, *Mr. Peale’s Museum*, 141-42. For more on Moses Williams, see Gwendolyn DuBois Shaw, “Moses Williams, Cutter of Profiles’: Silhouettes and African American Identity in the Early Republic,” *Proceedings of the American Philosophical Society* 149, no. 1, (2005): 22-39.

<sup>160</sup> Peale, *Guide to the Philadelphia Museum*, (Philadelphia, 1804), *SPCWP*, II, 764. Rigal, *American Manufactory*, 95.

<sup>161</sup> Rigal, *The American Manufactory*, 98. Rigal redefines the “mammoth frame” to include not only the exhibition texts of the “dismember[ed]” *Historical Disquisition* and the Exhumation along with the skeleton itself arguing the importance of “displacing any single object,” 95.

experienced in a diffuse, ever-shifting circulation of words and images, national monuments acquire authority by affixing certain words and images to particular places meant to be distinctive and permanent,” Savage writes.

Yet the relationship between text and monument, particularly within the early republic, is not quite so unidirectional. Some writers equated the two; Barton, predicting the eventual extinction of creatures like the opossum in North America, claimed that “future naturalists will only know these animals by their histories and pictures, which may be preserved, as we now know the *elephas mastodontus*, the megatheria, and other *lost* animals, by their bones.”<sup>162</sup> Others went farther, suggesting that lettered representation replaced or obviated symbolic edifices. North Carolinian congressman Nathaniel Macon declared in 1800 on the floor of the House of Representatives that, “Since the invention of types, monuments are good for nothing.” Macon was addressing the question of how to memorialize George Washington, a controversy that Savage contends was “as divisive as the Alien and Sedition Laws” had been in the preceding years. Federalists, who would quickly satirize the dinner party in the mammoth, were generally in favor of lavish memorials for George Washington while republican factions were more suspicious of monumental tribute and iconography, though this divide was not rigidly fixed.<sup>163</sup> For a proposed equestrian statue of the first president, Federalist John Jay, suggested that the bas reliefs of Washington’s victorious battle scenes should be

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<sup>162</sup>Barton, *Additional Facts, observations, and conjectures relative to the generation of the opossum of North-America*, (Philadelphia: Merritt, 1813): 19.

<sup>163</sup> The Federalist press was frequently critical of Jefferson’s natural history pursuits and the mammoth excavation in particular. See Samuel Ewing, “Satire on the Mammoth,” *The Port Folio*, February 20, 1802, *SPCWP*, II, 401-408, and Rigal, *An American Manufactory*, 92-94.

replaced with “simple image of a book inscribed ‘Life of Washington,’” with the inscribed instructions for the viewer to “read.”<sup>164</sup>

If anything, Rembrandt’s *Disquisition*, both in the nature of its display and its rhetorical style, provides further complications on these questions of historical representation. While Rigal deems the gilt-framed pamphlet a “manifestation of early national kitsch,” I suggest its position within the Mammoth Exhibition evinces a consistent attitude regarding the elevation of material objects as the primary proofs. Completed in July 1803, the *Disquisition* itself emerged from a fragmentary textual history. Rembrandt’s first account – “the first crude ideas from an imperfect examination” – had been published the previous fall, but the *Disquisition* was intended to have “a more methodical, satisfactory, and enlarged form,” particularly because of its “Narrative” centerpiece.<sup>165</sup> This retelling, which covered Peale’s first interaction with Masten through the end of the “strange and laborious campaign of three months” in the fall of 1801, wherein Peale returned to Masten’s farm to search for additional bones, brought a polished coherence to Peale’s diary fragments and Rembrandt’s own observations. Whereas the museum exhibition was supposed to have redeemed the “rash methods” of discovery, Rembrandt’s narrative reframes the underground experience altogether, from the futile, persistent confusion experienced by excavators, from Jefferson to Peale himself, into a heroic quest.<sup>166</sup> Given the museum circular’s

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<sup>164</sup> Savage, *Monument Wars*, 1, 34-37; “The Self-Made Monument: George Washington and the Fight to Erect a National Memorial,” *Winterthur Portfolio* 22, no. 4 (Winter 1987): 231.

<sup>165</sup> Rembrandt Peale wrote three essays on the subject of the mammoth: “A Short Account of the Behemoth or Mammoth,” (New York, 1802), which promised more detail in future on “this SUBTERRANEAN WONDER”; a second account written in England (1803), and finally *An Historical Disquisition* which expands on the 1802 essay and includes this “Narrative.”

<sup>166</sup> As historians have noted, “in contrast to the haphazard and unsystematic methods of previous attempts to collect fossils,” Peale employed “a variety of both modern and traditional mechanisms,” including pumps and the large wheel and bucket drainage system later notably depicted at the center of Peale’s



characterization of “fable and romance” as suspect modes of historiography, however, the overt presentation of his own text as an “immutable fact” or material relic appears cannily calculated.<sup>167</sup>

Rembrandt’s historical license is perhaps most conspicuous at the narrative’s climax, the final culmination of the Peale excavation, which reads as a quasi-origin parable not only for the “SUBTERRANEAN WONDER,” but for American history itself. After many difficult weeks, Peale’s team still had not located “those interesting parts, the want of which rendered it impossible to form the complete skeleton” – in particular, the mammoth’s lower jaw.<sup>168</sup> “Almost in despair at our failure,” and the company – its full complement of modern equipment and hired workers curiously, if temporarily, absent – “with very little spirit...mounted our horses,” resolving to make one last search. Although the excavation team remains geographically in the farmland along the Walkill and Hudson rivers, Rembrandt assures the reader that this final spot lies in a “thinly settled,” “rudely cultivated country.” This account strips away the more modern accouterments and details found in Peale’s diary notes on the same incident, which record the group setting out “with our Pump Takles Baggage &c. with a Waggon” and taking “some boards and Spirits from a store on our Way,” for example. Instead, Rembrandt’s account seems to transport the searchers to the time of the first European encounters with the North American wilderness – or even earlier, perhaps, to the time of the mammoth itself:

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*Exhumation of the Mastodon* (Figure 5), “as well as a large labor force to locate areas where the mastodon remains might be found and drain the marl pits and bogs.” Miller argues “in its planning, organization, and execution, Peale’s 1801 excavation of the two ‘mammoth’ skeletons represented a considerable feat and constituted one of the major scientific achievements of the early nineteenth century.” The term *mastodon* was not coined until 1806 by Georges Cuvier. Miller, Hart, *SP*, II, 312, 350, 357.

<sup>167</sup> R. Peale, *An Historical Disquisition*, 545.

<sup>168</sup> R. Peale, *An Historical Disquisition*, *SPCWP*, II, 544-545, 554-55.

It was impossible to resist the solemnity of the approach to this venerable spot...Here we fastened our horses, and followed our guide into the center of the morass, or rather marshy forest, where every step was taken on rotten timber and the spreading roots of tall trees, the luxuriant growth of a few years, half of which were tottering over our heads. Breathless silence had here taken her reign among unhealthy fogs, and nothing was heard but the fearful crash of some mouldering branch or towering beach.<sup>169</sup>

In this description, evidence of recent human changes to the land is minimized; the “venerable spot” appears overgrown with superabundant flora – a new New World. This evocation of the prehistoric past performs a similar rhetorical move to Jefferson’s reverie at Harper’s Ferry, seemingly placing the Peale team before recorded history, suggesting a chronological, founding primacy among American historical feats.

For Rembrandt, this defamiliarized, almost primordial landscape appears the ideal setting in which the team’s “last effort might be crowded with success.” The group poked long rods into the ground to feel for objects, and “in a very unexpected direction,” they “struck upon a large collection of bones, which were dug to and taken up with every possible care.” This collection, at long last, included:

...the great object of our pursuit, a complete UNDER JAW! After such a variety of labor and length of fruitless expectation, this success was extremely grateful to all parties, and the unconscious woods echoed with repeated huzzas, which could not have been more animated if every tree had participated in their joy. ‘Gracious God, what a jaw! how many animals have been crushed between it!’ was the exclamation of all...

The recovery of the missing piece of the mammoth skeleton makes for a triumphant and transformative moment, representing not only as the fulfillment of the quest, but a redemptive unification of the group and the environment’s desires, awareness. The appearance of the elusive lower jawbone dramatically rouses both “unconscious” nature

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<sup>169</sup> Peale, Diary, *SPCWP*, II, 365-66. R. Peale, *An Historical Disquisition*, *SPCWP*, II, 555-556.

and the men delving into it: the “breathless silence” of the uncommunicative ground is broken, and the “unhealthy fogs,” arising from rotting things and too much rum, are banished or forgotten (indeed, Rembrandt cheerfully reports that a celebratory “fresh supply of grog went round,” and the “hearty fellows,” who just a few lines earlier had been reduced to “languid workmen,” complete the search with “encreasing vigour”). This success ensured that in the “undisputed” skeleton, “nothing...is imaginary,” Rembrandt claimed.<sup>170</sup>

Yet even as Rembrandt made (and framed in guilt) these declarations of wholeness, the skeleton was technically incomplete. Some of the exhibited bones in the skeleton were in fact “artificial imitations,” fashioned out of wood and paper – much like the *Historical Disquisition* itself – and based on parts found earlier or elsewhere.<sup>171</sup>

Furthermore, the storied New York expedition had never turned up “the *summit* of the head, and the *end* of the tail,” which were “two very essential parts” in the elder Peale’s opinion.<sup>172</sup> These deficiencies irked Peale – indeed, only days before his confident missive to Banks, he had expressed regret to Jefferson at the skeleton’s incompleteness. Peale had received some large bones he hoped would “finish in some measure the great work of that enormous Skeleton,” but the fossils were found to correspond to an ox or buffalo-like animal, not a mammoth. By October of the same year, Peale had heard reports of yet another mammoth head found in Kentucky; with news of each newly discovered “relick,” Peale restlessly wished he “could explore & put the Bones together of several of them!” but he assured Jefferson, perhaps somewhat defensively, that “my

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<sup>170</sup> *SPCWP*, II, 556-57.

<sup>171</sup> R. Peale, *An Historical Disquisition*, *SPCWP*, II, 557.

<sup>172</sup> R. Peale, *An Historical Disquisition*, *SPCWP*, II, 557.

Skeleton is more complete than you have imagined by the accounts you have received – I will not cease my exertions to make it perfect.”<sup>173</sup>

Interestingly, Peale’s two most famous images of the mammoth do not show a “perfect” skeleton but rather seem to attest as much to the insubstantiality of these objects as their discovery and display. The *Exhumation of the Mastodon* (1805-08, Figure 5) grandly illustrates the 1801 excavation on Masten’s farm: Peale stands in the right foreground of the painting near the edge of the sunken marl pit, his right arm extended to the workers toiling in the ooze and his left hand holding a roll of paper showing his “draughts” of the mammoth bones. The “mastodon” itself, however, is barely pictured: a shirtless man standing just left of the massive wooden tripod holds a large bone aloft, one of the only pieces of the mastodon skeleton represented in the image. *The Artist in his Museum* (1822, Figure 6) shows Peale at the close of his career, welcoming the viewer into the main gallery of the Philadelphia museum. His stance somewhat recalls his earlier self-rendering in the *Exhumation* – his right arm is extended to draw attention to the objects of American natural history – this time lifting a curtain to reveal neat displays of stuffed birds and portraits of “highly distinguished” gentlemen. The curtain hides most of the figure of the erected mammoth skeleton, however, “as if to evoke the opaque bog out of which it had been exhumed,” in the words of art historian Wendy Bellion.<sup>174</sup> Though a woman in the background observes the skeleton with an expression of wonder or surprise, the viewer can only make out its heavy ribs and leg bones in the shadows, and the incomplete head and tail not visible at all. In the foreground, a broken jawbone and several large leg bones lie on the floor near Peale’s feet, unincorporated into any

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<sup>173</sup> Peale to Jefferson, June 10, 1802, Philadelphia, *SPCWP*, II, 434-435; Peale to Jefferson, Oct. 28, 1802, Philadelphia, *Ibid.*, 464-65; Peale to Jefferson, Dec. 12, 1802, Philadelphia, *Ibid.*, 471.

<sup>174</sup> Bellion, *Citizen Spectator*, 1.

meaningful structure. These two images proved to be arguably more enduring than Peale's museum or the "great animal monument" of the reconstructed skeleton itself, both of which were dismantled (and, in the case of the skeleton, presumed lost) by the mid-nineteenth century.<sup>175</sup>



Figure 5. Charles Willson Peale, *The Exhumation of the Mastodon*, 1808, Maryland Historical Society, Baltimore

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<sup>175</sup> In 1847, the remainder of Peale's museum collection was sold at a sheriff's sale to P.T. Barnum. The skeleton was long assumed to be lost in an 1851 fire, until a 1954 letter to the American Museum of Natural History arrived from Hessisches Landesmuseum in Darmstadt, Germany, asking for assistance in erecting the skeleton. The skeleton remains there today. Sellers, *Mr. Peale's Museum*, 309-10; see also "Lost," *The New Yorker*, Dec. 25, 1954: "During the recent war, the roof of the museum was damaged; rain fell upon the mastodon, and now, in the peeling paper tusks, one can dimly read scraps of Hessian political broadsides of the eighteen-fifties. Otherwise, the mastodon is in excellent shape and, once it has been remounted, should last well into the next Ice Age," 13-15.



Figure 6. Charles Willson Peale, *The Artist in His Museum*, 1822, Pennsylvania Academy of Fine Arts, Philadelphia

## CHAPTER IV

### Winding Passages and Narrative Cavities: Early U.S. Representations of Underground Space

*The basis of all this region is limestone; a substance that eminently abounds in rifts and cavities. These, by the gradual decay of their cementing parts, frequently make their appearance in spots where they might have been least expected. My attention has often been excited by the hollow sound which was produced by my casual footsteps, and which shewed me that I trod upon the roof of caverns.*

— Edgar Huntly; or, *Memoirs of a Sleep-walker* (22)

Charles Brocken Brown's *Edgar Huntly; or, Memoirs of a Sleep-walker* is a novel riddled with narrative and geographical cavities. Edgar, whose letters make up most of the novel, spends much of it underground in the labyrinthine limestone caverns of Pennsylvania: first in pursuit of the mysterious Clithero, then unconsciously retracing Clithero's steps into the same "subterranean retreats" in "a freak of Noctambulation." Even as he tries to "unravel this darksome maze" of rocky, "winding passages" and "vast and irregular" caves, Edgar himself is "tottering on the verge of dissolution," abandoning not only normative narrative paths – the resolution of Waldegrave's murder, a marriage to Waldegrave's sister – but conventional narrativity itself: Edgar repeatedly expresses doubts throughout his tale that its "incidents...can be recalled and arranged without indistinctness and confusion." As literary scholars have pointed out, gaps in the story's progress reflect holes in Edgar's distressed memory – perhaps most significantly at the midpoint of the novel, when he begs the reader (and his just-jilted fiancée) that "thou

must permit me to pause” before he describes “my awaking in the chambers of the hills,” with “all remembrance of my journey hither...lost.”<sup>176</sup>

The novel’s lengthy underground passages have baffled many readers; as Elizabeth Maddox Dillon notes, “the detailed descriptions of the fantastic geography – darkened caves...twisting tunnels...fill page upon page of the novel.” Edgar, “immersed in the dunnest obscurity,” crawls on “hands as well as feet,” teeters on the “verge of a precipice,” clammers down “an abrupt descent,” all the while relating “the length and difficulties of my way.” This “bizarre and tortuous” – some even say *torturous* – narration leads the reader to perhaps share Edgar’s “fear that I should be involved in a maze, and should be disabled from returning.” As Dana Luciano writes, “even Edgar’s sentences sleepwalk.”<sup>177</sup> Luciano offers that “the point of *Edgar Huntly* may finally be that there scarcely is one” – that Edgar’s meandering and Brown’s punishing syntax are most importantly an author’s demonstration of the ill effects of the novel on the American mind and body. The reader herself is kept “in that state to which the frame is reduced by blows of a club, mercilessly and endlessly repeated” – the very condition in which Edgar find himself after his fall into the cave-pit.”

Yet *Edgar Huntly*’s “subterranean adventures,” are not as singular (or singularly incoherent) as they have appeared to these critics. Indeed, this “series of adventures, growing out of the condition of our country,” as Brown famously declares in the novel’s preface, reads as a typical – if lengthy – description of early republicans’ experiences of

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<sup>176</sup> Charles Brockden Brown, *Edgar Huntly*, 6, 123, 156, 159, 236, 250. Elizabeth Maddox Dillon, *Gender of Freedom: Fictions of Liberalism and the Literary Public Sphere*, 161-162. Justine Murison, “The Tyranny of Sleep: Somnambulism, Moral Citizenship, and Charles Brockden Brown’s *Edgar Huntly*,” *Early American Literature*, vol. 44, No.2, 257.

<sup>177</sup> Discussions of *Edgar Huntly* rarely fail to mention its status as something of a “literary failure.” Dillon, *Gender of Freedom*, 162-163. Dana Luciano writes that Edgar, as narrator “tortures both [himself and the reader] nearly to death,” “Perverse Nature: *Edgar Huntly* and the Novel’s Reproductive Disorders,” *American Literature*, Vol. 70, No. 1, March 1998, 2, 21, 22.



the *literal* continental interior: disorienting, inhospitable spaces beneath the surface of the known world. These accounts – in which the observing body itself is enclosed within a strange and shifting interior – provide a critical venue for readers of early U.S. literature to understand how the early national spatial imagination was shaped by subsurface environments as much as surface ones. As scholars like Hallock and Brückner have shown, the description of the physical spaces of the United States was widely and explicitly prioritized by American naturalists and writers. Brückner, examining geographic writing as literary practice in eighteenth-century America, describes the emergence of the surveyed self or “geodetic identity,” dependent on being able to locate oneself in a “permanent and easily accessible frame of reference.” Writers frequently employed the style and “script of a plat” in their “plotting” of land and of narrative.”<sup>178</sup>

Yet caverns, sinks, and other underground hollows complicate and expose the limitations of this plotting. As Samuel Williams wrote to the American Academy of Arts and Sciences in Boston in 1783, “much the largest part of the contents of the earth, will always remain hidden from our view, and beyond the reach of our knowledge,” but “we have, however, penetrated far enough below its surface to find” that “instead of being a perfect solid, the earth is of a *cavernous structure*; containing various pits, holes, and caverns...below its surface, in every country, and in almost every place.”<sup>179</sup> These deep and almost rhizomatic spaces engender a distinct early national speleological discourse in which plotting and “penetration” as models for discovery – models which Edgar

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<sup>178</sup> Brückner, *The Geographic Revolution*, 3-15, 37-40. Hallock, *From the Fallen Tree*, 6-17, 30-31.

<sup>179</sup> Samuel Williams, “Observations and Conjectures on the Earthquakes of New-England,” *Memoirs of the American Academy of Arts and Sciences* 1 (1783), 298.

frequently, if futilely, cites – go awry.<sup>180</sup> In state and local histories and travel accounts written among friends and academic societies, the spatial perceptions and practices of the surface – that is, the empirical and rational *place*-making apparatuses of expanding early national settlement: measurements, directions, even a logical progression of time – are confounded and disrupted when brought to bear on subjects “incompatible with order and coherence.” As Americans attempted to access and document these spaces, writers’ representational and syntactical difficulties register the extremity and bewilderment of subsurface observations, producing uncertainly legible sub-geographies and disjointed memoirs of subterranean experience which seem to “overleap...the bars of time and space,” in the words of the disoriented Edgar.<sup>181</sup> At the same time, Americans’ fragmentary subterranean accounts attest to experiential knowledge that cannot be registered in surface plots/plats. More than chaotic or punishing zones for observers (or readers), underground spaces fundamentally suggest and shape alternative possibilities for conceptions of national space, while allowing for representations of what we might call ‘sub-geodetic’ identities: the multiple versions of the self which meander beneath and break through the surface, as Edgar’s do.

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<sup>180</sup>Trying to track Waldegrave’s killer, Edgar “once more exercised my penetration and my zeal in pursuit of his assassin,” (8) and explicating Clithero’s odd behavior “demands penetration into the recesses of his soul”; Edgar is mostly unable to solve either mystery (14); Brown, *Edgar Huntly*, 5. For the social construction of space, see Henri Lefebvre, *The Production of Space*, trans. Donald-Nicholson Smith, (Cambridge, Mass.: Blackwell, 1991).

<sup>181</sup>Brown, *Edgar Huntly*, 229.

## Underground Geographies

When Edgar Huntly awakens “upon a rugged surface and immersed in palpable obscurity,” he is unable to determine his location. Though he has earlier professed himself to be an enthusiastic explorer of underground spaces, having “industriously sought out” many of the region’s caverns, those had been “chambers, more or less spacious, into which twi-light was at least admitted.” Here, however, “the utter darkness disabled me from comparing directions and distances” and “my sight availed nothing to the knowledge of my condition.” His “other instruments” are equally stymied, providing contradictory, even nonsensical evidence. He hears “an unequal and varying echo, sometimes near and sometimes distant, sometimes dying away and sometimes swelling into loudness.” Well aware of the physical underpinnings of such phenomena, “that sound is reflected according to the distance and relative positions of the substances from which it is repelled,” he yells, but the “echoes were sent back to me in broken and confused sounds and from above.” These scattered aural perceptions suggest the contours of “spacious halls and winding passages,” but this information seems “incompatible” with that provided by Edgar’s other senses: “if my hands were true,” he concluded, he was actually “immured between walls” with no exit.<sup>182</sup>

Brückner has suggested that Edgar’s incapacity for legible plotting – in both the geodetic and narrative sense – in part arises from his lack of a republican geographic education. Unlike Charles Brockden Brown, who was schooled in geography textbooks and in fact harbored a longstanding “obsession with geographic writing,” Brown’s protagonist “suffers from a Romantic European education” supplied by his English

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<sup>182</sup> Brown, *Edgar Huntly*, 96, 154-155.

mentor, leading to an aesthetic rather than geographic reading of the world. But while Edgar claims early in the novel that “many of romantic structure...within the precincts of Norwalk” were “dear to my youthful imagination,” he is not without what Brückner calls “geographic feeling.” Even in the complete darkness of the cave, Edgar reports that he “endeavoured to preserve a vivid conception of the way which I had already passed, and to keep the images of the left, and right-hand wall, and the gulf, in due succession in my memory,” creating a kind of eidetic map of the surrounding space.<sup>183</sup>

Indeed, contemporary accounts of early national attempts to map underground spaces suggest that Edgar’s difficulties are prompted by a geographic sensibility, rather than an absence of one. The imposition of surface methods of spatial observation and description onto strangely shaped, often lightless, and frequently hazardous caverns and passages produced disorienting underground geographies which might be inserted seamlessly into Brown’s fictional subterranean forays. Jeremy Belknap admits at the beginning of his chapter on “Caverns, Stones, Fossils, and Minerals” in *The History of New Hampshire* that “this chapter must be extremely imperfect, as many parts of the country are yet unexplored; and of those which are known the knowledge, is mostly confined to the surface and its vegetations.”<sup>184</sup>

This “confinement” of knowledge to aboveground surfaces especially evident in a description of a cavern in Chester, New Hampshire by Peter French, whom Belknap quotes at length. This cave is known as “*the Devil’s den*”; concerning which, many

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<sup>183</sup> Brückner details Charles Brockden Brown’s vital interest in “issues relating to the techniques of geographic representation,” during and increasingly after his career as a fiction writer: interpreting geographic data for various magazines (some of which he edited, like the *Literary Magazine*, 1803-07) and writing essays on the subject, as well as an unpublished (and now lost) thousand-page manuscript on *A System of General Geography* (1809); *The Geographic Revolution in Early America*, 177, 186-88, 199. Brown, *Edgar Huntly*, 97.

<sup>184</sup> Jeremy Belknap, *History of New Hampshire*, volume 3 (Boston 1792), 188-191.

frightful stories are told, to increase the terrors of the evening, among the children of the neighboring villages,” French reported, noting that he had personally “observed the eyes of men assume a peculiar brightness, while recounting the imaginary dangers which they had there fortunately *escaped*.” This den is a space which resists and subverts empirical analysis: though French is somewhat dismissive of these fanciful local tales, his own catalogue of the various heights, widths, lengths of the cave’s passages and chambers becomes almost as irrational, as the spaces described are asymptotically “lost irregularly among the rocks”:

This entrance is about six feet long; it then contracts its height to two feet and a half, and displays its breadth horizontally on the right, fifteen feet; where it is irregularly lost among the contiguous rocks. This form of the cavity continues about ten feet; when it suddenly becomes about eight feet high, and three wide; the sides nearly perpendicular, continuing thus about *nine feet*. In the midway of which, on the same plane, and nearly at right angles on the left, is an aperture of five feet high and four feet wide, which continues ten or twelve feet, where it is lost irregularly among the rocks.

For the reader, this collection of measurements is not unlike the cacophony of echoes which bewilders Edgar, giving the information of the “distance and relative positions of the substances,” but in an unusable format. Rather than guiding a reader’s imagined or actual steps through a particular place, French’s description gives the impression of an unstably configured space which “suddenly” changes and “contracts” as the subject moves through it.<sup>185</sup>

Thomas Jefferson’s account of Madison’s Cave in his *Notes on the State of Virginia*, one of the most well-known instances of early U.S. speleological description, further illustrates the challenges of mapping these subsurface spaces. Like the Norwalk of *Edgar Huntly*, the Blue Ridge Mountain region of Virginia is “lime-stone country,” in

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<sup>185</sup> Belknap, *The History of New Hampshire*, 188-190.

which “there are many caverns of very considerable extent,” Jefferson writes. Madison’s Cave, one of the larger examples in the area, “extends into the earth about 300 feet, branching into subordinate caverns, sometimes ascending a little, but more generally descending, and at length terminates, in two different places, at basons of water of unknown extent.”<sup>186</sup> An “eye-draught” of Madison’s Cave (Figure 7) is one of only two images within the entire text of *Notes*.

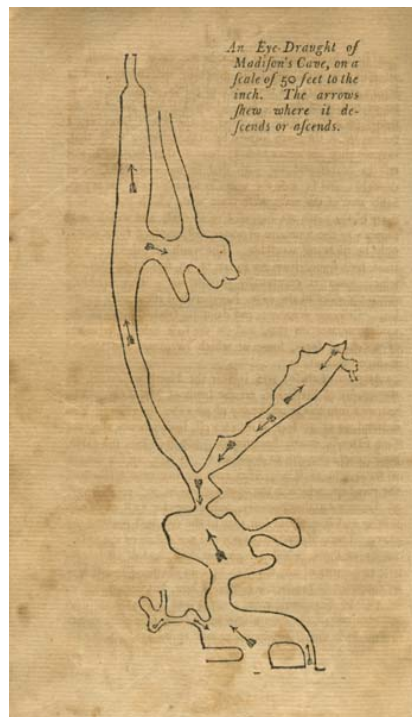


Figure 7. Thomas Jefferson, “An Eye-Draught of Madison's Cave,” *Notes on the State of Virginia*, 1782<sup>187</sup>

The inclusion of this sparsely rendered illustration may strike the reader as a curious choice, though as Brückner has shown, *Notes* frequently points to “the map as a writing system superior to the English language and conventional literary forms,” especially for the expression of geographic space. Jefferson begins his first query with a “recitation” of

<sup>186</sup> Thomas Jefferson, *Notes on the State of Virginia*, 21-22.

<sup>187</sup> This work is the property of the University of North Carolina at Chapel Hill. It may be used freely by individuals for research, teaching and personal use as long as this statement of availability is included in the text.

the state's boundaries as well as referring the reader to "Fry and Jefferson's map of Virginia" and Lewis Evans's "analysis of his map of America" to understand the "particular geography" of the region's mountains.<sup>188</sup>

Yet as other scholars have noted, the map of Madison's Cave is something of a "graphic riddle." Jefferson claims that his "arrows shew where it descends or ascends," but he gives no hint which arrows signify which direction. The outline of the cavern gaps open at several points, but Jefferson has not labeled these apertures; they might indicate entrances, or the "basons of water of unknown extent," or other features entirely. Noting that this cryptic depiction falls between Jefferson's "celebrated accounts of Virginia's Natural Bridge and the sublime, mountainous landscape" of Harpers Ferry, Douglas Anderson argues "this simple engraving seems especially remote from the geological spectacle Jefferson associates with those singular places" – it is "a strangely indeterminate interior...which this compulsive explainer elects to leave unexplained."<sup>189</sup> The assumption that Jefferson could have created a more legible map if he had wished seems to beg a resolution for the troubled directionality of the "draught" itself. Indeed, Anderson goes on to argue that this "indecipherable" gap in the text must signify the unresolved racial and political feelings plaguing the writer's (and his state's) moral and "psychological underworld." While this interpretation suggests an intriguing social-gothic sensibility for Jefferson's text, similar gaps left by other early U.S. writers would seem to caution against this automatic conflation of physical interiors with particular

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<sup>188</sup> The first map cited, *Map of the Most Inhabited Part of Virginia* (1753), was created by Jefferson's father; the second text is Lewis Evans's manual *Geographical, Historical, Political, Philosophical and Mechanical Essays* (1755). Brückner, *The Geographic Revolution*, 132. Jefferson, Notes, 18.

<sup>189</sup> Douglas Anderson, "Subterranean Virginia: The Ethical Poetics of Thomas Jefferson," *Eighteenth-Century Studies*, Vol. 33, No. 2, (Winter 2000), 238, 247.

psychological interiorities.<sup>190</sup> Positing the riddle of Madison's Cave primarily as a representation of the societal and personal unconscious precludes questions about the inscrutability of the cavern itself: why and how did this space resist the "eye's draught"?

Early readers of *Notes* were also at times bewildered by Jefferson's occasional geographic imprecision, particularly for what Anderson calls "subterraneous Virginia." Calvin Jones, a physician and former mayor of Raleigh, North Carolina, attempted to visit Madison's Cave in 1815 – like many readers of *Notes*, he was "attracted" to the spot "by Mr. Jefferson's description of it," but unlike the Natural Bridge and Harpers Ferry which he had already visited, Jones "had much difficulty in obtaining directions where to find it, other than those contained in the Notes. Maps of Virginia I could no where meet with, though I made diligent enquiry, except the old one of Fry and Jeffreys [*sic*]" which was drafted over sixty years prior. It was not until he came within twenty miles of the cave, Jones wrote to his friend, that he could "ascertain its place," and by then he had become distracted by reports of another cave nearby, reportedly "so far surpassing [Madison's Cave] in extent and grandeur that Madison's had ceased to be an object of curiosity." After imparting detailed directions on how to reach this remarkable cave, Jones provides his friend with a "Map with Index" (Figure 8) of the cave itself, showing "the outlines of its course and apartments," and the "letters in the plan will be referred to in the course of our route," which he proceeds to narrate.<sup>191</sup>

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<sup>190</sup>Teresa Goddu notes that given America's "seeming lack of history and its Puritan heritage, the American gothic, it has been argued, takes a turn inward... toward the psyche and hidden blackness of the American soul," *Gothic America: Narrative, History, and Nation*, (Columbia University Press: 1997), 9.

<sup>191</sup> Calvin Jones, "A description of Weir's Cave, in Augusta County, Virginia, in a letter from General Calvin Jones to Mr. \*\*\*\*\* in North-Carolina communicated to the editor of the Star, Raleigh, North Carolina," (Albany, N.Y.), 1815, 4. Visitors to Weir's Cave were charged 50 cents by the "proprietor" as the popularity of subterranean excursions grew.



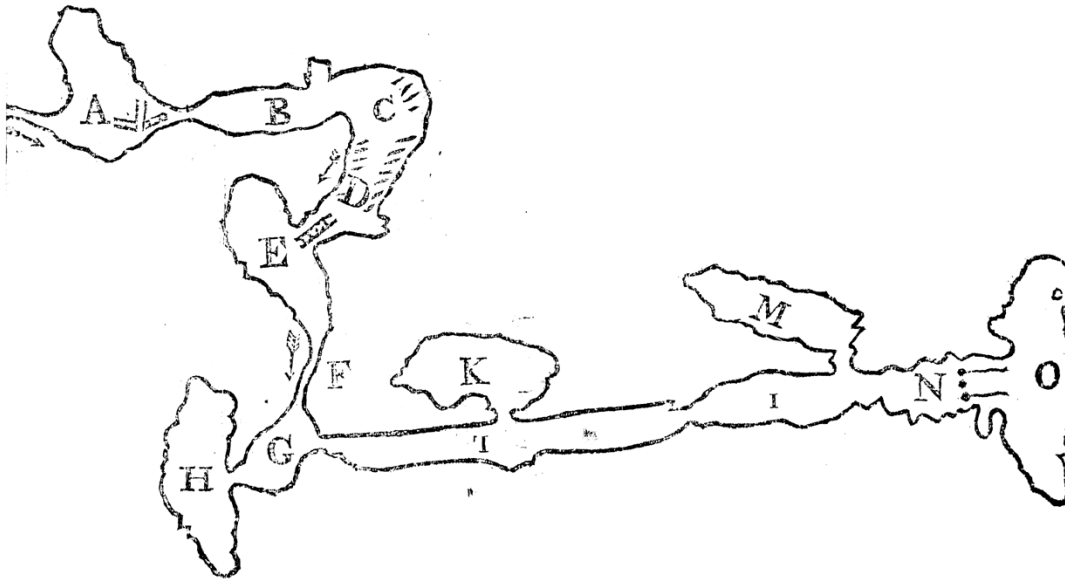


Figure 8. Calvin Jones, "Map with Index" of Wier's Cave, Virginia, 1815

But while Jones aspires to a more accessible underground cartography than Jefferson, even conscientiously noting that “the arrows mark the decent [*sic*] in places where it is most considerable” on his map, the course of “the curious explorer” through the cave appears dauntingly labyrinthine: “you grope through a narrow passage until you reach the *Anti-chamber* (A)...on the left is a recess difficult to traverse on account of the huge, misshapened rocks which are every where thrown rudely about it...you enter a narrow passage, creep into one place and incline your body obliquely to the left between two sheets of rock.” Letter F on the map marks a passage “which was for some time the boundary of the discoveries within” the cave. Beyond this point, some of the whimsical names of the chambers (“Washington’s Hall,” “Lady Washington’s Drawing Room”) become decidedly less refined: at letter N, “you come to the Wilderness (N), rough and irregular below, on the sides and above,” and “in one place an immense mass of rocks hangs so loosely over you, so apparently without support, that it seems to threaten you with instant annihilation.”

Especially through this rougher, more recently discovered portion of the cave, “the way...is steep, narrow, and difficult,” and Jones’s pronoun for the explorer briefly shifts, as if he is no longer addressing a friend but describing a figure increasingly distant and cut off from the familiar world:

He must creep on all-fours, and on account of its descent must go backwards. He is covered with mud, fatigued with his posture and exertions, and it is well if his head and back escape a rude contact with the rough stones above him. At length he regains his feet; looks back upon the narrow aperture by which he is entered, reflects that he almost a quarter of a mile from the regions of upper air, and feels himself entombed.<sup>192</sup>

Furthermore, even though this grave-like space is graphically delineated, it is still positioned indeterminately within Virginia’s geography, disconnected from meaningful reference points. Certain parts of Wier’s Cave could not be very far from Madison’s Cave, Jones guessed, and he imagined an experiment by which “I should have attempted to discover a communication between them.” He had been told of “the remarkable effect” that an “explosion of a pistol produces in some parts of Wier’s cave”: like the echoes which confused Edgar, “the sound is astonishingly loud, and is prolonged and echoed back from distant recesses; and after a considerable silence it is once again returned when you have supposed it is exhausted.” Jones thought that perhaps “by firing a musket in one cave, while the report was listened for in the other,” the spatial relationship between the two cavities might be discerned, though his own depiction of the ways in which the contours of the cave splinter both sounds and the explorer’s senses cast doubt upon the success of this plan. Jones closes his letter to his friend with the hope that “my subterranean excursions” would “excite your curiosity sufficiently to induce you to make this place a visit,” though he admits that “in following me I fear you will share more of

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<sup>192</sup> Jones, “A description of Wier’s Cave,” 6.

the fatigues than pleasures.”<sup>193</sup> This equivocal conclusion – part invitation, part warning – signals both the cave’s spatial complexities and the irreproducible, individuated nature of experiences produced within.

### Untimely Memoirs

Nowhere in the novel are Edgar’s troubles with narrative ordering more conspicuous than the “tumult and confusion” of his underground ruminations. Attempting to reconcile his mysterious condition with a logical sequence of events, he “endeavoured to recall the past, but the past was too much in contradiction with the present, and my intellect was too much shattered...to allow me accurately to review it.” Unaware that he has sleepwalked into his current predicament, he feels as though he is in a “wakeful dream,” as “the images of the past occurred in capricious combinations” in his mind. Edgar partly attributes his disorientation to his physical pain and exhaustion, but his sense of alienation from a normal chronology seems an essential part of his subterranean situation. He declares “there is no standard by which time can be measured, but the succession of our thoughts, and the changes that take place in the external world. From the latter I was totally excluded. The former made the lapse of some hours appear like the tediousness of weeks and months.”<sup>194</sup>

This warped sense of time – a telescoping temporality without a fixed reference point – seems to undermine what Justine Murison calls “the generic contract” of a text which claims, in its subtitle, to be a “memoir.” As Murison points out, this multivalent

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<sup>193</sup> Ibid., 8.

<sup>194</sup> *Edgar Huntly*, 153-155.

genre in the eighteenth century encompassed medical and scientific investigations, official histories, spiritual autobiographies, and even “new maps,” but was nevertheless united by “a claim to truth implicit in observing, experiencing, and recording events.” Brown’s subtitle, “Memoirs of a Sleepwalker,” “calls explicit attention to the logical relationship between memory and first-person narrative only to undercut the trust implied in that relationship,” Murison writes.<sup>195</sup> But the subtitle also links *Edgar Huntly* to early U.S. natural history “memoirs” which attest to unstable and disorganized relationships between events of the “external world” and subterranean time-scapes. While it was increasingly conventional at the end of the 18<sup>th</sup> century, particularly among transatlantic scientific circles, to draw upon “the contents of the earth” in support of an “ever-expansive concept of earthly time,” early U.S. descriptions of underground evidence of North America’s ancient past are associated with present volatility and upheaval.<sup>196</sup> In these accounts published in local histories and journals of scientific societies like the *Memoirs* of the American Academy of Arts and Sciences, subterranean “images of the past” seem to erupt both at the earth’s surface and in the midst of logical chronologies.

Benjamin Lincoln, a general in the Continental army, described several places in which subsurface evidence indicated “that this earth, since its formation, had met with great changes.” In Virginia, Lincoln observed strata of shells and earth in the banks of the James and York rivers which suggested “that the shores, now covered with the tallest cedars and most luxuriant plants, were once washed by the ocean.” While in Carlisle,

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<sup>195</sup> As Murison notes, many of Brown’s fictional works are titled or subtitled “memoirs,” which may have been intended to “call attention to the fissures in the genre,” “Tyranny of Sleep,” 257-258.

<sup>196</sup> In the latter half of the eighteenth-century, explanations for these geological changes were in flux and under debate. James Hutton’s influential *Theory of the Earth* was circulated and published 1785-1795 (Edinburgh), describing geological forces which had shaped (and were still shaping) the earth: the earth’s heated core, erosion, volcanic activity. Hutton’s work, and the American texts cited here, predate the formal expression of “uniformitarianism,” the basis of “modern geology,” by several decades, however. William Coleman, *Biology in the Nineteenth Century*, (Cambridge, 1977), 62-63.

Pennsylvania, he “went to view a subterraneous passage,” though he only traveled about 250 feet, or about halfway through, before it became “smaller, and more difficult to follow, and finding myself exceedingly chilled, (which cost me one of the sickest night I ever suffered) I gave up the pursuit.” In the course of his abbreviated exploration, however, Lincoln speculated that the winding passage was once a water course or river bed because of its smoothly indented rocks. Despite the appearance that the passage had formed at some “far distant” time, however, it was also the site of a recent and unsettling event. Only three years before, Lincoln reported, local residents had been startled by the river overflowing its banks, and it was suspected that the powerful flood had “burst forth from the mountain,” as “the first effects of the water appeared within twenty feet” of the summit and had “cut a passage in the side of the mountain” nearly seven or eight feet deep. This “sudden descent of a very large current of water,” occurring so improbably “after but a small rain,” left an absurdly rearranged surface world in its wake: the torrent “carried off all the fences, and came upon the floors of some of the houses,” and “its impetuosity was so great” that “one rock, of a very considerable weight, was thrown into the crotch of a tree, twelve feet from the ground, in which it remained for some time.”<sup>197</sup> While not everyone believed that floodwaters originated in the depths of the mountain (David Rittenhouse, whom Lincoln consulted on the subject, disagreed), “sudden” disturbances in the earth prompted similar conclusions across the early republic.

William Bartram, for example, recounted an “extraordinary eruption” in his *Travels* which “lately formed” a large sinkhole in Florida. This “very wonderful” event

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<sup>197</sup> Benjamin Lincoln, “An Account of Several Strata of Earth and Shells on the Banks of York-River, in Virginia; Of a Subterraneous Passage, and the Sudden Descent of a Very Large Current of Water from a Mountain, near Carlisle; Of a Remarkably Large Spring near Reading, in Pennsylvania; And Also of Several Remarkable Springs in the States of Pennsylvania and Virginia,” *Memoirs*, American Academy of Arts and Sciences 1, (1783), 372-376.

had been described to Bartram by a trader who had been “on a sudden...astonished by an inexpressible rushing noise, like a mighty hurricane or thunder storm; and looking round, he saw the earth overflowed by torrents of water...attended with a terrific noise and tremor of the earth.” To both this eyewitness and Bartram, the commotion seemed to belong to a prehistoric era: the trader “concluded...that the fountains of the deep were again broken up, and that an universal deluge had commenced,” while Bartram guessed that an “ancient subterranean channel...from some hidden event or cause had been choaked up.” And as in the sudden Carlisle flood, the eruption seemed to effect not only a redistribution of surface and subsurface, but also a realignment of topographical history. Though the water “finally withdrew itself beneath the common surface of the earth” again, it left a “dry bed of the river...generally four, five, and six feet below the surface of the land” exposed; these “perpendicular, ragged banks” displayed colorful geological strata, which Bartram mused “will, I suppose, remain for ages.”<sup>198</sup>

Around the same time that Lincoln and Bartram documented these unexpected fractures in the Southeast and Mid-Atlantic, the AAAS published several accounts of “very violent eruptions” in New England, attributed to recent earthquakes or even volcanic explosions. New Englanders wrote of descending into the earth to search for underground clues for these “shocks” – one AAAS correspondent “descended to the bottom of this (truly hideous) pit” in a New Hampshire mountain to see “that the rocks, in many places, were turned to cinders.”<sup>199</sup> Samuel Williams, the Harvard professor of

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<sup>198</sup> Bartram, *Travels*, 204-205. Amidst growing awareness of geological time, biblical allusions were nevertheless very much in evidence as expressions of antiquity; for example, Calvin Jones reported that the “last scene” (letter O on the map) of Wier’s Cave was known as the “Garden of Eden,” “A Description of Wier’s Cave,” 8.

<sup>199</sup> Caleb Alexander, “An Account of Eruptions, and the present Appearances, in West-River Mountain. Caleb Alexander of Northfield to Mr. Caleb Gannett. Northfield, May 18, 1779,” *Memoirs of the American Academy of Arts and Sciences* 1 (1785): 316-317; see also Daniel Jones, “An Account of West-River

Mathematics and Natural Philosophy who compared accounts of “such concussions of nature” in the region from the earliest British American records through a recent “small earthquake” of November 29, 1783, declared, “I think we may lay it down as a *pretty certain fact*, that the earthquakes of *New-England* have been caused by something which has moved along under the surface of the country.”

This subsurface mysterious force, Williams argued, was “subterraneous vapours,” the result of “some grand fermentation...taking place in the bowels of the earth.” He imagined these vapors “fiercely driving along under the surface of the earth,” until they could “find or force for themselves a passage, where they may burst from their caverns, and discharge themselves into the open air.”<sup>200</sup> Certainly, Williams thought, this scenario would explain the disturbing “*violence* of any shocks we have had,” as “a very great force must be requisite to heave up, and cause a progressive swell in the surface of the earth, and this, perhaps, from some depth below.” Indeed, such swelling shifts were evident in the region following quakes in 1727 and 1755: “the surface of the earth...was considerably broken and changed,” while “great alternations were made in wells, ponds, fountains, and currents of water: some were dried up, others opened; new ones produced, and, in many, the kind, quality, and quantity of water was greatly changed.”<sup>201</sup> His archives also showed “the eruptions and effusions” associated with the region’s earthquakes “have also borne strong marks of subterraneous vapour”; after the mid-century earthquakes, “strong sulphereous smells were observed,” as well as “appearances

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Mountain, and the Appearance of there having been a Volcano in it. In a Letter from Daniel Jones, Esq; of Hinsdale, to the Rev. Joseph Willard. President of the University at Cambridge, V. Pres. A. A.,” *Memoirs of the American Academy of Arts and Sciences* 1 (1785): 312-315.

<sup>200</sup> Williams, 290, 293.

<sup>201</sup> Williams, “Observations and Conjectures,” 293-294.

of flame,” while apparent eruptions at three New England towns had thrown “large effusions of sand” into the air.

Intriguingly, by Williams’s reasoning, these “incredible alterations” in the earth’s surface not only evoked the earth’s ancient past, replicating those “great and furious eruptions” that took place “prior to all historical monuments and records,” they were actually caused by it. Williams proposed that certain geological strata acted as “fuel or conductors” to the underground vapor as it rushed through prehistoric passages, and suggested that “some particular stratum under the surface of the country...has served and will serve to direct the motion of the subterraneous vapour, from the places of its origin, to that of its grand final eruption.” Such pervasive veins of matter were not unusual, Williams claimed: “many countries are known to abound with, and to be distinguished by them,” citing the chalk and flint of France and England. Why should “*North-America*” be any less distinguished, he reasoned, pointing to topographical descriptions by American cartographers like Lewis Evans, who noted consistent “sets of strata, and in the same order...generally kept up” from the Appalachian mountains through the eastern seaboard.<sup>202</sup>

These “capricious” and ancient underground elements also had strange effects on living bodies, others observed. Writing to the AAAS in 1797, John Lathrop described “a curious article in natural history”: a recently dug well on Boston’s pier which “affords evidence, that the peninsula of Boston is now very different in its dimensions, from what it was many ages ago.” The newly revealed vertical stretch of earth displayed “several strata” which Lathrop listed in careful detail:

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<sup>202</sup> Ibid., 300.



- 1<sup>st</sup>. About 15 feet, consisting of the materials of the pier.  
 2<sup>nd</sup>. ----- 14 feet, consisting of black mud, clay, sand, and the heterogeneous substances which had been deposited by the sea.  
 3<sup>rd</sup>. ----- 4 feet and a half, consisting of a very black mud, intermixed with the unconsumed roots of marsh grass, shells and other marine productions.
- After passing this stratum, the workmen began to bore.
- 4<sup>th</sup>. ----- 30 feet of light blue clay.  
 5<sup>th</sup>. ----- 23 feet of clay mixed with sand.  
 6<sup>th</sup>. ----- 7 feet of hard and dark blue clay.  
 7<sup>th</sup>. ----- 3 feet of clay, stones and slate.<sup>203</sup>

Lathrop's catalog neatly recreates the descending layers for the reader, compacting and transcribing unfathomably long swathes of time into legible lines. This orderly "natural history" is conspicuously disrupted, however, by the "deleterious" effects of the subsurface space it describes. Though Lathrop concludes the list of strata with a description of how the workmen "broke through the crust" of the "last stratum," and the water "gushed up with great force" to fill the well, he abruptly skips back to the moment at which the workmen first "enter[ed] the third stratum," nearly 30 feet below the surface. At this point, Lathrop writes, the men "perceived an uncommon foetid smell. Faintness and difficulty of breathing succeeded, and to so great a degree, that they left the well, and could not be persuaded to go down again." The project's foreman, who had not witnessed the workers' distress, later went down in the well himself and was "at the bottom but a few minutes, before he was seen to fall, and remain without motion." Another man descended with a rope to secure around the body of the unconscious foreman, but he also succumbed, while a third man, "contrary to the advice of all present, went down, but no sooner reached the bottom, than he fell with the other two. There were

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<sup>203</sup> John Lathrop, "An Account of the Deleterious Effects of Mephitic Air, or Marsh Miasmata, Experienced by Three men, July 27, 1797. In a Well, on the Boston Pier," *Memoirs of the American Academy of Arts and Sciences* 2, Part 2, 81-84.

now three men, lying apparently dead on the bottom of the well.” Finally, Lathrop reports, an “experiment” was tried to “lessen the danger”: the group at the surface lowered “a common mat” on a rope into the well cavity, which they moved “very quick up and down,” and “the heavy mephitic air, was so mixed and diluted with the more pure air, in the upper part of the well, that the men who lay in a dying condition” began to revive, showing “in a little time... appearances of life, by moving their limbs.” One by one they were pulled up “from the horrible pit, in which they must have soon died, had not timely aid been afforded them.”<sup>204</sup>

This subterranean suspension of consciousness – and its reversal, culminating in the men’s return to the surface – resonates with reports circulating in the early nation of other underground bodies: animals found “wholly inclosed, and shut up from the air, and all appearance of food; and being taken alive, out of such situation.” In *The Natural and Civil History of Vermont*, Williams reported that living frogs had been unearthed in the course of various digging projects around the state: one from nine feet underground in 1790, and a great number “from five or six feet below the surface,” several years earlier during the revolutionary war, as the inhabitants of Castleton dug the foundations for a fort. These animals were “apparently inactive, supposed to be dead,” but “being exposed to the air, animation soon appeared, and they were found to be alive, and healthy.” An even “more remarkable instance” occurred near Burlington, Williams wrote:

In the year 1788, Samuel Lane, Esq. was digging a well near his house. At the depth of twenty five or thirty feet, from the surface of the earth, the labourers threw out with their shovels, something which they suspected to be groundnuts, or stones covered with earth. Upon examining these appearances, they were found to be frogs; to which the earth every where adhered. The examination was then made of the earth, in the well, where they were digging. A large number of frogs were found covered with the earth, and so numerous, that several of them were cut in

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<sup>204</sup> Lathrop, “An Account,” 83.

pieces by the spades of the workmen. Being exposed to air, they soon became active; but unable to endure the direct rays of the sun, the most of them perished.<sup>205</sup>

Accounts of “inactive” American animals enclosed in surprising – even, as some skeptics insisted, illogical – places were numerous in early republican natural histories; swallows, for example, were widely reported to winter underwater or in hollow cavities of tree trunks.<sup>206</sup> Indeed, some American naturalists believed this “torpid-state” was brought about by a specific environment rather than being a definitive trait of “*Species Lethargicae*,” as some European naturalists asserted. Benjamin Smith Barton, describing a mouse-like rodent colloquially known in Pennsylvania as a “seven-sleeper” because it was often found to “hibernate” underground, argued that “the torpid state of the animal appears to be merely an accidental circumstance, depending principally upon climate, and partly the specific purity of the air, in which the animal is placed.” A farmer had informed Barton that he frequently found the creatures “at the depth of eighteen inches or two feet under ground. . .always lower than the influence of the frost,” but like the buried frogs in New England – or even the men in the Boston well – the animal’s inert state was reversible and dependant on its submersion: “our little animal passes the winter season in a torpid state,” but when removed from the ground prematurely, they became active,

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<sup>205</sup> Samuel Williams, *The Natural and Civil History of Vermont*, (Walpole, New Hampshire) 1794, 126-128.

<sup>206</sup> Andrew Lewis notes that though the concept of swallow submersion dates back to Aristotle, the perpetuation and often credulous reception of swallow submersion stories following the revolution reflects the democratic “philosophical modesty” of American natural science, which was disinclined to reject any “facts” of eyewitness accounts, “A Democracy of Facts, An Empire of Reason: Swallow Submersion and Natural History in the Early American Republic.” *The William and Mary Quarterly*, 62:4 (2005), 668. For more examples of the many accounts of torpidity and swallow submersion, see: Samuel Dexter, “A Letter on the Retreat of House-Swallows in Winter,” *Memoirs of the American Academy of Arts and Sciences*, 1 (1785), 494-496; Mr. Packard, “A Letter on the Retreat of Swallows in Winter,” and Severyn J. Bruyn, “A Letter on the Retreat of Swallows, and the Torpid State of Certain Animals, in Winter,” in *Memoirs of the American Academy of Arts and Sciences*, Vol. 2, No. 1 (1793), 93-95 and 96-99, respectively.

though “stupid” and “very ‘awkward.’” In fact, Barton continued, these seven-sleepers were “abroad the whole winter” in other regions, just as “many of the same species of animals which become torpid in one country do not become so in another,” a “fact...very observable in the United States.”<sup>207</sup>

If the relatively shallow placement of the seven-sleepers could induce a seasonal torpor in an otherwise active animal, the deeper spaces in which the Vermont frogs were found seemed to have an even more pronounced and distortive effect, according to observers. For Williams, the solid stretch of earth between the slumbering animals and the rest of the living world was the determining piece of evidence:

From the depth of the earth, with which these frogs were covered, it cannot be doubted but that they must have been covered over in the earth, for many ages, or rather centuries...must have passed since they began to live, in such a situation; and had that situation continued, nothing appears, but that they would have lived for many centuries yet to come!<sup>208</sup>

The AAAS published similar surprising claims in the 1793 and 1804 volumes of its *Memoirs*. In another account of the Burlington frogs, Samuel Hitchcock wrote that he “was particular in my inquiry, whether there were no avenues, or cavities in the earth, leading or communicating with the river; through which the frogs might have passed,” but witnesses convinced him no such passages had been found, leading him to conclude that “how long those animals must have remained there, it is impossible to determine; but in all probability, they must have been in that inactive state, some hundred years.”<sup>209</sup>

David Andrews reported that he “discovered a substance about the size of a goose egg,”

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<sup>207</sup> Barton, “Some Account of an American species of Dipus, or Jerboa,” *Transactions of the American Philosophical Society*, Vol. 4 (Philadelphia, 1799) 121-122.

<sup>208</sup> Williams, *Natural and Civil History of Vermont*, 126-128.

<sup>209</sup> Samuel Hitchcock, “An Account of Frogs Found in the Earth,” *Memoirs of the American Academy of Arts and Sciences* 2, Part 1 (1793): 63-64.

while digging on his property, “which from its colour and consistence, we at first supposed to be a piece of iron ore.” After breaking the object open, however, Andrews was astonished to find that “its *nucleus* was a *mouse*, rounded into a compact form, which upon being removed from the shell, left a vacancy of the same dimensions as its size.” Though the mouse was “to all appearance dead,” Andrews it into the house and “placed it at a proper distance from the fire to obtain a gradual warmth,” after which, “some symptoms of returning life began soon to appear; after a little struggling, in a few minutes it was restored to a perfect living state, and ran off with activity.” Andrews assured his audience that in this case, too, “there was no appearance that the ground ever had been broken up, nor was there any communication from this substance with the external air, or surrounding earth. In short, we saw no reason to doubt that the mouse had been immured for a century.”<sup>210</sup>

On the one hand, these accounts follow a pattern in early national natural history, noted by other scholars, of the “discursive and epistemological practices of fact” which heavily relied on eyewitness testimony and sometimes lead to the proliferation of “admittedly strange” and seemingly preternatural explanations for unusual phenomena.<sup>211</sup> Andrews, for example, had “heard of the resuscitation of toads, dug from the earth in a similar situation,” before he discovered the buried mouse on his property and tried “making a similar experiment.” On the other hand, it is clear that these writers are not merely reprising earlier reports but also invoking contemporary discussions of the “plain

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<sup>210</sup>David Andrews and Oliver Fiske, “Account of the resuscitation of a Mouse, found in a torpid state, enclosed in a fossil substance. Communicated in a letter from Oliver Fiske, M.D. to Hon. Robert T. Paine, A.A.F.” *Memoirs of the American Academy of Arts and Sciences* 2, Part 2 (1804): 124-126. (Oliver Fiske of Worcester, Massachusetts, vouched for the David Andrews’s description of “the resuscitation of a Mouse, found in a torpid state, enclosed in a fossil substance.”)

<sup>211</sup> Lewis, *Democracy of Facts*, 14-17.

and evident marks and effects” of “very ancient subterraneous” geological history, as Williams wrote. His sources at the Onion River site had informed him that “appearances denote” that the frogs’ underground resting place “was once the bottom of a channel or lake,” because during the same excavation, workmen had discovered “the body of a tree eighteen or twenty inches in diameter; partly rotten” at a depth of forty feet below the surface of the ground, and “the probability is, that both the tree, and the frogs were once at the bottom of the channel of a river.” To Williams and others, “these appearances” are further evidence of the exotic subterranean metrics of time, so off-scale and out of alignment with the progressions of the surface world that buried bodies might “preserve the power of life from age to age!” as Williams marveled.<sup>212</sup>

Indeed, these living creatures among petrified, “partly rotten” forests seemed to suggest or necessitate alternative natural histories to accommodate them. In 1800, five years after his description of the seven-sleepers, Barton forwarded a letter to the APS which “records a curious fact, which appears to me worthy of preservation” – yet another living artifact discovered by laborers digging a mill-race along a branch of the Potomac River in Virginia. The letter’s author, a Colonel Bull, imparted that “the curiosity is this, that between the five and six feet under ground, chiefly a loamy, solid clay...one of the diggers discovered a blossom,” which was “the same kind of blue flower which grows on the surface of the ground adjacent.” Those flowers, however, were all faded at the time, and because the trench “contained timber of uncommon size,” it was believed that “the body of earth where the plant was found must have been formed perhaps some centuries”

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<sup>212</sup> Interestingly, Edgar Huntly, who “sometimes...imagined myself buried alive” when first awakening in the cave, seems to intuit the possibility of underground longevity: “methoughts I had fallen to seeming death and my friends had consigned me to the tomb, from which a resurrection was impossible. That in such a case, my limbs would have been confined to a coffin, and my coffin to grave, and that I should have been instantly suffocated, did not occur.” Brown, *Edgar Huntly*, 154-155.

past. Barton saw no reason to disagree, as “we have abundant proofs, that many species of animals are capable of subsisting, for a long time, in the *bowels* of the earth, though the *surface* of the earth appears to be, and no doubt it, the natural place of residence of these very animals.” The naturalist even posited that “perhaps many of those impressions of vegetables upon slate, free-stone, coal, and other stony matter, which are so abundantly diffused through the earth, are impressions of vegetables *which have passed through all the stages of their existence in the bowels of the earth.*”<sup>213</sup> These subterranean existences, adjacent to but physically separated from the flora and fauna above the surface, seemed to splinter logical taxonomies: how could plants or animals with identical features, but opposite modes of “existence” and apparently wildly disparate life-spans, be lodged together in the same entries in a system of classification?

### Unseasonable Occurrences

Staggering at the full import of his “acts performed in sleep” near the conclusion of the novel, Edgar reflects on the “disastrous and humiliating...state of man,” whose utter “blindness with regard to our own performances” dooms him to “misery and error.” Many scholarly readings of *Edgar Huntly*, both older and more recent, have taken their cues from the sentiment of this pronouncement, focusing on the psychological significance and narrative impact of sleepwalking within the text. Murison, for example, suggests the novel is a kind of “formal experiment” for Brown, an opportunity to “imagine beyond the limitations imposed by empirical observation: what would it be like

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<sup>213</sup>Colonel Bull and Benjamin Smith Barton, “Note concerning a Vegetable Found under Ground. In a Letter from Colonel Bull,” *Transactions of the American Philosophical Society*, Vol. 5 (Philadelphia, 1802), 160-161.

to narrate from the point of view from a mind and body that are asleep?” This experiment, of course, exposes the novel’s subtitle as an oxymoron: a sleepwalker’s memory, as Benjamin Rush lectured in 1797, was believed to be “in a state of complete annihilation, as if [it] had never existed, or were never to exist again.”<sup>214</sup> Edgar is essentially disabled from having any memory (or “memoirs”) of his sleepwalking; instead, his summary of the experience is expressed or mapped in terms of subsurface space:

Hurried on by phantoms too indistinct now to be recalled, I wandered from my chamber to the desert. I plunged into some unvisited cavern, and easily proceeded till I had reached the edge of a pit. There my step was deceived, and I tumbled headlong from the precipice. The fall bereaved me of sense, and I continued breathless and motionless during the remainder of the night and the ensuing day.

Indeed, sleepwalking is closely tied to characters’ subterranean experiences throughout the novel – long before Edgar’s own episode, the first glimpse the reader and Edgar get of “a sleeper” is Clithero “digging the earth,” an activity Edgar finds both “mysterious and obscure.” The next time Edgar observes the sleepwalking Clithero, the enigmatic figure is “swallowed up by the abysses of this grotto,” presaging Edgar’s own plunge into its “darksome recesses.” These subterranean meanderings, I suggest, replicate or stand in for somnambulation’s suspension of conscious subjectivity and its disruption of narrative coherence. As in other early national representations of American underground space, Brown’s Norwalk is ill suited to rational epistemologies and elucidation, filled with “rifts and cavities” which “frequently make their appearance in spots where they might have been least expected.” Like the “long, crooked, and unequal passages” described by

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<sup>214</sup> Benjamin Rush, *Benjamin Rush’s Lecture on the Mind*, Ed. Eric T. Carlson, Jeffrey L. Wollock, and Patricia S. Noel. Philadelphia, American Philosophical Society, 1981, 673, qtd. Murison, “Tyranny of Sleep,” 248, 257.



American naturalists, which seemed to “form communications between very distant parts of the earth” by “winding, meeting, crossing, and mixing with each other,” these fictional hollows model the novel’s bewilderingly non-linear – or perhaps *hyper*-linear – structure of crisscrossing causes, connections, and coincidences. These narrative lines, untraceable to the characters and to a similar extent, the reader, traverse the text and distribute objects, characters, and frontier violence, in unexpected and unreadable ways.<sup>215</sup>

The peculiar image of Clithero weeping “in the pit that he had dug” inaugurates the continuously unresolved puzzle of “wild and inexplicable” appearances within the novel, quickly supplanting the relatively straightforward mystery of Waldegrave’s murder. Edgar knows the mysterious figure could “not start from the bosom of the earth...he must have a name and terrestrial habitation,” yet he “seemed like one, whom an effort of will, without the exercise of locomotion, had transported hither.” And indeed, following this initial disruption of the ground’s surface, people and things appear conspicuously out of place. In the midst of his pursuit of Clithero through the Norwalk caverns and wilderness, Edgar is unexpectedly confronted with “the most unwelcome object that, at the time, could possibly occur” – a “grey Cougar.” This animal’s appearance strikes Edgar as surprising, even anachronistic: he relates that local hunters had “nearly banished animals of prey from these precincts,” and “of late I had met them so rarely” that he usually gave them no thought even in Norwalk’s “ruggedest and most solitary haunts.” It is only later at the Huntly farm, as he “reviewed the circumstances of my subterranean journey,” mentally tracing out “the different branches of this labyrinth,” that he abruptly “recalled what, if it had more seasonably occurred, would have taught me caution”: a farmer’s report of two panthers in his field, which had “received little

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<sup>215</sup> Brown, *Edgar Huntly*, 14, 20, 186, 268. Williams, “Observations and Conjectures,” 298.

credit from his neighbors; because a long time had elapsed since these animals were supposed to have been exiled from this district.”<sup>216</sup>

The most errant narrative element in the novel, of course, is Edgar himself. As he emerges into the open air after his first underground foray, Edgar is taken with the idea that his subterranean wanderings have “transported” him out of his own era and into an untouched new world, a space even more specifically pristine than the “western wilderness” invoked by Brown in his preface:

It was probable that human feet had never before gained this recess. . . The aboriginal inhabitants had no motives to lead them into caves like this, and ponder on the verge of such a precipice. Their successors were still less likely to have wandered hither. Since the birth of this continent, I was probably the first who had deviated thus remotely from the customary paths of men.<sup>217</sup>

This fantasy of virgin land is broken and belied by the sight of Clithero, the other individual who “deviated. . . from the customary paths,” in a “surprise so abrupt” that Edgar nearly falls “headlong into the abyss.” Yet this impression reoccurs, exaggerated and darkly distorted, when Edgar comes out of the cave after sleepwalking to find a group of Indians sleeping around a fire, a “spectacle” of “wonder and alarm.” Edgar’s community, the supposed “successors” of the Delaware, had “imagined ourselves at an inaccessible distance” from the native people of the region, relegating them to a far-off “former” time and/or location, much like the grey cougar. Observing the fireside figures, Edgar wonders despairingly, if somewhat obtusely:

Had some mysterious power snatched me from the earth, and cast me, in a moment, into the heart of the wilderness? Was I still in the vicinity of my paternal habitation, or was I thousands of miles distant? Were these permanent inhabitants of the region, or were they wanderers and robbers? While in the heart of the mountain I had entertained a vague belief that I was still within the precincts of

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<sup>216</sup> Brown, *Edgar Huntly*, 10, 14, 17, 118-119, 122-123, 159.

<sup>217</sup> *Ibid.*, 3, 99.

Norwalk. This opinion was shaken for a moment by the objects which I now beheld.<sup>218</sup>

This moment marks a significant shift in the narrative to many critics, who in recent years have presented persuasive readings of the ways in which *Edgar Huntly* depicts the formation of American identity against the early republic's dispossession of Native Americans and its construction of geo-political boundaries. Brückner and others suggest that the chaotically gruesome second half of the novel following Edgar's emergence is a function of the character's "moves outside the nation" and "off the map, into the dangerously uncharted territory of undescribed space," from which he must make (and murder) his way back to civilization. I suggest, however, that Edgar's profound sense of displacement here at the mouth of the cave, and indeed over the course of his violent trek home, may also be read in terms of representations of underground space in the early United States, which complicate the arbitration of the spatial categories of alien and native and disrupt historical narratives which might segregate visions of the continent's past from a "civilized" present.<sup>219</sup>

Edgar's out-of-placeness over the latter half of the novel arises from his travels not "off the map" but beneath it – that is, not in merely "uncharted" space, but space that is unchartable and which undermines (in a curiously literal sense) the frontier dichotomies of the known and unknown. Edgar confesses that "I scarcely knew what region of the globe I was placed"; his passage through the subterranean paths – which, as Samuel Williams and others reasoned, perhaps connected "very distant parts of the earth" – leaves him "equally in doubt, whether I was separated from my paternal abode by a

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<sup>218</sup> Ibid., 154, 163-164.

<sup>219</sup> Brückner, *The Geographic Revolution*, 197, see also Jared Gardner, *Master Plots: Race and the Founding of American Literature* (Baltimore: Johns Hopkins University Press, 2000), 69.

river or an ocean.” The sight of familiar objects, such as his own musket or Waldegrave’s notorious letters, heightens rather than dispels his confusion, as these items seem to follow the hyper-connected logic of the novel’s circuitries: they “went by means invisible, and disappeared at the moment when foresight would have least predicted their disappearance,” and “now placed themselves before me, in a manner equally abrupt, in a place and by means, no less contrary to expectation,” Edgar marvels. Meanwhile, Edgar himself has seemed to appear and disappear before observers as if he could “move about invisibly, and change [his] place by the force, not of muscles, but of thought.” His mentor, Sarsefield, sees Edgar at several places in Norwalk, once “at the distance of thirty miles from your home, and in a spot, which it is impossible for you to have reached” and then again back at the home of Edgar’s neighbor, “so far distant from the scene of your catastrophe; over spaces only to be passed, in so short a time as since elapsed, by those who have wings.”<sup>220</sup>

Furthermore, the alienness of Edgar’s body is inscribed not only by its perplexingly indeterminate location, “overleaping the bars of time and space,” but also its “passage into new forms,” as he appears to his friends, by turns, as “a savage and a foe” and “a lifeless and mangled corpse upon the ground.” Dillon points out that these transformations perpetuate “a violence generated in response to the unclear boundaries between live and dead bodies, between domestic and foreign bodies, and between savage a civilized bodies”; as Edgar becomes indistinguishable from the figure of an Indian, he becomes “a target of white settler violence” himself. I would add that these unclear boundaries seem in part to have “dissolved,” to use Dillon’s term, underground, where the taxonomical and cartographic boundaries of the surface world are without clear

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<sup>220</sup> Ibid., 178, 229-230.

references – plants transmute into minerals, hibernating animals extend their natural lives for centuries. Indeed, Edgar’s torpor amid a pile of other motionless bodies remarkably replicates the living creatures drawn up from the earth’s depths in the AAAS’s *Memoirs*: his “sunken muscles, lividness, and cessation of pulse” seem at first to be “tokens of death” to “more than twenty eye-witnesses” before he is “recalled to life.”<sup>221</sup>

Later at their “wholly unforeseen” reunion, Sarsefield and Edgar attempt to align and integrate their convoluted narratives for “a glimpse of the complicated errors by which we had been mutually deceived,” mainly by the revelation of a “contrivance” which was “not to be imagined,” that Edgar “had found a rift at the basis of this hill, and thus permeated its solidities.” Even this belated reparation of the narrative, however, with the rather offhand revelation of Waldegrave’s murderer, leaves much unresolved for both the reader and the narrator, who is “surprised at the length to which my story has run,” with “one page insensibly added to another.” Indeed, left alone by his mentor and his “mind busy in revolving the incidents that had just occurred,” Edgar seems to linger in the subsurface world: “Who would have sought me in the bowels of this mountain? Ages might have passed away, before my bones would be discovered in this tomb, by some traveler whom curiosity had prompted to explore it.” This melancholy reflection seems to appeal to those Americans who “sought out” the spaces beneath the surfaces of the nation in a “field of investigation,” to revise Brown’s preface, only partially and unfathomably “opened to us by our own country.”<sup>222</sup>

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<sup>221</sup> Dillon and other scholars discuss the mutability of Edgar’s somatic self in the text at length: see *The Gender of Freedom*, 166-178; also Brückner, *The Geographic Revolution*, 202. Brown, *Edgar Huntly*, 233, 248.

<sup>222</sup> Brown, *Edgar Huntly*, 3, 23, 234, 244, 268.

## CONCLUSION

My dissertation has explored materials from the early United States that contend with particularly elusive “objects” of study – interiors. These internal spaces come from or reside within a perhaps unusually wide range of objects in the early republic, although all were viewed as eligible and appropriate areas of inquiry for the naturalist. The texts which describe them may at first seem rather miscellaneous as well, although many were read by, or read aloud before, similar audiences and were published together by early scientific societies in Philadelphia and Boston. Yet “American Interiors” posits these diverse spaces: inside the eye, the stomach, the excavation pit, the cavern – as structurally and epistemologically related sites of engagement, for both the early Republican observer and the modern reader. By bringing together these hidden spaces, the interior becomes apparent as a category of encounter and experience that has not been defined or served either by historiographies of the early republic or of its natural history.

For example, Andrew Lewis has recently offered a thorough examination of the intriguing phenomenon of swallow submersion in the early republic – that is, swallows plunging themselves into muddy stream banks or diving into ponds in winter – Lewis historicizes the factors contributing to popularity of such reports, or, as Benjamin Smith Barton would probably rather have it, the “wondrous” phenomenon of Americans believing the stories and making them their own with their particular “eye-witness”

details. He even offers compelling speculation as to what, exactly, writers were “witnessing,” based on modern ornithology of several North American species of swallows which ranged in the eastern part of the continent in the years of the early nation.<sup>223</sup> Yet Lewis does not explore why the “unlikely” theory took on this particularly unlikely shape: that is, why were submerged birds – or again, the “fascinating” insides of the rattlesnake, another peculiarly persistent story at the same time – so compelling to Americans?

Indeed, the reports of swallows’ “immersion” resonate remarkably with early national accounts of toads and mice living deep underground in suspended, hibernative states, supposedly for centuries, as well as many other iterations of bodies found within unusual spaces. In this dissertation, I have traced these widespread instances of internalized phenomena throughout the writings of early U.S. observers of nature, identifying a persistent and pervasive sense of interiority – an awareness, as one naturalist observed in 1783, that “much the largest part of the contents of the earth, will always remain hidden from our view, and beyond the reach of our knowledge,” paired with explorations that went “far enough below its surface” to reveal that “instead of being a perfect solid,” the earth itself – as well as the bodies that inhabited it – were riddled with “various pits, holes, and caverns” – hollows that held unexpected and uncollectable things.<sup>224</sup> I argue that this interiority of things engendered ways of knowing against what various historiographies of the period have positioned as unknowable, either according to

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<sup>223</sup> Andrew Lewis, “A Democracy of Facts, An Empire of Reason: Swallow Submersion and Natural History in the Early American Republic.” *The William and Mary Quarterly*, 62:4 (2005), 668, and *Democracy of Facts*, 13-45.

<sup>224</sup> Williams, “Observations and Conjectures on the Earthquakes of New-England,” *Memoirs of the American Academy of Arts and Sciences* 1 (1783), 298.

natural history's epistemic boundaries or the cultural conditions of a republic ever on its guard against hidden threats.

These spaces running through perceived solidities are inner zones that could not be predicted by outer appearances but affected, even controlled, the worlds through which early republican Americans moved, give rise to new and distinct models of perception and knowledge. Depictions of the eye from the 1780s and 1790s emphasized its absorbent interior – a humorally responsive orb that interacted with its material environment, such that one's visual perceptions were individuated “tracings” rather than commonly shared sights. The elusive depths of the stomachs and mouths of American animals provide a complementary site of visceral complexity – like the eye that absorbs light and illness (and even, occasionally, a wriggling snake), this internal space can take on, and emit, the physical trace of multiple identities, offering a potent model of how one individual “possesses” another and refiguring influence and knowledge as a physically invasive vapor. Meanwhile, the vexed attempts to bring fragmented bones out of the continent's interior to the surface as meaningful monuments reveal a shifting sense of historical proof – of how the past can inhere in objects – as well as the fluidity of narrative temporality beneath the surface world. These subterranean spaces provoked disjointed, subjective geographies – uncanny counterparts to the geodetic writings of the early nation that, in their fractured narrativities, could register information and experience that surface plots and plats could not.

These lines of inquiry suggest a new paradigm for the relation of subject and object, and subject to nature, in this period. If Americans in the 1780s and 1790s were without an intellectual or scientific vocabulary for these sensory, embodied, fascinated



moments, they created modes of expression to accommodate them. The resulting texts emerge as elliptical, fragmentary, and asynchronous, yet they record, for example, the experience of geographical and temporal displacement within a cavern, or upon unearthing a scattered and decaying skeleton. They are expressive and explanatory rather than categorizing or classifying. In this way, this project redresses characterizations of early national science as overtly functionalist or appropriative, without the “imagination, insight, and intuition” of later generations of American interaction with nature.<sup>225</sup> Indeed, while this project is certainly not the first study to show that eighteenth-century encounters with the natural world were not as nineteenth-century American writers (or modern readers or nineteenth-century literature) imagined, I argue that without an understanding of these early republican interiorized ways of thinking and writing, attempts to understand the period’s natural history as precursor or contributor to later Transcendental or environmental expression will necessarily neglect certain vital continuities.

Over the course of the nineteenth century, the salient cultural conditions in which this interior thinking developed shifted, but these earlier questions regarding subsurface space remained relevant. Discrete and increasingly professionalized scientific disciplines emerged more formally from natural history’s composite, capacious fields: geology, comparative physiology, histology, and organismal biology, for example, all based their analyses on internal, “hidden” processes and dynamics.<sup>226</sup> At the same time, the continental “interior” of the nation expanded dramatically, with profound effects on American nationalisms and spatial imaginings, as recent scholarship has laid out.

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<sup>225</sup> Kern, “Coleridge and American Romanticism,” 133.

<sup>226</sup> Lewis, *Democracy of Facts*, 154-156. Coleman, *Biology in the Nineteenth Century*.

Stephanie Lemenager argues that “apparently landless places” approached and appropriated by western expansion, such as deserts, oceans, and rivers, presented counter-narratives to manifest destiny. Like the “placeless” interiors discussed in this dissertation, such entities did not fit the conventional spatial models of settlement or governance: “unbuildable, unfenceable,” they were nevertheless undeniably *there*, informing and challenging definitions of the nation’s material space. Anne Baker, considering the fluctuating cartographic imagery of the antebellum nation as the U.S. nearly doubled in size, asks, in a query which would resonate just as well with early republicans Americans, “what was it like to live in a nation whose shape and size were constantly shifting?” Baker links the cognitive experience of the disputed and uncertain (and not only western) boundaries of the nation to rhetorical and conceptual dissonance and unease; as Emerson complained in 1847, “America is formless,” an “ungirt” and “diffuse” entity that was all interior “miscellany.”<sup>227</sup>

Indeed, the recurring thread of enigmatic interiors is just as palpable in more intimate expressions of nineteenth-century American nature writing. Samantha C. Harvey notes that *transcendental*, *transatlantic* – two of the major descriptors of Emerson’s thinking – implicate “several modes of crossing boundaries: geographic, temporal, and metaphysical,” and in the writer’s famous “Uses of Natural History” lecture, his first upon his return from Europe and the gardens and displays of Jussieu and Cuvier, Emerson predicates his intuitive vision on seeing through boundaries of objects, declaring “strange thoughts are stirred as you see more surprising objects than were known to exist; transparent lumps of amber with gnats and flies within... The limits of the possible are

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<sup>227</sup> Lemenager, *Manifest and Other Destinies*, 3. Anne Baker, *Heartless Immensity: Literature, Culture, and Geography in Antebellum America* (Ann Arbor: University of Michigan Press, 2006), 1-12.

enlarged.”<sup>228</sup> Steamboat passengers in Herman Melville’s *The Confidence-Man* echo Beauvois and Barton, interrogators of the possibilities of fascination, as they ask each other if, “When charmed by the beauty of that viper, did it never occur to you to change personalities with him? to feel what it was to be a snake?” Much like these late-eighteenth-century naturalists, the speakers appear susceptible to a kind of overwhelming, linguistic fascination themselves, a vaporous slipping into other forms: “as he breathed these words, he seems so to enter into their spirit – as some earnest descriptive speakers will...till he all but seemed the creature he described.”<sup>229</sup> These dissolving boundaries between subjects and objects reassert the image of the body as a permeable object, with ontologically plastic insides – prone to “masquerade” not in the sense of putting on identities but rather by a slippery ‘containing of multitudes,’ a conceit that belongs as much to early national observers of nature as it does to Walt Whitman and other mid-nineteenth-century writers.

Similarly, Rochelle Johnson has argued recently for a revised view of Thoreau’s “profound engagement with his surroundings” – an “enchantment” that is not fantastic delusion but a bodily attunement to the physical world. This “Thoreauvian enchantment” is evident in an 1852 journal entry in which Thoreau describes being overtaken by his sensory experience; the sounds of a cricket or piano notes, Johnson suggests, “serve as a material force entering his body,” and while at first he is a passive recipient, Thoreau “becomes conscious of being occupied...thus a subject made, in part, by the sounds...even as he is an object that these sounds permeate. The boundaries of self and nonself blur.” As Johnson points out, traditional readings of this passage as a “tentative

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<sup>228</sup> Emerson, “The Uses of Natural History,” (1836), qtd. in L.R. Brown, *The Emerson Museum*, 63.

<sup>229</sup> Herman Melville, *The Confidence-Man*, 263-264. See also Irmscher, *Poetics of Natural History*, 149.

moment of transcendence” leave out that matter is inextricable from the experience – and like the of moments of immersion and permeation I have examined, this phenomenological materiality is itself inseparable from its “within-ness.”<sup>230</sup> Indeed, Emerson made a similar claim in 1841, imagining that all the visible forms in the world might be located in a physically present, if largely inaccessible, interior: “in the man, could we lay him open, we should see the reason for the last flourish and tendril of his work; as every spine and tint in the sea-shell preexist in the secreting organs of the fish.”<sup>231</sup>

More than four decades earlier, Joseph Priestley expressed a strikingly similar thought in a letter to the American Philosophical Society. Rebutting Erasmus Darwin, grandfather to Charles, who contended that life could begin “spontaneously” because visible life forms seemed to spring from inert matter, Priestley argued instead that internal organization, initially hidden from the naked eye, eventually makes itself apparent. Any plant or animal, in “its first discoverable state, is now found to be the future plant or animal in miniature, containing every thing essential to it when full grown.” The organism’s transformation over time, then, was merely inner essence becoming external:

When the external form undergoes the greatest change, as from an aquatic insect to a flying gnat, a caterpillar to a crysalis, a crysalis to a butterfly [*sic*], or a tadpole to a frog, there is nothing new in the organization; all the parts of the gnat, the butterfly, and the frog, having really existed, though not appearing to the common observer in the forms in which they are first seen. In like manner, every thing essential to the oak is found in the acorn.<sup>232</sup>

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<sup>230</sup>Johnson, ““This Enchantment is no Delusion,”” 609.

<sup>231</sup>Harvey, *Transatlantic Transcendentalism*, 12. Emerson, “History,” *Essays: First and Second Series* (New York: Vintage Books, 1990), 14.

<sup>232</sup>Joseph Priestley, “Observations and Experiments Relating to Equivocal, or Spontaneous, Generation,” *Transactions of the American Philosophical Society* 6 (1809), 120.

Yet as the readings in this dissertation reveal, this teleological thinking, like its reiterations in the second half of the century, is somewhat problematic. Ernst Haeckel's recapitulation theory, for example, famously posited that ontogeny, the growth and development of an individual organism, rehearses the phylogeny, or evolutionary history of the species; in a human embryo, for instance, the pharyngeal ridges and grooves recall the 'gills' of a marine ancestor – a beguiling though discredited explanation.<sup>233</sup> Beyond paradigmatic revisions of biological hypotheses, the reductive idea that interior or "embryological" states are merely the "preexistence" of external appearances precludes any curiosity or examination of these spaces, confining the "limits of the possible" to what we already know (or think we know). Indeed, these early national texts show that the interior's complexity is not revealed by its corresponding exterior. Furthermore, its emergence is never complete: whether a worm in an eye, or snake's young within its belly, or the perpetually incomplete mammoth skeleton, or the tortured figure of Edgar Huntly. Therefore, as readers of these texts, we must be careful not to read back later "forms" and conclusions onto earlier stages, but instead pay close attention, much as early republican investigators did, to the unexpected variegations of particular 'insides.'

Future work in this vein might well be done under the auspices of new materialist readings: a rapidly evolving body (or bodies) of criticism and theory that has mostly taken contemporary productions – or in the case of Johnson's work, extending as far back as the mid-nineteenth-century – as its field of analysis. However, I contend these approaches appear very well suited for the scientific or "natural" writing of earlier generations of Americans. Early national descriptions of specimens, ranging from the meticulous and ebullient lyricism of William Bartram's well-read *Travels* (whose long

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<sup>233</sup> Coleman, *Biology in the Nineteenth Century*, 48.

catalogues of subsurface strata and soil are nevertheless most often skimmed by modern readers) to seemingly less stylistically polished letters and memoirs of relatively unknown writers, are, of course, suffused with material detail, ripe for what Johnson describes as a “sustained exploration of how to re-think the self as part and parcel of matter.”<sup>234</sup>

My own methodology in this project offers one version of this exploration: a close examination of texts as their own kind of “caverns,” which shift and twist eccentrically and idiosyncratically around the writer (and reader), yet sound with echoes of other, adjacent hollows. In the course of the project, I have felt a sympathy with many of these early national writers struggling to make sense of spaces both alien and familiar: with Barton, slipping rhetorically into the shapes and structures of his subject, or with Calvin Jones, inviting his friend to follow his underground exploration but admitting, at the same time, its “fatigues” and irregularities. Yet each strange space, uniquely and again collectively revealing unrecognized ways in which early republican observers created knowledge or interrogated conceptions of identity, reasserts a need for readers to continue to “peer into” these interiors, even and especially when they cannot be fully laid open.

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<sup>234</sup> Johnson, ““This Enchantment is no Delusion,”” 608.

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