

"With axe and fire": Catharine Trail's Ecological Vision

by Elizabeth Thompson

Catharine Parr Trail's reaction to the Canadian landscape often seems contradictory¹. On the one hand, she was a naturalist who, from the time of her arrival in Upper Canada until her death in 1899,² worked to document and thereby indirectly to preserve the Canadian wilderness. On the other hand, as a pioneer settler, Trail helped to destroy the natural habitat, and, moreover, believed she had a right, not to say an obligation, to do so.³ "Something Gathers Up the Fragments," the concluding chapter of *Pearls and Pebbles* (1894), is a relatively conservative synthesis of Trail's responses to the world around her. This natural history essay, with its key word "fragments," is aptly titled, for it centres on the harmonious integration of disparate elements. In addition, Trail had been writing versions of the essay for sixty years in Canada; fragments of it appear in many different forms throughout her life's writing⁴ (or her "life-writing"). Finally, "Something Gathers Up the Fragments" states Trail's personal ecological awareness: it echoes back to the stable world of Gilbert White's *The Natural History of Selborne* (1789)⁵ where nature is designed equally for human appreciation and manipulative consumption; and it echoes forward (albeit in fragments) to a twentieth-century understanding that humanity can irrevocably damage an ecosystem.

Trail uses a Linnaean taxonomy⁶ throughout her natural history writing as she works to make Canadian wildlife "known and accessible" (Bentley 298). Nor is she alone in her bid to lay a "grid of taxonomy" (Bentley 298) on nature. Suzanne Zeller identifies a kind of "inventory science" (4) practised by many Canadian natural historians, and Carl Berger comments on the "fad of natural history" (9) which inspired English travellers to make an "inventory of nature" (14). Such a science owes a debt to the efficient scheme of scientific classification designed and popularized by Carl von Linné (Linnaeus) in such works as his *Systema Naturae* (1788-1793). Just as Gilbert White unhesitatingly defers to Linnaeus in the course of his observations in

Selborne, so too Traill cites Linnaeus⁷ or other like-minded scientists⁸ frequently in her work. In "Fragments," even when a source is not acknowledged, she uses Latinate terms to classify her forest mosses: "*Hypnum*s, *Dicranum*s, *Bryum*s" (238).⁹ When the Latinate names are unknown to Traill, arguably because of her lack of formal training,¹⁰ she nonetheless yields to an impulse to label and categorize, using instead colloquial and/or invented terms.¹¹

Starting from a rigid taxonomy, Traill's "Fragments" is fleshed out by interpretive analyses of data, analyses which continue to look for the stability implied by the invocation of Linnaeus. Based on personal observation, Traill concludes that the Canadian wilderness is not chaotic but orderly: "Disorder—order unperceived by thee; / All chance—direction which thou canst not see."¹² In this reference to Pope's *Essay on Man* (1733), Traill restates an eighteenth-century truism—that God's created universe is governed by laws of order.

As implied by the preceding citation, an essential part of Traill's environmental orderliness hinges on her religious faith. In her writing in general, and in "Fragments" in particular, she looks for and finds the hand of God in nature; thus observation is wedded to Christian system and order. "Fragments" documents Traill's certainty that in nature's economy,¹³ God, the supreme economist, wastes nothing. As Linnaeus says, "By the Oeconomy of Nature we understand the all-wise disposition of the Creator in relation to natural things, by which they are fitted to produce general ends, and reciprocal uses" ("Oeconomy" 39). White echoes, "Nature is a great economist" who "seldom works in vain" (136), and Traill agrees:

Unseen and unnoticed by us, every atom has its place and its part to fulfill. Nothing is lost. In God's economy we trace this fact everywhere. ("Fragments" 236)

Where she can, Traill adds other ordering schemes (notably the chain and the cycle), most of which initially seem to devolve from White's *Selborne*. While White's schemes work well in his sheltered, apparently unchanging, pastoral world of Selborne, they seem inadequate to contain a rapidly changing Canadian frontier landscape. Accordingly, Traill—who possesses a keen eye and an insatiable curiosity—begins to add selections from scientific knowledge gleaned from other sources¹⁴ and in the process, to reveal her unique response to the natural world. One obvious reference in "Fragments" is to the French chemist and natural historian, Count Antoine F. Fourcroy (1755-1809), a logical

choice for Traill in this essay since he treats of the decomposition of vegetable matter in such works as *Systeme des Connaissances Chimiques* (1802-1802).

To begin with, though, Traill draws upon standard patterns laid down by White in his Selborne natural history letters. Although limited spatially to the environs of his parish, White's nature teems with life. As he says, "[A]ll nature is so full, that district produces the greatest variety which is the most examined" (51). Nothing escapes notice; everything has value: "Earth-worms, though in appearance a small and despicable link in the chain of Nature, yet, if lost, would make a lamentable chasm" (182). Heading the "chain of Nature," of course, is man—who has an obligation to enjoy nature and to utilize it for his own purposes. As Linnaeus notes in "The Oeconomy of Nature," "all these treasures of nature so artfully contrived, so wonderfully propagated, so providentially supported throughout the three kingdoms, seem intended by the Creator for the sake of man. Every thing may be made subservient to his use" (123). Nor is nature so perfect that man cannot effect improvement, for as White says, "The botanist that could improve the sward of the district where he lived would be a useful member of society" (196).

Traill portrays a similarly diverse world within a small physical space. In "Fragments" the subject is a decomposing tree within walking distance of home, yet the focus expands as Traill includes other flora and fauna, intricately and essentially linked in a chain of nature where "every atom has its place" (236). She turns her attention from "various insect larvae" (237) to human pioneers, from "minute vegetable growths" (239) to "the old giants of the forest" (237). Man is positioned at the top, and the settler uses the rich soil (created by the natural decomposition of the forest trees) for his own purposes:

He sows the wheat and corn upon the rich black vegetable mould, but he may not think that he owes much of its fertility to the unseen, insignificant agents that for unnumbered ages, under the direction of the infinite God, have been preparing the ground to receive the grain for the life-sustaining bread for himself and his children. (241)

But note that man is a "stranger" (241); driven by necessity, he "must cut down the living trees and clear the ground with axe and fire" (241). The diction hints at Traill's discomfort with a complaisant acceptance of Linnaean-White thinking.

When the pastoral pattern fails, it is tempting to link Traill's evident belief in the pioneer's right to conquer frontier lands with someone like

Alexander von Humboldt (1769-1859),¹⁵ an explorer-botanist whose four "principal commandments" (Walls 98) were, like Traill's, to explore, collect, measure, connect (Walls 98). Again like Traill, von Humboldt was interested in the interacting forces within an ecosystem. He says:

I shall endeavor to find out how nature's forces act upon one another, and in what manner the geographic environment exerts its influence on animals and plants. (as cited in de Terra 87)

This scientist gained immense popularity in the United States for his open support of the conquest of the North American landscape "by right of science, progress, and knowledge" (Walls 106). Even as Traill parrots similar beliefs, however, she undercuts assertion with seditious diction as well as with openly expressed regret. Like von Humboldt, she would claim that man has a right to fashion new world nature to serve his needs, but she also sees a stable, functioning order within the indigenous landscape, one which is destabilized and eventually destroyed by human intervention.

Many versions of "Fragments" are scattered through Traill's work, and all feature this dichotomy. See for example "The Forest and its dependents" in the Traill Family Papers (1838-1858) where she says:

I think of the lovely wild flowers that year by year are being swept from the face of the earth by the advancing march of civilization on our forest soil.

Yet this extermination of the native plants must necessarily take place—Man to whom was given dominion over the herbs of the field as over the fowls of the air and beasts of the forest will not stay his onward progress for the sake of the fair frail forest flowers springing up in his path when he wages war with axe and fire against the trees of the wood those vegetable giants that stand in the way of the nutritive grains which he is ready to cast upon the virgin soil to be in due time converted into the life sustaining bread—(2: 3339)

In a letter to the editor of the *Genesee Farmer* (1852), she refers to the farmer's crop as "the foreign usurper" (*I Bless You* 75) of the "lovely children of the forest" (75). The Preface to *Studies of Plant Life* regrets that, as cultivation "destroys the native trees," many of "our beautiful wild flowers, shrubs and ferns will, in the course of time, disappear from the face of the earth and be forgotten" (ii). And in "A Glance Within the Forest" (1874), Traill adds, "To those who love the forest and its productions, the continual destruction of the native trees will

ever be a source of regret" (53).

This discomfort with popular and/or traditional thinking becomes more apparent when we look at Traill's use of cyclical patterns in her writing. While White may examine the cycle of the seasons or the life cycle of a plant or animal, his work is an inadequate foundation upon which to build a frontier ecology. "Fragments," for example, begins with, then rejects a rhythmic cyclical structure. The life cycle of the forest tree provides one of the textual movements in "Fragments." From the present, when the tree lies decomposing at her feet, Traill looks back in time to create imaginatively the tree's interactions with other flora and fauna in a mutually dependent ecosystem:

The earth had sustained it year after year, giving strength and support to the mighty trunk from its store of mineral substance through the network of cable-like roots and fibres....

But while the tree had been receiving, it had also year by year been giving back to earth and air, in an altered state, something that it did not require for itself. It had given back to the earth fresh matter, in the form of leaves, decayed branches and effete bark and fruitful seed. It had purified and changed the gases that it had first inhaled, and deprived them of the properties that were injurious to animal life. (237-238)

Then Traill looks ahead to a time when the tree will be converted to a "rich black vegetable mould" (241).¹⁶ At this point the cycle should begin again—but it does not. The settler arrives, and the cycle of nature, as well as a cyclic pattern in the essay's structure, is broken. As narrator, Traill invites her reader to join her on a walk into the woods: "Let us rather go into the forests" (236). Once there, the reader is asked to look with her at a tree: "Here lies one of the old giants of the forest at our feet. Take heed how you step on it" (237). But narrator and reader do not exit the forest together; nor does it seem likely that there will be any more such walks once the settler's "axe and fire" has killed the "living trees" (241), and his plough has turned over the rich black soil.

Breaking the cycle of interdependence appears in other versions of "Fragments," as for example, "The Forest Monarch and His Dependents" (1852), a moral tale which is rewritten and expanded to appear as "The Lofty and the Lowly" in *Cot and Cradle Stories* (1895). Here Traill creates a moral children's story where the flora and fauna dependent on the majestic oak fail to appreciate their mutual need. When the "grand old tree" (*Cot* 126) is cut down, significantly by avaricious men who seek only financial gain ("there is money in it" [126]), the ecosystem fails—an object lesson to the ungrateful forest

creatures. The squirrels, butterflies, bees, and birds may move on, but the flowers must perish:

Alas! the poor ferns and the violets and grasses were so trodden down, crushed and shapeless beneath the heels of the axe-men, they had little life left in them. The winter came, but the ground was bare and there were no sheltering leaves to cover them. The frosts nipped the roots, the summer heat withered them, and thus uncared for they perished. Too late they repented of their envy and ingratitude, and learned that the oak had been their best friend for all time and seasons. (*Cot* 237-8)

As in "Fragments," man is the destroyer.

"A Glance Within the Forest" (1874) closely echoes "Fragments" in the focus on a decaying tree, the insistence on "the wise economy of the Great Creator" (48) even in the midst of "confused trunks of fallen trees, broken branches, and every sort of decaying *debris*" (48). Traill follows the decomposition up to the "fine fertilizing mould" (49); in this instance, however, she does not stop, but goes further into the future to describe "a tiny forest nursery" (49) in the "variety of seedlings" (49) which spring up to regenerate the cycle. Or look at "A Visit to the Camp of the Chippewa Indians" (1848),¹⁷ where decaying cedars are covered with "a variety of ferns, fungi, mosses, and small plants" (117). Traill remarks, "You often see a flourishing growth of young pine, hemlocks, swamp elm, and other seedling trees on these trunks" (117); a circle closes to begin again.

On occasion Traill resorts to other patterns in her continuing attempt to justify pioneering. For one thing, she is aware of Charles Lyell's¹⁸ theory of natural geological progression, as is indicated in her comments on the "slow but constant action" ("Fragments" 236) of forces in nature:

The waves of the mighty ocean are kept back by the atoms of sand worn down from the lofty hills and rocks by the action of the winds and rains and frosts of past ages...

Atom by atom were the lofty hills built up; atom by atom are they laid low. ("Fragments" 236)

Lyell's theory assumes an inherent stability in nature: "the earth is in a dynamic steady-state, with competing forces like uplift and erosion cancelling each other out from a global perspective" (Smith 96). The Lyellian insistence on stability rules out any attempts to view the

process of pioneering as part of a natural progression of the landscape, especially since, in Traill's view, pioneering involves rapid and absolute change.

Once Traill has broken a cyclic pattern and has acknowledged the validity of Lyell's work, however, it is a relatively short distance to Charles Darwin and evolution. In fact, at least two of the early pieces of the "Fragments" essay come perilously close to Darwinianism. "Voices from the Canadian Woods. The White Cedar" (1876), notes that cedars grow on higher, dry land as well as in swampy areas. Traill hypothesizes that "in process of time" (494), these trees will convert dry soil to damp because of the "dense mass of branches" (494) which prevent evaporation of ground water:

A change is effected, both in the soil and its products, which might lead us to the conclusion that many of our cedar swamps have thus been originated where once a very different order of things existed. Such facts are suggestive of the changes that are continually taking place in the country, and are not without interest to students of causes and effects as regards the physical geography of our land. ("Voices" 494)

"The Forest and its dependents" (TFP 1838-1858) is even more radical in its extension of Lyellian theory into Darwinian speculation. The work begins, typically, with Traill's double vision: she regrets the loss of "the fair frail forest flowers" which are destroyed "with axe and fire," even as she defends the "extermination" as something that "must necessarily take place" (3339). Man, she says, "was given dominion over the herbs of the field as over the fowls of the air and beasts of the forest" (3339). The subsequent development of the journal entry (containing unpublished ideas) departs from Traill's more typical musings on nature, even as she continues to look for containment of the changing frontier ecology within a recognizable pattern:

Let us cast our thoughts backward and imagine a time when these countless millions of acres of forest did not exist in Canada—(3342)

Traill says that the trees around her in Canada are not the "grand primeval forests" (3342) of England; rather Canadian trees have a short life span of only one to two centuries and are the usurpers of a formerly "smiling earth...covered with flowers and flowering shrubs and fruit bearing herbs" (3344). The trees, in turn, are quickly usurped by others:

The hold which the tree has on the soil is here comparatively a slight one the roots merely spreading along the surface and

extending to no great distance—So many rivals surround it on every side that its chances are but slender of deriving a sufficient nourishment from the soil to attain any great size of of [*sic*] stem.

It is a race for life for air for light in which the most vigorous grower is most apt to win the prize but only to attain to a swifter destruction—The tempest that is hardly felt among the trees of weaker growth and that scarcely ruffles the tender saplings plays with resistless power among the lofty heads of the taller trees which have soared above their fellows. (3343)

Ultimately, Darwin's ideas cannot explain or contain the abrupt changes of pioneering, and while Traill may speculate privately about natural selection, she keeps such thoughts to herself.

After experimenting with a variety of patterns in the many rewritings of "Fragments," Traill falls back on Christian faith. She concludes the journal essay "The Forest and its dependents" by saying, "The Lord of Nature has many powers to do his bidding" (3345). In "Fragments," after man has wrought devastation with axe and fire, Traill returns to the beginning of the essay with a second paraphrase of the Bible, "Gather up the fragments left over, that nothing may be lost" (John 6: 10), coupled with a correct citation of Psalms 107:43: "Whoso is wise, and will observe these things, even they shall understand the lovingkindness of the Lord" (241). This can be construed either as an easy way out for Traill or as a type of Christian ecology—God is in control, and his long-term plan outweighs obvious and immediate environmental change.

At any rate, there are clear indications, both in "Fragments" and in other versions of the essay, that Traill is deeply disturbed by the impact of man on a viable, self-sustaining (possibly evolving) ecosystem. Whether she has made a "distinguished contribution" (Cole 79) to science or is merely a "distant and small player" (*Forest Gleanings* 13) in nineteenth-century Canadian science, it is apparent that this talented amateur has thought deeply about her environmental responsibilities. Trained to see the world through imperialist eyes (and limited in formal training), Traill should have been an eager pioneer—and she argues forcefully for the settler's right to alter the frontier from forest to field. But she also saw that by pioneering, she and her fellow immigrants had forever destroyed a working ecosystem. That she returns repeated to the same issues would seem to indicate that despite her Christian faith, Traill was never entirely comfortable with an intrusively imperial ecological role.

Notes

1. See Bentley's Afterword, Peterman and Ballstadt's *Forest*, and Thompson's "Illustrations" and *Pioneer Woman* for discussions of Traill's vision. [\[back\]](#)
2. Traill's last book, *Cot and Cradle Stories*, was published in 1895 when Traill was ninety-three years old. [\[back\]](#)
3. Peterman and Ballstadt, *Forest* 13. [\[back\]](#)
4. See for example the Traill Family Papers (TFP) 2: 3152-3162. The date of this entry, "Visit to the Wigwam on the Island," is 1836, and it contains some of the material used in "Fragments." See also *Studies of Plant Life*. For further examples, refer to the bibliography. [\[back\]](#)
5. White's book was influential in the development of the natural history essay; in a series of letters, he describes the flora and fauna of his English parish. Worster asserts, "It was also one point of origin, representative if not seminal, for the modern study of ecology" (5). Traill refers to White in *Studies of Plant Life* (1885), where she ventures to hope that her book may become "a household book, as Gilbert Whil's Natural History of Selborne is to this day among English readers" (3). See also Berger 35-7. [\[back\]](#)
6. Carl von Linné (1707-1778), more commonly known as Linnaeus, standardized botanical reference by classifying things according to family and species. Traill mentions "the great father of botany, the good Linnaeus" in *Studies of Plant Life* (50). [\[back\]](#)
7. References occur throughout *Pearls and Pebbles*. See pages 37, 60, 70, 87. [\[back\]](#)
8. As for example, references to McIlwraith's *Birds of Ontario* (1886) in *Pearls and Pebbles* (60); Traill also relies on Pursh's *Flora Americae* (1814). [\[back\]](#)
9. Traill uses Linnaeus but makes an error here; Bryum, Hypnum, Mnium are species, while Dicranum is a variety of Mnium. See *Systema Naturae* 2: 1284, 1328. [\[back\]](#)
10. In *Backwoods of Canada* Traill confesses her limited education:

Deeply do I now regret having so idly neglected you kind offers while at home of instructing me in flower-painting; you often told me the time would come when I should have cause to regret neglecting the golden opportunity before me.

You proved a true prophetess; for I daily lament that I cannot make faithful representations of my adopted country, or understand as you would do their botanical arrangement. With some few I have made myself acquainted, but have hardly confidence in my scanty

stock of knowledge to venture on scientific descriptions, when I feel conscious that a blunder would be easily detected, and expose me to ridicule and contempt, for an assumption of knowledge that I did not possess. The only botanical work I have a tmy command is Pursh's North American Flora, from which I have obtained some information; but must confess it is tiresome blundering out Latin descriptions to one who knows nothing of Latin beyond what she derives through a knowledge of Italian" (190). [\[back\]](#)

11. See *Backwoods of Canada* for two types of water lilies, "queen of the lakes" and "water-king" (192). [\[back\]](#)
12. Alexander Pope's *Essay on Man*, Epistle I, lines 289-90. [\[back\]](#)
13. The word "economy" has a long history of connection with the divine management of the world. See *OED* for an overview. Throughout the eighteenth and nineteenth centuries, "economy" was used to refer to the interacting organization of life on earth. God is the "Supreme Economist who had designed the earth household" and "the housekeeper who kept it functioning productively" (Worster 37). [\[back\]](#)
14. See Chapple's comments on the importance of literary and scientific journals to disseminate scientific knowledge; literate readers, for example, could understand chemical articles, at least in the early part of the nineteenth century, before the language became more inaccessible to the amateur. Chapple points out that during the early decades of the nineteenth century, science was very much integrated with the culture of the age (6). [\[back\]](#)
15. See Alexander von Humboldt's *Aspects of Nature* (1850). [\[back\]](#)
16. See Fourcroy's *Système*, volume 7, in "Des utilites ou du role des végétaux dans l'économie de la nature" for a similar discussion (33). [\[back\]](#)
17. In this essay Traill uses the Biblical quotation on fragments which years later opens "Something Gathers Up the Fragments." [\[back\]](#)
18. Lyell's *Principles of Geology* (1830) influenced DARwin's studies into evolution, even though Lyell refused to accept DARwin's conclusions until the 1860's. Lyell also rejected "almost any kind of progressionism in the organic and inorganic world" (Smith 96). [\[back\]](#)

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