

Biological Aesthetics: Thoreau, Gender, and Botany

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A leaf, for Henry David Thoreau, is a dynamic concept. More than a material object, a leaf signifies process. It is the pattern by which both organic and inorganic nature expresses itself. These ideas are so well established within Thoreau studies, and the study of nineteenth-century American literature in general, that they are essentially platitudes. Yet, a significant dimension of Thoreau's leafy dynamism has been largely untouched by scholars: the intersection of gender and leaf morphology. In the winter of 1854, Henry David Thoreau reveals in his journal just how closely his conception of gender informs his perception of leaves: "What a contrast between the upper and underside of many leaves – The indurated & colored upper side – & the tender more or less colorless under side – Male & female – Even when they are almost equally exposed" (8:10). A single leaf, for Thoreau, contains a male and female side, corresponding, respectively, to the sun-exposed and shaded surfaces. Inscribing gender upon the dynamic surface of leaves implicitly situates gender as equally dynamic. What, though, allows Thoreau to make this imaginative leap connecting the language of leaves with the language of gender? That is, what intellectual ferment leads him to write that sentence? These are the fundamental questions this essay addresses.

Out of context, it would be easy to mistake Henry David Thoreau's vast extension of Goethean thought as an exaggeration bordering on parody when, on 5 March 1854, he wrote in his journal, "Thus even ice begins with crystal leaves – & birds feathers & wings are leaves – & trees & rivers with intervening earth are vast leaves" (8:30). Johann Wolfgang von Goethe, as

Thoreau knew, developed what Emerson called “the leading idea of modern botany,” in which each part of a plant – from the first sprout to the final flower and fruit – was thought to develop from the same underlying “organ”: the leaf (Richardson, *Henry Thoreau* 30).¹ As Goethe wrote in his 1790 text, *An Attempt to Interpret the Metamorphosis of Plants*, whether you consider the leaf, the blossom, or the bole, “it is still *the same organs* which, with different destinies and under protean shapes, fulfil the part prescribed by Nature” (114). This transmutable, underlying organ is called the *ür-leaf*. Whereas Goethe locates this *ür-leaf* along each stage of plant ontogeny, Thoreau extends Goethe’s concept beyond botany, locating the foliage form in ice crystals, avian physiology, and river geomorphology.

Rather than parodying Goethe, Thoreau’s 1854 journal passage represents the fruit of nearly seventeen years of contemplation, beginning in his earliest journal passages, such as on 28 November 1837, when the idea of extending the *ür-leaf* to ice foliage first occurred to Thoreau: “It struck me that these ghost leaves and the green ones whose forms they assume, were the creatures of the same law” (1:15). Indeed, these Goethean riffs occur throughout Thoreau’s major texts, from the ice leaves in his first natural history essay, “Natural History of Massachusetts” (1842), to the many law-of-leaf manifestations in the drafts of *A Week on the Concord and Merrimack Rivers* (1849) and the sandbank foliage he describes in the “Spring” chapter of *Walden* (1854). And like the other images he uses to model spiritual and cognitive processes – such as the fluid movement of rivers – Thoreau uses leaves to model the mind in motion, as he did earlier in the winter of 1854, when he compares his winter thoughts to laurel buds that “will not expand into leaves & flowers until summer comes” (7:259). By his 1859 lecture, “Autumnal Tints,” Thoreau expands beyond the leaf-as-cognition image to argue that autumnal leaves can even teach us how to die in a noble manner (382). From *ür-leaf* to crystal foliage, and from cognitive model to elegiac exemplar, the concept of leaf was a vital and dynamic idea from Thoreau’s earliest writings to his posthumously published essays, informing the way he conceived the interrelation of his own subjectivity with nature.

Alongside the botanical specificity and transcendental possibilities of leaves is the way leaves, for Thoreau, possess a conceptual combinatory power. For example, in her book, *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science*, science-and-literature critic Laura Dassow Walls explains how, starting in the winter of 1837, the connection between leaf foliage and ice foliage "gives Thoreau the uniting generality he seeks to bring together winter and summer, death and growth, ice and life, fact and truth" (39). The ür-leaf, in other words, becomes a conceptual unit that allows Thoreau to think *through* certain binaries. Within this combinatorial context, it makes sense that Thoreau uses leaf morphology to mediate gender difference: in a journal passage on 18 February 1854, Thoreau assigns the female and male genders to specific biomorphological locations on the leaf (8:10). This gendering of the leaf is part of a larger discourse in which Thoreau engages. Elsewhere, I have explored how Thoreau responds to English aestheticians William Hogarth and Edmund Burke, rendering their aesthetics – and the gender assumptions underlying these aesthetics – *dynamic* by applying their aesthetic concepts to geomorphologically dynamic landscapes, such as river systems.² This playful intermingling of the male and female genders on a single leaf accompanies the commingling of two domains that, for Thoreau, are connected: aesthetics and the science of botany.

In 1854 – and throughout much of the 1850s – Thoreau read aesthetic and botanical texts deeply, critically analyzing the authors' views while simultaneously co-opting their lexicons and applying their words and concepts to the landscapes in and around Concord, Massachusetts. With regard to aesthetics, for example, the year 1854 represents the culmination of two years in which Thoreau devotedly read the works of the English aesthetician and originator of the picturesque, William Gilpin. Thoreau borrowed Gilpin's *Remarks on Forest Scenery* from Harvard Library on 22 March 1852, and he checked out *Observations on the River Wye* on 24 May 1854 (Boudreau 358-59). During this time period, Thoreau was actively imitating Gilpin's style. "Gilpin showed Thoreau," says biographer Robert Richardson, "the grand and integrative language of landscape" (*Henry*

Thoreau 260). Alongside this language of landscape – and equally fascinating, at least in certain periods of his life, to Thoreau – is the language of botany, and in the 1850s Thoreau was heavily invested in naturalist research, as many Thoreau scholars have documented. Leading up to 1854, for example, Thoreau read a variety of botanical texts using a method of reading he employed with scientific subjects: reading both the contemporary scientific texts *and* the historical texts covering that given subject. As Richardson points out in his essay, “Thoreau and Science,” Thoreau read – in addition to his lifelong reading of Goethe – the following botanical texts in 1851 alone: “Bartram, Agassiz and Gould, Kalm (a disciple of Linnaeus), Cuvier (the teacher of Agassiz), Loudon (apostle of the Linnean [*sic*] ‘artificial’ system of botanical classification), Stoeber (the biographer of Linnaeus), Pultenay (another Linnaean), and, eventually, in February 1852, Linnaeus” (116). Although it’s possible to focus solely upon Thoreau’s aesthetics or his botany during the early 1850s, seeing botany and aesthetics together helps explicate the unique intersection of science, aesthetics, and gender in this period. In particular, 1854 represents a time in which Thoreau read and deployed the language of aesthetics and the language of botany, and these two discourses come together in the figure of the leaf at the same time that he, for the first time in his writing career, assigns gender to specific biomorphological locations on the leaf. Aesthetics and botany fuel a gender inflection in which Thoreau simultaneously inscribes gender onto a single leaf and undermines that inscription.

In a post-Darwinian world that has been dominated – in its biology, tropes, and popular culture – by the concept of Darwinian evolution, it can be difficult at times to imagine the science, and specifically the botany, of Thoreau’s pre-Darwinian America. Reductively speaking, Goethe’s concept of the *ür-leaf* pervaded *early* nineteenth-century science and culture in a comparable manner to the way Darwin’s concept of natural selection pervaded *late* nineteenth-century science and culture. As Richardson explains in *Henry Thoreau: A Life of the Mind*, “Before the ideas of evolution and natural selection became our catchall explanation of natural change [...] the Romantic generation, from Goethe to Whitman, expressed

its conception of the role of change in nature [...] in the idea of metamorphosis" (Richardson 30). Metamorphosis here is non-progressive and encapsulates Goethe's concept of the *ür-leaf* – that fruitful idea that so influenced much of Thoreau's writing life. Although Thoreau scholars generally agree that Goethe – along with Humboldt – greatly influenced Thoreau's relation to and study of nature, and that Thoreau turned evermore attentively toward natural history from 1850 onward, there's much less consensus about the way Thoreau's botanical turn is related to his more literary writing.³

Characterizing the vast majority of Thoreau scholarship, Ronald Wesley Hoag points out that, for much of the twentieth century, "prevailing critical opinion held that his science and Transcendentalism muddled each other and vitiated his later writings" (153). In other words, Thoreau the Emersonian transcendentalist turned into Thoreau the unimaginative empiricist. Although this may be the dominant view in the twentieth century, there are several specific – and distinct – configurations of Thoreau's science and literature that are worth synthesizing. For example, in his pioneering 1945 essay, "Thoreau's Science," Raymond Adams – focusing on the scientific method and objectivity as the criteria for science – argues that Thoreau was a romantic naturalist before moving to Walden Pond in 1845; that Thoreau began flirting with the scientific method while at Walden insofar as he was *testing* an economic theory; and that, by the time he died in 1862, Thoreau can be considered an early ecologist. In her influential 1965 essay, Nina Baym points out that the Thoreau-as-ecologist camp is in the minority among critics (221). Aside from the ecological Thoreau, she identifies two other common readings of Thoreau's relation to science: the humanist and the symbolist arguments. According to Baym, the humanist view is that, although Thoreau is consistently oppositional to science, he falls deeper into science and empiricism because of a waning of artistic motivation (221). The symbolists – the group Baym identifies as dominant in 1965 – hold that Thoreau never *stopped* being a poet and that he was by no stretch of the imagination a scientist (222). Positioning herself against these arguments, Baym argues that her view is more complicated than these

earlier arguments: although Thoreau began his intellectual life – she argues – enthusiastically accepting science in the hope that scientific knowledge would align with and support transcendentalism, Thoreau realized that – between the failure of his approach and the way nineteenth-century science was developing – his conceptual marriage of science and transcendentalism was untenable, and so he turned back to naturalism in his final years (222). In short, summarizing the four popular views, we have: 1) Thoreau the ecologist, 2) Thoreau the transcendental writer changing to Thoreau the uninspired empiricist, 3) Thoreau the perpetual poet and non-scientist, and 4) Thoreau the science enthusiast changing gradually – and complicatedly – to Thoreau the frustrated naturalist.

In more recent Thoreau scholarship, beginning with the 1995 argument by Laura Dassow Walls that situates Thoreau as a serious scientist, critics embrace *both* Thoreau the scientist *and* Thoreau the writer. As Patrick Vincent points out in a 2007 essay, Baym's argument that Thoreau's relationship with science changed from enthusiasm to opposition is "no longer accepted" (98). Nevertheless, Baym's essay is insightful and her argument was so influential that you can hear Walls implicitly reacting to it thirty years later in her book, especially in the way Walls carefully tries to go beyond the conception that Thoreau grew evermore conflicted and frustrated in the 1850s: "As his writing matures, he is not so much conflicted as experimenting with new ways to keep fields and activities united that we now perceive to have been diverging permanently" (7). Critics now see Thoreau as constantly interweaving the human and the nonhuman: "His act of consilience seeks to give voice to all the participating agents, not by blending them together but by giving each a distinct hearing in a medium of sustained attention. In consiliating [*sic*] literature and science, Thoreau tried to enable and enact both, as real knowledge situated in, not beyond, the world" (Walls 11-12).⁴ Put simply, instead of devising oversimplified binary shifts from transcendentalist to scientist or vice versa, critics now explore the *interconnections* between Thoreau the writer and Thoreau the scientist.

In relation to these previous studies of Thoreau's relation to science and literature, my argument – that aesthetics and botany occasion a gender

inflection in which Thoreau simultaneously inscribes gender onto a single leaf and undermines that inscription – is also in the contemporary vein of analyzing interconnections. Elsewhere, I have examined the intersection of geology and aesthetics, arguing Thoreau – to use Deleuze and Guattari's terminology – simultaneously *territorializes* gender along specific geomorphological locations (i.e. the cut-bank and point bar) of a river and *detrterritorializes* gender insofar as that territorialization occurs in a fluid and dynamic system. The present essay continues the spirit of this research insofar as it analyzes how Thoreau's location of the male and female genders on the 1854 leaf simultaneously situates gender and undermines that situatedness. That is, the gendered leaf botanically territorializes gender while also – partly because of the specific traits of the leaf in question – suggesting its detrterritorialization. Through the influence of the undulating line of beauty – Gilpin's picturesque, Goethe's *ür*-leaf and botanical nomenclature – Thoreau, on 18 February 1854, explores nineteenth-century gender relations through a leaf. This argument is significant for many reasons, one being that it counteracts an overemphasis in characterizing Thoreau's relation to science. Scholars tend to exclude gender from the many configurations of Thoreau, literature, and science, when in fact it informs his vision of each.

I. Botany, the Beautiful, and the Picturesque

In order to fully appreciate the intersection of botany and aesthetics within the gendered-leaf journal entry of 18 February 1854, it's necessary to see how botany, the beautiful, and the picturesque are – to use a Russian Formalist term – *operative* for Thoreau during this winter. Although I'll explore Goethe's botany in a later section, it's helpful to get a general sense of the way Thoreau inhabits the botanical register, and the way in which, in sections, he shifts registers from the aesthetic to the botanical and vice versa. From January to February 1854, Thoreau is engaged in the project he undertakes every year around that time: trekking around Concord, making multiple stops at specific plants – and sometimes returning several times in the same day to the same plant – and noting the vegetable species, animals,

and inorganic phenomena he encounters all in the hopes of anticipating the spring and understanding the seasonal rhythms. Sometimes his observations focus specifically on botany. For example, he devotes an entire paragraph to one terse, cryptic statement on 16 February 1854: “It must be The [*sic*] leaves of the chimaphila umbellata Spotted Wintergreen which Channing left here day before yesterday” (8:5). Presumably, he came upon this plant during his walk, but regardless of the context, there’s a sense of balance to this sentence that is characteristic of Thoreau: he balances the surmise that *these* specific spotted wintergreen leaves were left by his friend, Ellery Channing, with the concrete knowledge of the plant’s scientific name, *Chimaphila umbellata*.

Elsewhere in the 16 February journal passage, Thoreau juxtaposes the aesthetic and the botanical as if one led to the other: “A light snow will often reveal a faint foot or cart track in a field which was hardly discernible before – for it reprints it as it were in clear white type. alto relievo. [*sic*] Went to the locality of the chimaphila maculata by Goosepond” (8:5-6). Here, Thoreau poetically envisions snow-filled animal tracks using the language of the printing press (“white type”) and sculpture (“alto relievo”) before immediately diving into a terse sentence fragment that implies that he set out for a particular locality along Goose Pond to find a particular type of plant. The aesthetic and the botanical are juxtaposed, but they aren’t integrated.

A closer juxtaposition of botany and aesthetics occurs the next day – 17 February – when Thoreau walks around Gowing’s Swamp, observing: “The main swamp is crowded with – high blueberry – Panicled andromeda – prinos – swamp-pink &c &c (I did not examine them particularly) & then in the middle or deepest part will be an open space – not yet quite given up to water – where the Andromeda Caliculata & a few A. polifolia reign almost alone – These are pleasing gardens” (8:8). Here, Thoreau transitions from a botanical catalogue of names, both common and scientific, to a separate sentence that then evaluates these items using the banal aesthetic and evaluative term “pleasing.” Interestingly, this passage in which the same species are analyzed botanically *and* aesthetically represents a moment

when Thoreau "did not examine them particularly." If one weren't familiar with Thoreau's close analysis of aesthetics *and* botany, one might mistakenly conclude here that he only evaluates the plants aesthetically because he doesn't grant them a rigorous botanical examination. Regardless of the way Thoreau is specifically describing the plants he encounters leading up to 18 February 1854, the fact that he is deploying botanical nomenclature at all reveals how his 'botanical vision' is operative at this time.

In addition to botanical rhetoric, Thoreau describes curving forms – which he associates, elsewhere, with the line of beauty – in early 1854. For example, on 6 February 1854, he writes:

From the Cliff hill the landscape looks very bleak & Nova-Zembla like – A cold drifting wind sweeps from the north – the surface of the snow is imbricated on a great scale being very regularly blown into waves – alike over the high- and the rail-road concealing the tracks & the meadow & the river & the pond – It is all one great wintry looking snow-field – whose surface consists of great wavelike drifts – many 20 feet wide with an abrupt edge on the S. It is like a scaly armor drawn alike over the meadow & the pond. (7:270)

Looking from a cliff near Walden Pond, Thoreau compares the wintry landscape to the bleak conditions of an Arctic archipelago (also known as Novaya Zemlya) and carefully describes the shape and metrics of the undulating wave-like snowdrifts. Characterizing the waves, he fixates on their regularity and size. Less than two weeks later – on 18 February 1854, the day he also genders the leaf – Thoreau discerns the curving line-of-beauty-esque form on an organic specimen as he walks around the Yellow Birch Swamp: "The curls of the yellow-birch bark form more or less parallel straight lines up and down on all sides of the tree – like parted hair blown aside by the wind – or as when a vest bursts" (8:9). Here, he's so focused on the *curl* of the bark that he devotes an entire sentence to trying to capture in language the look of that curl, transitioning from the empirical rhetoric of "parallel straight lines" to the poetic comparison of wind-blown hair.

These descriptions of waving snowdrifts and curling bark participate in a much larger discourse in which Thoreau associates, throughout much of his life, curling, waving, undulating shapes with William Hogarth's concept of the "line of beauty," which is a particular kind of curve that Hogarth believes is constitutive of the beautiful. The concept of the line of beauty circulated within Thoreau's interpretive community (Morgan 53); the fact that Thoreau was heavily engaged in reading Gilpin's texts at this time suggests that Thoreau was encountering these curling forms of beauty in his reading as well. For example, in *Remarks on Forest Scenery*, Gilpin mentions the phrase "line of beauty," and often expounds upon the beauty of undulating and waving lines (Morgan 52). Thoreau's descriptions of waving snow and curling bark leading up to his 18 February gendering of the leaf is significant because Thoreau has a tendency, when explicating anything remotely similar to the line of beauty – such as undulations, waves, and curling patterns – to accompany these flowing forms with particular moments of gender inflection, whether that means locating different genders in the same object, or quickly transitioning between genders in his rhetoric. In other words, considering his history of combining the line of beauty with gender inflection, it makes sense that he locates the curling form of beauty in the same journal entry as he locates the male and female genders on the same leaf – he is following an aesthetic pattern that he has been building up for years.

Aside from the rhetoric of botany and the beautiful in early 1854, Thoreau – since he's reading Gilpin, the originator of the picturesque – also has a series of extended meditations upon the picturesque within his journal entries. For example, Thoreau first mentions Gilpin in the New Year on 8 January, when he identifies the essential essay out of all of Gilpin's writings:

Gilpin's "Essay on Picturesque Beauty" is the key to all his writings. He says in the outset that he does not mean to inquire "into the general sources of beauty" but the questions which he proposes to himself depend on the result of such an inquiry. He asks, first, "What is that quality in objects, which particularly marks them as

picturesque?" and answers "*roughness*" – assigning to that kind of beauty which he makes the opposite to the picturesque – the quality of "*smoothness*." This last he styles too generally or exclusively, "the beautiful."
(7:229)

Critical of Gilpin, Thoreau here reveals his dislike for the under-analyzed way in which Gilpin contrasts the picturesque and the beautiful. Thoreau's interest in undermining contrasts here – in this case, between the picturesque and beautiful – prefigures his undermining of gender contrasts in leaves a month later. Even the bare mention of the picturesque is significant because, traditionally, the picturesque was a method for undermining the binary between art and nature: this method of viewing the land casts nature as if it were designed to be the subject of an artwork. Thoreau seems quite fascinated with the idea of aesthetic contrast because he continues this line of thought on 6 February when he locates the picturesque on foliage, this time focusing on Uvedale Price's version of the picturesque:

Price on the Picturesque – says "The Midsummer shoot is the first thing that gives relief to the eye, after the sameness of color which immediately precedes it; in many trees, and in none more than the oak, the effect is singularly beautiful; the old foliage forms a dark background, on which the new appears, relieved & detached in all its freshness & brilliancy: it is spring engrafted upon summer." – Is not this the effect which I noticed by Fair Haven side last summer or autumn toward night – that watered & variously shaded foliage? (7:271)

This passage is significant for two reasons. First, there is the intersection of foliage and color contrast within an essay about the picturesque. According to Price, there is something beautiful in variety, and in this case, within color contrast between the fresh green leaf and the old dark leaf. This concept of focusing upon contrasting leaf colors is something Thoreau latches onto and revisits on 18 February when he describes the male and female sides of the leaf. Second, this passage is significant because it shows how Thoreau is

actively reading eighteenth-century British aesthetics and trying to locate this aesthetics within the nineteenth-century American landscape. Thoreau is, in other words, primed to find this contrastive color aesthetic elsewhere – which is exactly what he does on 18 February.

2. Gender, Botany, and Aesthetics

With botany, beauty, and the picturesque in play leading up to Thoreau's gender inflection, we can now appreciate the interplay of these terms within his imaginative 18 February 1854 journal entry in which Thoreau assigns the female and male genders to particular biomorphological locations on the leaf. Containing all of these thoughts within a single passage, Thoreau writes:

What a contrast between the upper and underside of many leaves – The indurated & colored upper side – & the tender more or less colorless under side – Male & female – Even when they are almost equally exposed. The underside is commonly white however as turned away from the light toward the earth – Many in which the contrast is finest are narrow revolute leaves – like the delicate & beautiful *Andromeda polifolia* – the *ledum* – *Kalmia glauca*. De Quincy [*sic*] says that the “ancients had no experimental knowledge of severe climates.” Neither have the English at home as compared with us of New England – nor we compared with the Esquimaux. (8:10)

Here, Thoreau seems to neatly characterize the different genders according to the contrasting characteristics of the upper and undersides of leaves, using foliage as a means to think through nineteenth-century gender roles. The colorful, hard upper side of leaves is assigned the male gender, while the virtually colorless, tender underside is assigned the female gender. After identifying revolute leaves as particularly good examples for manifesting this leafy male and female contrast, Thoreau transitions into a comment upon the comparative climate of England, New England, and the Arctic.

The language of botany and the language of aesthetics combine within this passage to give Thoreau a vocabulary of gender difference. The scientific names – such as *Andromeda polifolia* – are listed as *examples* of this particular aesthetic, as the aesthetic register (such as, for example, “delicate & beautiful”) flows right into the botanical register (“*Andromeda polifolia* – the *ledum* – *Kalmia glauca*”): “the delicate & beautiful *Andromeda polifolia* – the *ledum* – *Kalmia glauca*” (8:10). Thoreau, in a way, seems primed to see this contrastive color on leaves, given the way he quotes Price’s observation of the contrasting color between new and old leaves, and Thoreau’s seeming determination to discover this English aesthetic in the American landscape. Indeed, earlier in that 18 February journal passage, Thoreau echoes Price in singling out the aesthetic of newly sprouted leaves: “The *mitchella repens* berries look very bright amid the still fresh green leaves” (8:9). In other words, there seems to be a clear lead-up to this 18 February observation of the leaf’s contrasting color: Thoreau is actively reading about the beauty of contrastive color in leaves throughout this period, and he just so happens to discover this color contrast in foliage, extending the aesthetic further by using this contrast as a means to symbolize gender relations.

On the surface, Thoreau seems to be situating gender in a normative nineteenth-century manner, associating the higher, more-exposed, and harder side with maleness and the lower, well-covered, and softer side with femaleness in a seeming botanical microcosm of the separate spheres. And yet, at the same time that Thoreau territorializes gender on specific biomorphological locations of the leaf, he also appears to deterritorialize gender in specific ways, playfully undermining the situatedness of the assigned genders; that is, the foliage occasions – implicitly for Thoreau – a moment of gender inflection. Knowing that Thoreau incorporates the forms of beauty – from bark curls to snow waves – leading up to this gender inflection already primes us to see this aesthetic gendering as playful and unstable insofar as Thoreau has an historical tendency to link lines of beauty with the simultaneous settling and unsettling of gender. In addition to the incorporation of curls and waves leading up to this moment

of gendered foliage, Thoreau appears to destabilize gender in at least four ways.

To start off, there is the obvious association that Thoreau is inscribing the female and male genders on the *same* leaf. At the same time that he separates genders according to their normative characteristics, he undermines this separation by the very act of locating multiple genders on the same botanical specimen. In other words, he simultaneously stabilizes and destabilizes gender insofar as he assigns separate genders to particular biomorphological locations (stabilization) *and* locates these genders on selfsame leaf (destabilization). Ascribing more than one gender to a single entity, as we will see, places the leaf within larger trends of transcendental teleology.

In addition, there's a sense of changeability to the contrasting colors despite Thoreau's exclamation that the color contrast continues "even when they are almost equally exposed" (8:10). He admits in the next sentence, for example, that the reason why the underside is lighter in color is because it is "turned away from the light toward the earth." That is, he admits that differential exposure is probably the reason underlying this contrastive color, as well as the contrast in texture. In other words, this contrast between the upper and underside of the leaf – and, by association, the gender contrast – is rendered changeable insofar as it is contingent, relying as it does upon the relative exposure of foliage. This changeability is emphasized all the more when Thoreau observes that this color contrast is greater in some plants (such as "Andromeda polifolia") than in others.

The parallel association that gender binaries are stronger in some people than others is reminiscent of Margaret Fuller's famous dictum from "The Great Lawsuit," published in the July 1843 edition of *The Dial*: "There is no wholly masculine man, no purely feminine woman" (43). As if to emphasize the changeability and variety of this leafy contrast, Thoreau transitions from this statement of differential exposure to a statement in which he maps differential exposure onto a gradient of historicized cultural contrasts, quoting the nineteenth-century English essayist – whose *Literary Reminiscences*, among other texts, Thoreau read

– Thomas De Quincey: "De Quincy [*sic*] says that 'the ancients had no experimental knowledge of severe climates.' Neither have the English at home as compared with us of New England – nor we compared with the Esquimaux" (Sattelmeyer 75; 8:10). Here, Thoreau makes a cultural comparison in which he focuses on *relative* contrast: New Englanders experience a severer climate than England and a milder climate than the Inuit. In other words, he amplifies the notion of relative – and contingent and changeable – difference by revealing how climactic exposure changes depending on which regions you compare. Regardless of this cultural comparison, though, the very fact that Thoreau introduces the concept of changeability with regard to the leaf color contrast – and, by association, gender – suggests that he is subtly undermining the idea of strictly demarcating gender.

At the same time, Thoreau subtly deterritorializes gender implicitly by associating his gendered leaf with the line of beauty. He identifies the flowering plant, *Andromeda polifolia*, as a particularly good example of this leafy color – and gender – contrast, explaining a little later in his journal entry on 18 February: "The handsome lanceolate leaves of the *Andromeda polifolia* dark but pure & uniform dull red above – strongly revolute & of a delicate bluish white beneath deserve to be copied on to works of art" (8:10). What's significant here is the way Thoreau focuses on the shape of the leaf, locating his description in the middle of the sentence: "strongly revolute."⁵ Indeed, the leaves of *Andromeda polifolia* are rolled downward to a high degree, curling in on themselves. It's as if, implicitly, Thoreau is recognizing the curling nature – reminiscent of the line of beauty – of this particular type of leaf, thus using the leaf as a point of gender inflection, combining those two terms (the line of beauty and gender inflection) that he so playfully intermingles throughout much of his writing career.

But even if locating the line of beauty within this leaf passage is a conceptual stretch, there is still the way the very morphology – that strongly revolute shape – of *Andromeda polifolia* destabilizes gender. The edges of this particular leaf are so thoroughly curled that the technical "upper side" of the leaf – at the edges – is actually facing downward in the same physical

orientation as most of the underside. And vice versa, the technical “underside” of the leaf faces upward at the heavily curled edges. In other words, within this curving pattern reminiscent of the line of beauty, there is a gender inflection enacted: the “male” upper side of the glossy leaf curls over and faces downward at the edges and the “female” underside of the leaf curls under and faces upward. Thoreau, in a sense, playfully unsettles gender by using *Andromeda polifolia* as his example of the contrastive upper and underside of leaves insofar as the “male” and “female” sides curl at the edges, assuming the physical orientation of the alternate side.

Lastly, Thoreau destabilizes the gender distinction he simultaneously overlays onto the leaf by placing this gender distinction in a system – foliage – that he sees as highly dynamic. Leaves are the emblems of the thinking mind, expanding into thought. They mark the changing of the season and are emblems of death and ephemeral life. In his journal entries, leaves flit about the landscape, sink vertically into ice, expand before his eyes in their sandbank form, and vanish with the noonday sun as crystal foliage. New leaves sprout up in the spring where before there was nothing, and leaf fibers even find their way, as Thoreau discovers, into manure. Leaves, in other words, are in constant flux. They also serve as agents of change, as on 7 January 1854 when he asks himself: “Is this the melted snow made into tea by running amid the dead leaves & grass?” (7:226). Here, decomposing leaves get trampled upon the snow, transforming the snow by creating a substance Thoreau playfully calls “tea.” On 27 January he explicitly links American trees with change, writing: “Varro [...] says [...] ‘by the turning of some leaves you can tell what season of the year it is, as the olive & white poplar, & willow. For when their leaves turn the solstice is said to be past.’ They had not such a brilliant *change* of the leaf as we” (7:252, emphasis added). And leaves, as Thoreau observes throughout his journal, decompose in the end, dissolving their female and male sides; on 6 February he observes: “For a drifting wind has followed fast upon the snow – shaking it off the trees & there is a new fall of withered leaves – Probably thes [*sic*] leaves decay the faster for being deposited thus in successive layers alternating with the snow” (7:270). All of these passages reveal that Thoreau

thought of leaves as highly dynamic entities, undergoing self-transformations and transforming their environments. By placing the male and female genders onto such a dynamic system, Thoreau is using aesthetics and botany to occasion a gender inflection in which gender is simultaneously inscribed and undermined. Indeed, all four of these examples reveal how Thoreau's settling of gender upon specific biomorphological locations of the leaf is also subtly unsettling.

3. Protean Leaf, Protean Gender

Interweaving within this discourse on botany, aesthetics, and gender is Goethe's concept of the *ür-leaf*, which Thoreau expounds upon – from crystal leaves, sandbank leaves, and foliage leaves – many times from the first 1854 reference to crystal leaves on windowpanes on 11 January to the proliferation of leaves in bird feathers, wings, trees, and rivers on 5 March. This Goethean influence at this particular period in Thoreau's journal is significant for two reasons. First, the *ür-leaf* represents another line in the argument that leaves are, for Thoreau, systems embodying change, thus adding to the idea that, by inscribing gender upon the dynamic surface of leaves, Thoreau is thereby implicitly rendering gender dynamic. Second, the protean *ür-leaf* is directly connected, for Thoreau, to *Andromeda polifolia*, the very plant Thoreau engenders on 18 February.

With regard to the dynamic nature of foliage, Thoreau incorporates the changing and vital quality of leaves in most every description of sand and crystal foliage. For example, on 5 February 1854, he writes:

That sand foliage! It convinces me that nature is still in her youth – That florid fact about which Mythology merely mutters – that the very soil can fabulate as well as you or I. It stretches forth its baby fingers on every side. Fresh curls spring forth from its bald brow – There is nothing inorganic – This earth is not, then, a mere fragment of dead history – strata upon strata like the leaves of a book – an object for a museum & an Antiquarian but living poetry like the leaves of a tree – not a fossil earth – but a living specimen. (7:268)⁶

There is certainly a lot going on within this passage, and scholars have spent much time analyzing it, partly because portions of this paragraph wind up in *Walden*, which was published in 1854. Here, conveying a sense of exuberance and discovery, Thoreau characterizes the sand foliage as a dynamic geomorphological process: the leaf-like forms of sand *stretch forth* their fingers and the curling forms *spring forth* from the sandbank. Indeed, the sandbank is so dynamic that Thoreau envisions it as “living poetry” in contrast to the dead strata nineteenth-century geologists were so busy analyzing and writing about. This passage is important because it illustrates the way Goethe’s protean *ür-leaf* was informing Thoreau’s concept of the leaf at this particular period, when Thoreau first decides to inscribe gender onto the leaf.

The link between Goethe’s *ür-leaf* and Thoreau’s gender inscription is so close that Thoreau actually places these two concepts together in order to understand seasonal rhythms. On 1 March 1854 Thoreau writes: “I notice the redness of the andromeda leaves – but not so much as once – The sand foliage is now in its prime” (8:25). The gendered *Andromeda* is in a temporal relationship with the Goethean sand foliage: when one fades, the other blooms. *Andromeda* is a marker of winter for Thoreau, just as sand foliage is a sign of spring, believing as he does that sand foliage is created when frost comes out of the ground during milder weather. This passage including *Andromeda* and the *ür-leaf* is significant because it directly creates the link between the dynamic Goethean concept and the very plant Thoreau inscribes with the male and female genders.⁷ The *ür-leaf*’s protean, changeable, dynamic aspect is evident within Thoreau’s gendering of the leaf on 18 February, simultaneously stabilizing and destabilizing male and female difference.

4. Thoreauvian Theories of Science and Literature

This coupling of both genders in one figure is a phenomenon Thoreau was highly attuned to during this period. Less than two weeks after the leaf episode, Thoreau continues this gendered vision by referring to the male side of the river on 27 February, having first defined the male and female

sides of a river in 1852. As philosopher Alfred Tauber asserts, there is a distinct connection between Thoreau's observations and his sense of value: "Thoreau bound his world together through an endless dialectical process. His vision of nature – what he valued and thus *saw* – was framed by a particular attitude" (195). In February 1854, Thoreau evidently valued both his scientific ability to describe objects, and the way a binary structure of that object can be playfully interpolated through gender difference. Thoreau's apparent desire to inscribe gender onto the landscape places him within larger trends of transcendental teleology. Margaret Fuller, as we've seen, observed a mixture of genders in every individual, stating: "There is no wholly masculine man, no purely feminine woman" (43). More than a reflective observation, though, for the transcendentalists, gender mixture is an indication of the ideal human. As Emerson writes in his spring 1843 journal, "The finest people marry the two sexes in their own person. Hermaphrodite is then the symbol of the finished soul. It was agreed that in every act should appear the married pair: the two elements should mix in every act" (96-97). The complete human, the finished soul, expresses itself through a mixture of genders. Using the language of matrimony, Emerson hints at a unity the striving soul must attain in order to be complete.

Whereas Fuller and Emerson firmly place this multi-gendering within the human context, Thoreau sees this multi-gendering expressed in natural phenomena he is particularly fond of, such as rivers and leaves. The leaf's ability to express both genders is Thoreau's way of harnessing this powerful embodiment of Goethean metamorphosis for transcendentalist purposes. The leaf becomes this ideal marriage of genders, acting as goad and guide for the ideal self. The leaf here acts as a symbol for Thoreau's life project of breaking out of narrow categories of the self. As Ellery Channing reminds us in his biography, out of the poetic lines Thoreau recited, these lines by Samuel Daniel were "perhaps [...] the most frequent verse he repeated": "'Unless above himself he can / Erect himself, how poor a thing is man!'" (53). Thoreau sought natural phenomena, in part, to help raise him "above himself," and it appears – during this 1854 period at least – that he was focusing on the gendered self, using the leaf to express the kind of transgressive union he valued.

As we have seen, this intermingling of genders on a single leaf accompanies another intermingling, between aesthetics and the science of botany. Returning to the larger critical context, how does Thoreau's leaf description change the way scholars visualize his relation to science-and-literature studies?⁸ A strand of logic within Thoreau studies predicates his credentials as a scientist upon his ability to keep domains of knowledge separate. Early scholars tended to emphasize the mixing of Thoreau's thoughts on science and literature as an argument against Thoreau-as-scientist. In his 1890 biography, *The Life of Henry David Thoreau*, Henry Salt aligns himself with Ellery Channing's term, "poet-naturalist," arguing that Thoreau "could not properly detach the mere external record of observation from the inner associations with which such facts were connected in his mind – in a word, the natural history of the subject could not be separated from the poetry and idealism" (134). In Salt's view, inner and outer viewpoints enmesh so thoroughly that the mental processes of association and description become inextricable. Thoreau's status as non-scientist, in Salt's logic, results from an inability to separate these two thought patterns. Salt's argument has a long legacy within Thoreau studies, and is expressed in the way some scholars – arguing that Thoreau is indeed a scientist – impose a rigid division onto Thoreau's timeline. The humanist vein contends that Thoreau's transcendentalist vision gave way to a plodding empiricism. No longer enforcing a lifelong muddling of science and literature (as Salt implies), the humanist position nevertheless follows Salt's logic by taking the assumed ingredient of science (i.e. the ability to separate description from association) and overlaying that binary onto Thoreau's evolution, seeing his associational mind give way to his descriptive mind.

In order to contend with Thoreau's relation to these two nodes – science and literature – scholars often divide Thoreau's thinking into a clean binary in some way, whether it is in the evolution of Thoreau's life-long thought patterns, or – on a smaller scale – the transition in journal passages from empiricism to poetry. In *Walden's Shore*, for example, Robert Thorson continues this divisional legacy in his sentence structure: "Thoreau will

eventually become poetic, but only after he's truly gotten a hold of the 'thing in itself' as a particular part of nature" (272). He characterizes Thoreau's thought patterns in a stepwise fashion, relegating science and literature to their own clauses, as if that comma between "poetic" and "but" is all that stands between a clean empiricist and a return to Salt's muddled non-scientist. The literary, in this view, becomes a garnish Thoreau indulges in only after he has used science to grasp reality, or the "'thing in itself'" (272). Literature and science, poetry and nature, association and empirical investigation – these terms get separated out to the detriment of a more nuanced way of envisioning Thoreau's thought patterns. They get separated at the risk of overlooking the productive ways scientific and literary ways of understanding are not only connected, but also amplify each other.

In a way, Thoreau's use of the curling edges of *Andromeda polifolia* to subvert a binary is also a symbol of my characterization of Thoreau's scientific and literary imagination. If the humanists and Thorson are focusing on the upper and under sides of the leaf (i.e., the contrasting binary), I'm interested in scrutinizing the edges, or the places where empiricism and an associational imagination curl into each other. In the key journal passage I've examined here, Thoreau uses a gender metaphor to help describe a leaf, and a leaf to implicitly think beyond gender binaries. The aesthetics of contrast that he deploys gives him a vocabulary to describe the leaves, as does his associational link to different genders. He constantly weaves between the language of aesthetics and the language of botany, such as the way he uses an aesthetic term ("beautiful") to modify a scientific name ("*Andromeda polifolia*") (8:10). Looking at the key sentence itself, we realize that without the playful associational naming of genders, Thoreau's thoughts – whether aesthetic or scientific – are predominantly empirical: "What a contrast between the upper and underside of many leaves – The indurated & colored upper side – & the tender more or less colorless under side – Male & female – Even when they are almost equally exposed" (8:10). Ignoring the gendered terms, we see Thoreau remarking how, even when both sides of the leaf are exposed to the sun, they still retain a contrast in color and texture. The mere addition of genders in the middle of his thought marks his swerve toward

associational thinking. He does not expand on this brief associational interlude, but rather continues to think about the contrasting leaf sides. But for a moment, at least, we get a glimpse at how Thoreau's view of gender filters his descriptions of nature, whether aesthetic or scientific.

For Thoreau, botany appears to provide an especially porous boundary between science and literature. In a later journal entry, on 1 August 1860, botany aids the discernment of the beautiful: "How much of beauty – of color, as well as form – on which our eyes daily rest goes unperceived by us! No one but a botanist is likely to distinguish nicely the different shades of green with which the open surface of the earth is clothed, – not even a landscape-painter if he does not know the species of sedges and grasses which paint it" (*Journal* [1906], XIV:3). In Thoreau's view, a scientific knowledge of plant species disciplines perception, granting the botanist a level of optical discernment that is foreclosed to the non-scientist. Science enables a vision of the beautiful, similar to how, in the key passage this essay analyzes, gender enables a vision of leaves. Many Thoreau scholars have, certainly, noted this fluidity between empiricism and associational thinking. Laura Dassow Walls cautions, "If nineteenth-century boundaries were fluid and permeable, it is now all the more necessary not to solidify them in retrospect, anachronistically" (12). And H. Daniel Peck notes how Thoreau is constantly managing ways of knowing: "In his *Journal*, he is creating, day by day, a new mode of apprehension that mediates between science and art, between 'naturalism' and 'poetry'" (65).⁹ Thoreau "drifts back and forth between these poles," and is constantly trying to balance "the claims of outer and inner life" (Peck 66). What often gets overlooked, though, is the way Thoreau is also mediating between genders, actively using the outer life of leaves to reconsider the inner life of gender conceptions. Thoreau is not merely dealing with anaesthetized, distanced, Platonic conceptions of science, art, nature, and poetry. He is mapping genders onto nature, using the materiality of the natural object to confuse traditional nineteenth-century conceptions of masculinity and femininity. He is filtering his aesthetics and his science through a particular vision of gender. Writing gender out

of science, in this context, only results in a vitiated view of Thoreau's relation to that discipline.

Similar to how botany provides an especially porous boundary between science and literature, leaves, for Thoreau, provide an especially porous boundary between genders. His meditation on gender and leaves helps to explain certain apparent inconsistencies in his 1859 lecture, "Autumnal Tints," which was published posthumously in October 1862 in *Atlantic Monthly*.¹⁰ In this rapturous meditation on autumnal foliage, Thoreau changes the way he genders leaves, at times gendering them as female, and at times as male. For example, explaining the reason leaves change color, he writes: "The physiologist says it is 'due to an increased absorption of oxygen.' That is the scientific account of the matter, – only a reassertion of the fact. But I am more interested in the rosy cheek than I am to know what particular diet the maiden fed on" (368). Here, leaves are figured as the rosy cheek of a maiden. Elsewhere, referring to sugar maples, Thoreau switches the gender: "The lowest and inmost leaves next the bole are, as usual, of the most delicate yellow and green, like the complexion of young men brought up in the house" (383). Out of context, this variable gendering of the leaves seems to be artistic license bordering on inconsistency, and yet, in the context of Thoreau's 18 February 1854 journal entry, we realize that there is a fundamental link, for Thoreau, between leaves and *both* genders: leaves are a means by which Thoreau thinks through nineteenth-century gender relations, intertwining male and female in the same botanical specimen.¹¹

Goethe gave Thoreau this conception of leaf as a protean form underlying multiple plant organs. A leaf, for Thoreau, is a dynamic concept that invites him to take seemingly disparate entities and establish an underlying connection, a blurring of boundaries, whether that means mind and body, organic and inorganic, literature and science, or – as this study shows – female and male. It appears that his ability to see the leaf pattern in ice crystals, birds' feathers, trees, and rivers was only the beginning of a more intimate striving toward underlying unity.

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Notes

¹ Thoreau encountered Goethe's protoplant concept by reading Goethe's *Die Italiänische Reise*. This essay is not focused on narrow textual influence, and thus is not restricted to that text when describing Goethe's ür-leaf. For more on Thoreau's reading habits related to Goethe, see Sattelmeyer 26-27.

² For a full discussion of the relation between aesthetics, gender, and geology in Thoreau's works, see Morgan, "Aesthetic Inflections: Thoreau, Gender, and Geology."

³ The precise timing of Thoreau's turn toward science is immaterial to this essay's argument. Regardless of any particular date, it is generally accepted (and corroborated in his journal) that Thoreau was heavily invested in empiricism during the 1850s.

⁴ "Consilience" comes from William Whewell and describes, according to Walls, "the advancement of knowledge that occurs when apparently unconnected classes of facts are seen to have '*jumped together*' to form a new, simpler, and more unified theory. [...] In nineteenth-century terms, Thoreau rejected neither poetry nor science, nor did he simply 'reconcile' them, collapsing them together. In the 'consilience' of Emersonian transcendental wholes with Humboldtian empirical science, he sacrificed neither but attempted to create a way of knowing which combined them both into something new" (11).

⁵ "Revolute" was a common term in botanical grammars during Thoreau's time, as implied in Richardson's "Thoreau and Science." For example, Sir J.E. Smith's 1822 *Grammar of Botany* indicates: "'The *margin* of leaves or leaflets is either entire, wavy, serrated, jagged, toothed, or notched, in a simple or compound manner; naked, fringed, spinous, cartilaginous, glandular; flat, revolute (rolled backward) or involute (the reverse)'" (Richardson 117).

⁶ This journal passage is incorporated into the "Spring" chapter of *Walden*. Robert Sattelmeyer observes that this passage, in its denial of dead history, contains "a fairly explicit refutation of the contemporary squabbles over the meaning of the geologic record" (88). For more on Thoreau and

geology, see Rossi's "Poetry and Progress: Thoreau, Lyell, and the Geological Principles of *A Week*" and Thorson's *Walden's Shore: Henry David Thoreau and Nineteenth-Century Science*.

⁷ Thoreau has several dynamic foliage passages within his journal during this period. For example, on 2 March 1854 he writes:

The sand foliage is vital in its form – reminding me what are called the vitals of the animal body – I am not sure that its arteries are even hollow[.] They are rather meandering channels with remarkably distinct sharp edges – formed instantaneously as by magic – How rapidly & perfectly it organizes itself – [...] You find in the very sands an anticipation of the vegetable leaf – No wonder then that plants grow & spring in it – The atoms have already learned the law – Let a vegetable sap convey it upwards and you have a vegetable leaf – No wonder that the earth expresses itself outwardly in leaves – which labors with the idea thus inwardly – The overhanging leaf sees here its prototype. The earth is pregnant with law. (8:25-26)

⁸ Thus far, this essay has avoided explicitly using a feminist science studies context, in favor of placing Thoreau's gender conceptions in conversation with several of the major scholars theorizing his broad relation to science and literature. This essay's focus on the interconnectivity between Thoreau's ideas about leaves and gender, though, opens up a reconsideration of Raymond Adams' ecologist argument, particularly with a feminist science studies inflection. One could, for example, distance Thoreau from Adams' fixation on objectivity, and place Thoreau's gendered leaf within the context of Timothy Morton's "queer ecology" concept, a "nonessentialist view of gender and sexuality" (275). Ecology, as Morton notes, "demands intimacies with other beings that queer theory also demands" (273). In a way, the curl of the leaf *is* Thoreau's queer ecology: the revolute shape of the gendered leaf – *Andromeda polifolia* – is reminiscent of the line of beauty, and the curling form physically changes the orientation of the

upper and lower sides of the leaf, curving the male side – at the leaf edge – toward the female side and the female side toward the male side. The curl of the leaf represents a multiplication of difference. Yet, at the same time, ecofeminism appears to describe certain aspects of the gendered leaf. Ecofeminism “arose out of feminist separatism, wedded to biological essentialism that, strategic or not, is grounded on binary difference and thus unhelpful for the kinds of difference multiplication that is queer theory’s brilliance” (Morton 274). In the middle of the leaf, far from the curl, Thoreau does appear to inscribe difference insofar as his fixation is on contrast. In the end, both modes are in constant interplay, as Thoreau inscribes male and female genders onto separate sides of a leaf, and yet inevitably destabilizes that separation.

⁹ Peck does point out, “nonetheless, in certain important respects science and poetry were indeed separate and discontinuous for Thoreau, especially after 1850 and in the period of the mature Journal” (64). For example, Thoreau divided facts and poetry into distinct commonplace books (64). Yet, as we have seen, a strict binary between empiricism and associational logic has a tendency, in Thoreau’s writing, to bleed into each other.

¹⁰ According to Walter Harding, “Autumnal Tints” comes from Thoreau’s journal from 1851-1858, which includes the period this present essay is focusing on (71). “Autumnal Tints” is an essay “Thoreau revised for publication in the last months of his life and, in this case, according to his 11 March 1862 letter to Ticknor & Fields, he was able to correct the proofs before his death” (Harding 71).

¹¹ Indeed, leaves, river fluidity, and the undulating line of beauty all coincide within a specific passage in Thoreau’s “Autumnal Tints.” Boating on the Assabet River in Concord, Thoreau notes how “large fleets of leaves are floating on its surface. [...] When I turn my prow that way, and the wave which it makes strikes them, list what a pleasant rustling from these dry substances grating on one another! Often it is their undulation only which reveals the water beneath them” (379-80). Here, leaves are piled on the undulating waves of the river, bobbing up and down with the flowing fluid, and connecting – for Thoreau – river and leaf aesthetics with the line of beauty.

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