

# Signs and Symbols: Literature, Science, and the Legitimacy of Nature Writing

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## ABSTRACT

The genre of nature writing in effect begins in the 18<sup>th</sup>-century with writers like Gilbert White, for whom *nature as nature*—not as a symbol of something beyond it—is placed in the foreground, and for whom this nature is taken as a whole of which humans are just one part. The revolutionary aspects of this new “literary” approach to nature have a certain connection to the revolutionary sociopolitical changes taking place in Europe and North America in the late 18<sup>th</sup> century (“Romantic” period). But the purest, most direct description of nature must inevitably be a “scientific” description, one which is essentially non-fictional—as in White or Thoreau. This presents a kind of dilemma: on the one hand “nature writing” cannot be as scientific as science itself, since we are still concerned here with a sort of concrete narrative prose (the narrator as naturalist, observer of nature) and not with the abstractions of biology, chemistry or physics; on the other hand such writing cannot be mythic, metaphorical or symbolic in the manner of (traditional, modernist and postmodernist) narrative “fiction,” since after all it is fundamentally “non-fictional.” The argument set forth here is that nature writing must then steer a kind of middle course between these two alternatives. Therefore this genre needs to be more clearly situated in relation to postmodern discussions of “grand narratives” (Lyotard)—if even history and science are narratives then there is no “absolute truth”—and of the discontinuous stages of a European history (Foucault in *The Order of Things*) which moved from a pre-1600s “world of resemblances” (“signs”) to a post-1600s Galilean world of “analogy” and “representation.”

## KEY WORDS

nature writing

*The Natural History of Selborne*

grand narratives

Alan B. Gross

Gilbert White

Henry David Thoreau

Annie Dillard

*The Rhetoric of Science*



Nature writing, considered as a genre, is a rare oddity in Western literature—something that seems to be genuinely new. While other literary genres such as satire, romance or tragedy can trace their antecedents to classical times, nature writing, in contrast, is linked quite firmly to the development of modern scientific thought.<sup>1</sup> Poets, novelists, and essayists have always written about nature, of course, but when nature has been portrayed in literature, it has usually taken a secondary role to some other concern. Nature's "order" has often been used to "reveal" the existence of God, for example, while its charming "disorder" has provided the backdrop for many absorbing human dramas. Storms and sunny days have been used to create and echo any number of human moods, and nature has always been a ready storehouse of poetic symbols and metaphors. While nature still fulfills all of these functions in literature today, in the eighteenth century, it emerged from the literary background, was placed firmly on center stage, as a subject to be examined in and of itself.

This startling move has been interpreted by some as being an indication not of a healthy new interest or relationship with the natural world, but as a response to a troubling estrangement from nature. As Robert Torrance has argued,

Only when refined urban civilizations begin to undergo breakdown or turbulent change—as in Hellenistic Greece, medieval Japan, and Europe at the convergence of industrial and political revolution—have writers searched in the natural world for a wholeness the human world appears to have lost, and evolved new forms of writing to overcome division from it.<sup>2</sup>

In modern society, these new forms often included a view of the natural world which was not only an all-encompassing presence or powerful force, but something which had become vulnerable and which needed protection from human actions. At this point, as Clarence Glacken has noted, "man as the modifier of nature" became a central literary concern.<sup>3</sup> The role of much nature writing since that point has been to direct human attention to these areas of concern, often by focusing on "endangered" or "disappearing" plants, animals or ecosystems.

Accompanying this shift in perception, and contributing to the format which would eventually emerge as the modern natural history essay, was the abandonment of literary set pieces in favor of personally observed and accurate description of natural phenomena. That completely delightful book, *The Compleat Angler* by Isaak Walton, for example, is seldom included in collections of nature writing because Walton relies on pastoral conventions for his effects, and on the authority of classical writers rather than personal observation. Walton's work demonstrates an attitude which fuses human and natural worlds, the literary and the natural, scriptural authority with the secular. No one source is seen as more reliable than any other, and all contribute to an experience of nature which evolves from another, and to us, more puzzling age. For example, Walton tells us:

[I]t is reported by good Authors, that grasshoppers and some Fish have no mouths, but are nourisht and take breath by the porousness of their Guills, Man knows not how; And this may be believed, if we consider that when the *Raven* hath hatcht her eggs, she takes no further care, but, leaves her young ones, to the care of the God of Nature, who is said in the *Psalms*, *To feed the young Ravens that call upon him.*<sup>4</sup>

Walton writes, not as someone whose primary concern is with the natural world but, as one critic has noted, someone for whom "love of angling is an outward and visible sign of an inward and spiritual grace."

Gilbert White's *The Natural History of Selborne*, on the other

hand, is composed of letters to the Royal Society, and is based entirely on his personal experience of nature. He clearly finds the natural world intensely interesting not for what it symbolizes, but simply for itself. In spite of White's relative obscurity vis-à-vis the literary canon, his vision does seem to answer a deep need in people experiencing the effects of global urbanization: White's book about the quiet country life of Selborne is the fourth most published book in the English language, and translations, particularly into Japanese, are numerous.<sup>5</sup> White does not rely on scriptural or classical authority in making his comments about the natural history of his area, and he is cautious about reported occurrences and folk beliefs, such as the efficacy of using toads to cure certain illnesses. White worries about swallow migration (do they fly to Senegal or hibernate in caves?), describes the intricacy of a field mouse's nest, carefully examines the castings of owls to determine what the creatures eat, and measures a pond to calculate its acreage. This spirit of curiosity, of looking, listening, and recording, opens his eyes to the staggering diversity of the natural world, for "all nature is so full, that that district produces the greatest variety which is the most examined."<sup>6</sup> Furthermore, there is in his combination of interest, delight, precision, checking, and record-keeping the very best of scientific attentiveness. Compare White's direct observation of a raven with Walton's description:

There is a peculiarity belonging to ravens that must draw the attention even of the most incurious—they spend all their leisure time in striking and cuffing each other on the wing in a kind of playful skirmish; and, when they move from one place to another, frequently turn on their backs with a loud croak, and seem to be falling to the ground.<sup>7</sup>

This is a raven which is available to us today: we, too, can watch the display flight of the male raven, similar to the one White describes, though we would be hard pressed to find contemporary evidence of Walton's bird. Nature writing, then, is a way of directing a reader's attention to the natural world; it is a kind of invitation to a broader

world, one badly needed in an age when humans feel they are separated from the rest of nature.

White's work taken in its entirety gives us a powerful impression of nature's wholeness. In his letters, White describes Selborne as a textured place filled with many lives—domestic and wild animals, birds, fish, reptiles, plants—of which humans are only a very small, and perhaps not even the most interesting, part. This has rather revolutionary implications for the development of the nature-writing genre which followed his work.

White's vision and style were frequently replicated in the nineteenth century as the exploration of North America by Europeans gave further impetus to the idea of concentrating upon and paying greater attention to nature. First glimpses of North America, for example, often reveal "the ravished observer, fixed in awe,"<sup>8</sup> astonished by seeing for the first time, a land which, unlike Europe, which, as one historian has noted, was (relatively) "ecologically intact."<sup>9</sup> In North America the act of looking and recording, unfortunately, became particularly urgent as it was soon linked to the recognition that the continent was rapidly being transformed.<sup>10</sup> The differences between a land "ecologically intact" and one intensively cultivated and transformed also provide an explanation for the nationalistic differences which developed in nature writing—in Britain the love of nature most often took the form of a civilized "rural writing,"<sup>11</sup> while in the United States it developed into the cult of "the wild." Henry David Thoreau, while tracing his literary influences to White,<sup>12</sup> clearly modified White's essentially civilized approach to nature. Thoreau was not content in just carefully observing: he wished to immerse himself in nature through touching, eating, feeling his way, until he was able to "front only the essential facts of life."<sup>13</sup> Whether he is writing about ocean storms in *Cape Cod*, a woodchuck in *Walden Pond*, or the flanks of a mountain in *The Maine Woods*, he is always pre-eminently interested in what is wild and untamed (or, in the case of the woodchuck, what is uncooked). Thoreau took what was initially a straightforward recording of "what is there," bequeathed to him by White, and turned it into a much deeper and more philosophical quest, repeatedly asking what kind of relationships humans should have

with the natural world. Perhaps his greatest contribution was to value and teach others to value what was "wild" in nature.

Over the years since Thoreau wrote, many "nature writers" in the United States have scrutinized the North American landscape, and have struggled over and over again to express the meaning they have experienced in their relationship with the land. These writers shared the sense that a "new" language was needed to adequately express the wildness of the North American continent—that the symbols, metaphors, stories and genres that were adequate for the English landscape would not work in the North American context.<sup>14</sup> Americans, perhaps, needed "nature writing" simply to make sense of a new landscape and the new experiences engendered within it. From John Muir in the high Sierras to Edward Abbey in the Southwestern desert; from Mary Austin to Annie Dillard: each voice, whether one of religious ecstasy or outrageous satire, nevertheless, shared in a collective and profound respect for what is "wild" in nature. It is the most characteristic feature of American nature writing, so characteristic, in fact, that the writer Edward Hoagland made a tongue in cheek suggestion that this particular type of nature writing should be called "writing wild."<sup>15</sup>

Much scholarly interest in the new genre has emerged over the past decade.<sup>16</sup> Countless collections of nature writing have been published, courses in nature writing are now offered routinely in many U.S. schools, theses have been written, and numerous scholarly works published which attempt to define the qualities of the genre. While such assessments vary in terms of what particular aspect or author they wish to highlight, all agree in their exclusion of fiction from the genre. Peter A. Fritzell, for example, makes the astonishing suggestion that nature writing is "fundamentally an American phenomenon" which blends "impersonal science" with "egoistic personal narrative and reflection,"<sup>17</sup> while Thomas Lyon attempts a taxonomical exercise which places the variety of forms nature writing takes within a wide spectrum of field guides, natural history essays, rambles, essays dealing with solitude or the back country, travel and adventure, farm life, as well as more philosophical musings.<sup>18</sup> John Elder defines the genre as "personal reflective essays grounded in appreciation of the natural world and of

science, but also open to the spiritual meaning and value of the physical creation.”<sup>19</sup> David Rains Wallace, himself a nature writer, suggests that while nature writing can take different forms, they all have something in common: an appreciative aesthetic response to a scientific view of nature.<sup>20</sup> What these assessments, and others like them, share is the sense that the genre which claims to “speak for nature” is primarily a nonfiction genre which has tied to scientific thought.<sup>21</sup>

Criticisms of this nonfictional bias have also appeared in recent years.<sup>22</sup> Patrick Murphy, for example, makes the case that such narrowly focused definitions of “nature writing” unduly restrict the possibilities for exploring and discovering new aspects of the human relationship to nature. He believes that we should be broadening our understanding of the genre, and talking about a “nature oriented” literature that is multicultural, and includes fiction, poetry, and other mixed genres. In taking to task editors, academics, and literary critics who tend to cling to older, more traditional notions of the genre, Murphy suggests that it is “curious” that in discussions of nature writing, literary works that do not meet the nonfiction criterion are all but ignored.<sup>23</sup>

Actually, such a bias toward nonfiction is hardly curious. From White onward, the genre is expected by readers to provide a truthful, factual, nonfictional re presentation of the natural world. Stories about nature fail the authenticity test, however, not because of a lack of “information” or “facts,” but because they are stories and do not have the “legitimacy” of nonfiction. Built into the very history of the genre is the notion that the true observer of nature is objective and accurate—a type of “*ur*-scientist,” if not actually a scientist in the modern sense of the term. Stories, no matter how many facts, no matter how much information they may contain, do not possess the same degree of legitimacy which would allow them to also speak authoritatively “for” nature. That the “truth” about nature is contained primarily within statements of fact is, hence, one of the strongest assumptions underlying most discussions of the genre. It is a belief that is a fundamental underpinning of most approaches to nature writing because the scientific understanding of the natural world is an understanding which has been privileged in the modern world.

Excluding fiction and poetry as sources of authentic knowledge about nature, of course, is not new. But the reasons for this exclusion can be better understood by looking again at the history of the genre, and at a Canadian example. Canadian nature writing, which developed in a slightly different way from the American version, claims as one of its most distinctive features, the fictionalized animal story. In the introduction to his collection of nature writing about Canada, for example, Wayne Grady offers a rather traditional definition of the genre, but is distinctly nontraditional in including animal stories in his anthology.<sup>24</sup> Animal stories in the form of fables, legends, and myths, are universal in all cultures, but Canadian writers such as Charles G. D. Roberts and Ernest Thomas Seton developed a slightly different version when they linked these stories to their own natural history studies. Seton, in particular, was a respected naturalist and one of his proudest works was a survey of wildlife undertaken for the government of the province of Manitoba. In his capacity as an "official" naturalist it was not unusual for him to undertake such onerous tasks as counting the number of feathers on a bird, for example.<sup>25</sup> Roberts is equally insistent that the animal story be "constructed on a framework of natural science" while the authors themselves "are minutely scrupulous as to their natural history."<sup>26</sup>

Descriptions of animals in nature writing are usually presented as "slice of life" of non-fictional vignettes. Seton and Roberts, on the other hand, presented animals and birds within a fictional narrative. The narrative story has an odd result: it presents animals who have intelligence, who can learn, and, most important of all, can feel. Roberts' Red Fox is apprehensive, filled with anger; he hates white arctic hawks "virulently," he is by turn cautious, puzzled, astonished, playful or elated.<sup>27</sup> Seton's Redruff, the Don Valley Partridge, feels the thrill of spring, just as surely as he feels the cruelty of the poacher's snare.<sup>28</sup> Roberts's and Seton's books are filled with references to "cunning," mother love, parental pride, and so on.

Other naturalists, writing at the same time, were deeply suspicious of such stories of nature and the sentiments they expressed, and this suspicion has continued to permeate critical discussion on the subject.

The American John Burroughs, for example, was one of the first naturalists to express annoyance with the “animal stories” of Seton, William J. Long, and Jack London. He did so by protesting against the “false science” in their works. While Burroughs at an earlier point in his career characterized nature writing as a partnership between science and literature, claiming that while “the interests of the two in the universe are widely different, yet in no true sense are they hostile or mutually destructive,”<sup>29</sup> by 1903 he was alarmed enough about the prestige of “nature writing” to attack the writers of animal stories. In particular Seton’s stories about Raggylug the rabbit, or the crow Silverspot, seemed to touch a raw nerve with Burroughs. “Such dogs, wolves, foxes, rabbits, mustangs, crows as he has known, it is safe to say, no other person in the world has ever known,” Burroughs wrote in the strikingly titled article, “Real and Sham Natural History.”<sup>30</sup> Burroughs at this point found that writers who deviated too much from a “scientific” viewpoint jeopardized the tenuous status of a discipline based upon the veracity of individual observation. If there was any fudging going on, it called into doubt the remaining authority of all natural history—just at a time when more rigorous forms of science were emerging which would contest even the non-fictional side of “nature writing.”

Scholarly queasiness over fictionalized accounts of nature, such as the ones by Seton, offers some intriguing insights into the genre as a whole, into critical discourse, and into the question of the relationship of nature writing, and into the whole issue of what constitutes legitimate knowledge about nature. The dismissal of animal stories as significant ways to both interpret and understand nature demonstrates a profound misreading of the genre and its possibilities. For many American critics, animals stories seem to provide little more than a bizarre historical footnote to the field of natural history,<sup>31</sup> while in the Canadian case, the animal stories of Seton and Roberts are so central to literary and cultural concerns that their significance cannot be denied.<sup>32</sup> In his discussion of Seton and Roberts, for example, Robert MacDonald insists that it is “evident that the animal story belongs not to the world of natural science, but to the world of literature.”<sup>33</sup> The animals in these

stories, MacDonald assures us "are not so much animals as emblems, symbols of a more perfect world" (27) who have crossed from "realism into romance" (25).

That few are quite willing, as yet, to allow that fiction might also contain fundamental, important and legitimate knowledge about the natural world, is a result of the uneasy tension between personal observation and the ever greater authority of science which has emerged since White wrote. It is also an old tension, as can be seen from the "nature-faker" controversy. While it might be allowed that these stories might uncover "symbolic" truths or function as elaborate allegories, they nevertheless fail the fundamental test of providing the untainted "neutral" knowledge about the natural world that a more rigorous scientific approach would supply.

Animal stories, then, form an interesting crux within the nature writing genre, from which it is possible to see how our understanding of "nature" developed. Literary historians are uncomfortable with all types of animal stories: sentimentality, anthropomorphism, and the pathetic fallacy which appear in abundance in stories from Seton to Farley Mowet, are said to be de facto indications of "bad writing." "Animal stories" themselves are almost synonymous with "sentimentality" and are often considered most suitable for childhood learning about the natural world. Older children will be taught that nature is "best" investigated scientifically.

Crucial to the understanding of what constitutes "knowledge" in contemporary societies is the question of legitimacy, as Jean-Francois Lyotard has pointed out in *The Postmodern Condition*. Unlike scientific knowledge, knowledge contained within narratives or stories, however, does not give priority to these questions of legitimacy. Since narrative statements cannot be subject to "argumentation" or "proof," they thus fail the contemporary test of "legitimation." How easy it is then for the scientist to classify those adhering to narrative knowledge as "belonging to a different mentality: savage, primitive, underdeveloped, backward, alienated, composed of opinions, customs, authority, prejudice, and ignorance. Narratives are fables, myths, legends, fit only for women and children. At best, attempts are made to throw some rays of

light into this obscurantism, to civilize, educate, develop.”<sup>34</sup>

Alan B. Gross in *The Rhetoric of Science* underscores this point when he writes that “traditionally, in the hegemony of knowledge, science has been the master . . . rhetoric the servant.”<sup>35</sup> What this means, practically, is that the sciences have created “bodies of knowledge so persuasive as to seem unrhetorical—to seem simply, the way the world is . . .” (207). Science, a human activity, nevertheless does not appear to “invent” the world as the arts do; rather, it reports on its “discoveries.” This has had profound implications for our sense of what is true about the world. The poet might hear the sound of a tree weeping as it is being cut, and we will be allowed to applaud the metaphor, but science tells us that trees are not sentient, and cannot feel. It might be upsetting to see a whale’s death throes on television, but the scientist will tell us that the species has healthy numbers, and can sustain a cull. The mastery of science over rhetoric thus reaches into and overwhelms all other branches of humanistic knowledge from ethics to aesthetics. And, as Lyotard points out, this has created an imbalance in terms of the way the natural world is interpreted and understood:

This unequal relationship is an intrinsic effect of the rules specific to each game. We all know its symptoms. It is the entire history of cultural imperialism from the dawn of Western civilization. It is important to recognize its special tenor, which sets it apart from all other forms of imperialism: it is governed by the demand for legitimation. (27)

Contemporary nature writers, like Burroughs in the nineteenth century, frequently talk about creating a “partnership” between science and literature. They call for many “types” of approaches to nature, pointing out, as a writer such as Barry Lopez frequently does, that the scientific view is but *one* view among many, and that it cannot provide a complete picture of any landscape or animal.<sup>36</sup> While there are calls by nature writers such as Lopez to heed the many voices which collectively create the “language of the world,” such tolerance is possible only because they claim to perceive scientific truth as but one kind of

truth among many legitimate possibilities. Perhaps here they are harking back to the meaning of natural history that Michael Foucault uncovered in *The Order of Things*. In that book he points out that to condemn medieval bestiaries—or writings like Walton's—for their "inaccuracies" is to miss the point—the pre-modern truth about nature revealed itself in an unbroken tissue of words, signs, accounts, discourses and forms. Foucault writes:

When one is faced with the task of writing an animal's history, it is useless and impossible to choose between the profession of naturalist and that of compiler: one has to collect together into one and the same form of knowledge all that has been seen and heard, all that has been recounted, either by nature or by men, by the language of the world, by tradition or by the poets. To know an animal or a plant, or any terrestrial thing whatever, is to gather together the whole dense layer of signs with which they may have been covered.<sup>37</sup>

However, this view of truth is not one which describes our present era. Even when a nature writer such as Lopez insists that science is but "one" way of knowing, and that fiction and poetry might also provide insights into our relationship with the world, we are prepared to accept this only on a provisional basis, and only as long as the more powerful discourse of scientific truth is not challenged.

Hence, although much "nature writing" contains passionate arguments against a unidimensional, scientific vision of the world,<sup>38</sup> the restricted nature of the genre imposed upon itself by writers seeking scientific legitimacy is the result. The "invitation to form"<sup>39</sup> of the nature writing genre suggests the model which will be followed will inevitably be a narrative "I" glancing out at the world to record what he or she observes. Given the pre-eminence, prestige and legitimacy of science and the scientific method, it is difficult to see any way that stories can become "legitimate" purveyors of knowledge about the natural world. Such an exclusion has proven disastrous, for it means

that what can be “known” about the natural world is severely limited. Further, the fact that this is a limited view, that it might not reveal all there is to know about the natural world, or even what is desirable or important to “know,” is a doubt which frequently arises as ecological concerns deepen.

This leaves us with a dilemma: if “legitimacy” belongs to certain branches of knowledge, then no amount of pleading can make a poet’s words part of an environmental impact assessment. No one is invited to talk about their “feelings” for nature when a decision must be made as to the clear-cutting or deforestation of another natural area. Fables are not read when fishing quotas are set. We do not turn to novels when we want to find out about the impact of pollution. This is odd, for novels, fables, poetry surely have much to say about all these issues, and if there ever was a need to heal the debilitating separation between science and literature, it is at the present moment. Obviously, when we are faced with problems such as species extinction, pollution, global warming, genetic engineering, and so on, we need to be able to hear the stories of ecological crisis. We need to have our feelings stirred, our indignation roused. But even more important, we need to believe that such feelings are legitimate, even as the mitigation experts work to reassure us, and tell us that we really can “have it all” as long as we listen to them rather than to our own hearts.

Hence, it is more important now than ever before that our sense of what constitutes legitimate “nature writing” be enlarged. In the past, a writer might have prepared for a future career in nature writing by immersing himself or herself in the study of biology or zoology. Now we must look for writers able to straddle not only science, but literature and culture, and to have the facility to speak in the languages of both. In doing so, perhaps literature can once again claim an ethical and aesthetic legitimacy as powerful as the legitimacy claimed by science. Certainly there have been such writers in the past though we do not usually think of them as “nature writers” per se, writers such as Goethe, Andre Gide, or Vladamir Nabakov, who are writers of great literature and men who have contributed to scientific studies. When we think of expanding the “genre” to include other forms which pass the test of both

legitimation and literary depth, a story such as Vladimir Nabokov's "Signs and Symbols" might suggest the direction that a true "partnership" between literature and science can take. Nabokov is known for his taxonomic work on butterflies. He was employed during the 1940s at the Museum of Comparative Zoology at Harvard, wrote several scientific papers still considered a "starting point" for taxonomic research into a subspecies of "blue," and has a species of butterfly named after him.<sup>40</sup> His training as a lepidopterist gave him the ability to be open to the discovery of patterns in nature, and in everyday experience:

It occurs to me that the closest reproduction of the mind's birth obtainable is the stab of wonder that accompanies the precise moment when, gazing at a tangle of twigs and leaves, one suddenly realizes that what had seemed a natural component of that tangle is a marvelously disguised insect or bird.<sup>41</sup>

In the story "Signs and Symbols," an old couple prepares to visit their "incurably deranged son" who is institutionalized. Selecting a gift to bring with him proves difficult, for "man-made objects were to him . . . hives of evil, vibrant with a malignant activity that he alone could perceive." At last they decide on a basket filled with fruit jellies, as something not likely to upset him. Still, everything goes wrong. The train is stalled, the bus is full, it is raining hard as they walk to the sanatorium. Instead of their son, the old couple are met by a nurse who tells them that a visit might disturb him.

What does the son suffer from, why has he tried to commit suicide? He believes that everything happening around him is a "veiled reference to his personality and existence" (242). Clouds in the sky transmit information about him to each other, while "pebbles or stains or sun flecks form patterns" and messages which "he must intercept" (242). Certainly he is mad, for he "must be always on his guard and devote every minute and module of life to the decoding of the undulation of things." Even worse, "the silhouettes of his blood corpuscles, magnified a million times, flit over vast plains; and still farther, great moun-

tains of unbearable solidity and height sum up in terms of granite and groaning firs the ultimate truth of his being" (243).

When they return to their apartment, they eat, and the old man goes to bed. The woman stays up and looks through a photograph album of her son, an album which records the many disruptions and upheavals that have taken place in their life, as well as the slow decline of her child. She accepts all of this "for after all living did mean accepting the loss of one joy after another" (244). She thinks also of the "incalculable amount of tenderness contained in the world; of the fate of this tenderness, which is either crushed, or wasted, or transformed into madness; of neglected children humming to themselves in unswept corners; of beautiful weeds that cannot hide from the farmer and helplessly have to watch the shadow of his simian stoop leave mangled flowers in its wake, as the monstrous darkness approaches" (244).

In this sentence we find a reiteration of the theme which springs up again and again throughout the story; the world is connected, knit together, in mysterious, frightening, beautiful ways by signs and symbols, which only the mad would attempt to "decipher." In a way, the story also reflects on the predicament of science: how it presents us with the "facts" of the world (an unfledged bird, half-drowned in a puddle) but must leave it up to the writer to find the pattern, and the meaning inherent in the pattern.

## NOTES

<sup>1</sup> A variety of theories deal with the origins of genres. Some locate them in psychological or social archetypes, others in earlier, nonliterary discourse, or in functional events. Modern genres are typically seen as arising from forms previously viewed as subliterary. Tzvetan Todorov, "The Origin of Genres," *NLH* 8 (1976) 15970. The case of nature writing appears to be one of the few literary forms, however, whose origins can be located in the achievement of an individual writer, in this case, Gilbert White. "What is new in Gilbert White, or at least feels new in its sustained intensity, is a . . . single and dedicated observation . . . It is a new kind of record, not only of the facts, but a way of looking at the

facts: a way of looking that will come to be called scientific." Raymond Williams, *The Country and the City* (London: Hogarth P, 1985) 118.

<sup>2</sup> Robert M. Torrance, "Introduction" to *Encompassing Nature: A Sourcebook* (Washington: Counterpoint, 1998) xii.

<sup>3</sup> Clarence J. Glacken. *Traces on the Rhodian Shore* (Berkeley: U of California P, 1967) 5.

<sup>4</sup> Isaak Walton, *The Compleat Angler*, in *Seventeenth-Century Verse and Prose*, ed. Helen White et al., (New York: Macmillan, 1971) 303.

<sup>5</sup> Mark Daniel, "Introduction" to *The Essential Gilbert White of Selborne* (London: Breslich & Foss, 1983) x.

<sup>6</sup> Gilbert White, *The Natural History of Selborne*, ed. Richard Mabey (Harmondsworth: Penguin, 1977) 55.

<sup>7</sup> White 214.

<sup>8</sup> Wayne Franklin, *Discoverers, Explorers, Settlers* (Chicago: U of Chicago P, 1979) 22-23.

<sup>9</sup> Thomas J. Lyon, *This Incomperable Lande* (Boston: Houghton Mifflin, 1989) 16.

<sup>10</sup> Lee Clark Mitchell, *Witnesses to a Vanishing America* (Princeton: Princeton UP, 1981). Mitchell believes that the impulse to record a "vanishing America" began in earnest during the 1820s. Also see Thomas R. Dunlap, *Nature and the English Diaspora* (Cambridge: Cambridge UP, 1999). Dunlap argues that a rise in interest in native flora and fauna often coincided with a rise in new nationalist feelings in English-speaking countries formerly attached to the British "mother country."

<sup>11</sup> W. J. Keith, *Rural Writing* (Toronto: U of Toronto P, 1979).

<sup>12</sup> Donald Worster claims that "in both his choice of career and his attachment to his home locale, Thoreau seems almost deliberately to have taken Gilbert White's life as a model" (62). *Nature's Economy* (Cambridge: Cambridge UP, 1977) 62.

<sup>13</sup> Henry David Thoreau, *Walden* 172.

<sup>14</sup> Annette Kolodny, *The Lay of the Land* (Chapel Hill: The U of North Carolina P, 1975), offers a thoroughgoing analysis of the way the pastoral mode, for example, was contradicted by the reality of the North

American landscape. Michael Cohen takes another approach in working through the struggles John Muir had in attempting to break free of picturesque conventions used to describe natural scenery. Michael P. Cohen, *The Pathless Way: John Muir and the American Wilderness* (Madison: U of Wisconsin P, 1984).

<sup>15</sup> Histories dealing with the importance of the concept of "wilderness" to U.S. writers include Roderick Nash's *Wilderness and the American Mind* (New Haven: Yale UP, 1967) and Max Oeschlaeger's *The Idea of Wilderness* (New Haven: Yale UP, 1991). Hoaglands comments on "writing wild" can be found in the essay of the same title in *Red Wolves and Black Bears* (New York: Random House, 1976).

<sup>16</sup> Philip Marshall Hicks wrote the first scholarly assessment of nature writing, but little followed his initial study. See Hicks, *The Development of the Natural History Essay in American Literature* (Philadelphia: U of Pennsylvania, 1924).

<sup>17</sup> Peter A. Fritzell, *Nature Writing and America* (Ames: Iowa State UP, 1990) 3, 6.

<sup>18</sup> Lyon 4.

<sup>19</sup> John Elder, Editor, *American Nature Writers* (New York: Simon and Schuster, 1996) xiii.

<sup>20</sup> David Rains Wallace, "The Nature of Nature Writing," *The Untamed Garden and Other Personal Essays* (Columbus: Ohio State UP, 1984) 112.

<sup>21</sup> Oddly enough, scholarship dealing with the contribution of women to the field of nature writing in the United States is less likely to insist on the nonfictional aspect of the genre. Many women wrote animal and bird stories for children, and women scholars appear less squeamish in including them in their surveys of the nature writing genre. See, for example, Deborah Strom, ed. *Birdwatching with American Women: A Selection of Nature Writings* (New York: Norton, 1986), and Lorraine Anderson, *Sisters of the Earth* (New York: Vintage, 1991).

<sup>22</sup> Rebecca Raglon & Marion Schoeltmeijer, "Shifting Ground: Metanarratives, Epistemology, and the Stories of Nature," *Environmental Ethics* 18 (1996): 19-38.

<sup>23</sup> Patrick Murphy, *Farther Afield in the Study of Nature-Oriented Literature* (Charlottesville: UP of Virginia, 2000) 28.

<sup>24</sup> Wayne Grady, ed. *Treasures of the Place: Three Centuries of Canadian Nature Writing* (Vancouver: Douglas and McIntyre, 1992) x. Alec Lucas, in discussing the main trends of Canadian nature writing, divides the genre into sportsman's books, nature essays, rural and pastoral traditions, settlers writing and the fictionalized animal story. Alec Lucas, "Nature Writers and the Animal Story," in *Literary History of Canada: Canadian Literature in English*, Gen. ed. Carl F. Klinck (Toronto: U of Toronto P, 1965) 364-88, and "Nature Writing in English" in *The Oxford Companion to Canadian Literature*. Ed. William Toye (Toronto: Oxford UP, 1983) 543-47.

<sup>25</sup> John Wadland, *Ernest Thompson Seton: Man and Nature in the Progressive Era* (New York: 1978).

<sup>26</sup> Charles G. D. Roberts, *The Kindred of the Wild* (London: Duckworth & Company, 1903) 24.

<sup>27</sup> Charles G. D. Roberts, *Red Fox* (Toronto: Copp-Clark, 1905), rpt. Scholastic, 1986.

<sup>28</sup> Ernest Thompson Seton, *Wild Animals I Have Known* (New York: Scribner's, 1898), Noel Perrin, ed. 1987, Penguin Books.

<sup>29</sup> John Burroughs. "Science and Literature," *The Writings of John Burroughs* (Boston: Houghton Mifflin, 1886) 271.

<sup>30</sup> John Burroughs. "Real and Sham Natural History," *The Atlantic Monthly* 91 (1903) 301.

<sup>31</sup> The controversy over "nature-fakers" had its origins in the 1903 *Atlantic Monthly* article by John Burroughs who felt that writers such as Seton and Roberts were fictionalizing too much. Accounts of the controversy can be found in Clara Barrus's *John Burroughs* (New York, 1920) 330-31; Peter J. Schmitt's *Back to Nature: The Arcadian Myth in Urban America* (New York, 1969) 45-55; Lisa Mighetto's "Science, Sentiment and Anxiety: American Nature Writing at the Turn of the Century," *Pacific Historical Review* 54 (1985) 33-50; and more recently and more sympathetically, in Ralph H. Lutts's *The Wild Animal Story* (Philadelphia: Temple UP, 1998).

<sup>32</sup> Margaret Atwood, *Survival: A Thematic Guide to Canadian*

*Literature* (Toronto: Ontario, 1972).

<sup>33</sup> Robert H. MacDonald, "The Revolt Against Instinct: The Animal Stories of Seton and Roberts," *Canadian Literature* 84 (1980) 18-29.

<sup>34</sup> Jean-Francois Lyotard, *The Postmodern Condition: A Report on Knowledge* (Minneapolis: U of Minnesota P, 1979) 27.

<sup>35</sup> Alan B. Gross, *The Rhetoric of Science* 206.

<sup>36</sup> Barry Lopez, *Of Wolves and Men* (New York: Charles Scribner's Sons, 1978) 81, or *Arctic Dreams* (New York: Scribner's, 1986) 96.

<sup>37</sup> Michel Foucault, *The Order of Things* 40.

<sup>38</sup> Rebecca Raglon, "Voicing the World: Nature Writing as a Critique of the Scientific Method," *Canadian Review of American Studies* (1991) 23-32.

<sup>39</sup> Claudio Guillen, *Literature as System*, (Princeton: Princeton UP, 1971).

<sup>40</sup> Vladimir Nabokov, *Nabokov's Butterflies*, ed. Brian Boyd and Robert Micheal Pyle (London: Penguin, 2000).

<sup>41</sup> Vladimir Nabokov, *Speak, Memory* (London: Penguin, 1947).