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**TROPICAL GARDEN AND OCEAN WASTE:  
DARWIN'S EARLY VIEW OF NATURE**

presented by

Lynette L. Schumaker

has been accepted towards fulfillment  
of the requirements for

M.A. degree in History

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**TROPICAL GARDEN AND OCEAN WASTE:  
DARWIN'S EARLY VIEW OF NATURE**

**By**

**Lynette L. Schumaker**

**A THESIS**

**Submitted to  
Michigan State University  
in partial fulfillment of the requirements  
for the degree of**

**MASTER OF ARTS**

**Department of History**

**1988**

## ABSTRACT

### TROPICAL GARDEN AND OCEAN WASTE: DARWIN'S EARLY VIEW OF NATURE

By

Lynette L. Schumaker

Darwin's view of nature, previous to the Beagle voyage, contained elements found in early 19th century British landscape aesthetics, which divided landscapes into the sublime or grotesque and the beautiful or picturesque. On the Beagle voyage, Darwin unconsciously used these categories to divide the useful and beautiful tropical landscapes from the useless and sublime landscapes and seascapes which he observed. However, he also found landscapes which blurred this distinction and led him to speculate on the relationship between an environment and the well-being of its inhabitants. Ultimately he would develop a more mixed view of nature in which struggle in an environment which contains both sublime and beautiful elements leads to the evolution of improved forms of life.

## ACKNOWLEDGEMENTS

Thanks to Peter Vinten-Johansen and Lynn Nyhart for their thoughtful comments and helpful criticism.

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## INTRODUCTION

I often think of the Garden at home as a Paradise...

(Correspondence, 331)

In Darwin's Plots, Gillian Beer observes that Darwinian theory "rearranges the elements of creation myths, for example substituting the ocean for the garden..."<sup>1</sup> An examination of his early work shows that Darwin unconsciously used elements of the ocean and the garden to build a particular view of nature. He expressed these elements in terms of two opposing landscape metaphors: one of the wild and fecund garden and the other of the barren and forbidding wasteland--the unproductive wilderness or the ocean.

These metaphors indicate a dualistic view of nature that paralleled that of early 19th century British landscape aesthetics. Landscapes were judged with a concern for the relationship between nature and human beings that was expressed in them. Landscape aesthetics included utilitarian and moral components, with landscapes divided into opposing categories based on their effects on human beings both as inhabitants and as viewers. People



lived well or ill within different landscapes, but as "viewers" they were also morally disturbed or improved by the view.

Darwin's early descriptions of nature contained opposing landscape metaphors, which changed in response to observations he made on the Beagle voyage. After the voyage he combined conflicting elements of these metaphors into the view of nature which underlies the evolutionary theory expressed in The Origin of Species. Elements of the wild and fecund garden were combined with elements of the barren and forbidding wasteland in a larger whole which emphasized the productive struggle of life and death.

## I. NATURE AND THE LANDSCAPE GARDEN

Darwin's early view of nature forms the crucial background for the development of his later work. To construct a picture of this view, I have examined the scientific notebooks he kept during and immediately after the voyage of the Beagle, his correspondence during the voyage, and the diary that he kept as a means of preserving the memory of his travels for his family and friends. Because it was a travel narrative rather than a scientific work, the Diary is especially useful as a means of examining the broad cultural influences on Darwin's view of nature. Darwin composed an account of his travels using popular terms and analogies to describe and analyze the elements of the scenery. Among the terms he used, three predominate in his descriptions of landscapes--"beautiful," "picturesque," and "sublime."

In the early 19th century, these terms found a home in three areas of British and European culture--landscape painting, landscape garden design, and scenic travel. In undertaking the Beagle voyage, Darwin participated in the traditions of both scenic and scientific travel, being as much a gentleman companion for the captain as he was the ship's naturalist.<sup>2</sup> His notebooks reflect the observing and collecting activities of the naturalist, making references to scientific works, while the Diary follows the tradition of the travel narrative, describing the

scenery with references to familiar European landscapes and landscape art. Despite these broad differences, both the notebooks and the Diary use a terminology common to British landscape aesthetics, a terminology that had developed in a particular political and social context.

During the Enlightenment, British landscape gardeners took the French formal garden--exemplified by the royal gardens at Versailles--as their standard. In these formal gardens nature was carefully confined and forced into symmetrical patterns which reflected the popular concept of an orderly universe. If one could grasp the "higher" reason which underlay the apparent chaos, one could control nature and make it serve human purposes. Gardens were made to look as controlled as possible. Gardeners designed symmetrical avenues lined with trees giving onto views of equally symmetrical bodies of water. Geometrically shaped beds of flowers often surrounded the central buildings. Small hedges called "box" surrounded the beds of flowers; these hedges were grown in the form of knots--carefully shaped plantings designed to look like the embroidered patterns found on tapestries. Shrubs were pruned into geometrical shapes or into the shapes of animals. All of these elements expressed the theme of human control over nature, as well as a belief in an underlying, inherently rational order in the universe.

By the mid-18th century, however, this theme of control lost popularity in British garden design, giving

way to a trend toward "naturalness." This preference reflected a view of nature critical of that of the Enlightenment. The object now was not to impose an idea of order, but to detect a "natural" order. Gardeners came to "despise all that was acquired, artificial or conventional,"<sup>3</sup>--things which they associated with the Enlightenment--preferring instead to bring out the possibilities they believed were inherent in particular landscapes. The Enlightenment garden and the gardens that had preceded it had always been distinctly separated from the unimproved land outside the garden. The Romantic notion of a "natural" order led gardeners to look again at the "wilderness" outside the garden, to leap the fence--as Horace Walpole put it--and find that all nature was a garden.<sup>4</sup>

At the same time that Britons were developing a taste for this kind of naturalness, they were also developing a taste for landscape art, acquired during travels on the Continent. Britons began to speak of real landscapes as "picturesque" when scenery met the expectations acquired from landscape painting. Two types of the picturesque dominated tastes before the 19th century--one based on the paintings of Claude Lorraine and another based on works by Salvator Rosa. Rosa painted wild scenes of tangled trees and mountains, often inhabited by hermits or by highwaymen conspiring to waylay travellers. Lorraine painted serene rural landscapes with ancient ruins overgrown by nature;

he was famous for his subdued colors and vistas bathed in a gentle, golden light. Travellers of the time often carried a "Claude glass"--a viewing instrument which transformed real landscapes into "Claudes," by tinting them with the appropriate subdued colors, evoking a contemplative mood in the viewer.<sup>5</sup>

Gardeners soon began to emulate these painters, producing picturesque landscapes. Following Lorrain some gardeners introduced classical bridges, monuments, and fake ruins into the landscape garden. Capability Brown was the chief garden architect of this style. Brown's landscapes showed respect for the natural, often at the expense of the artificial elements of a property. Vast expanses of lawn would sweep directly up to the house without intervening walls, balustrades, or flower beds.<sup>6</sup> He eliminated many of the French formal elements in the gardens he was hired to improve, cutting down or planting trees to break the symmetry of the tree-lined avenues or reshaping the symmetrical bodies of water into more natural serpentine lakes which mimicked the lines of natural rivers. He designed natural looking plantings in order to frame views of the landscape around the house. Visitors walked through the garden, often by a prescribed path which enabled them to view the features of the garden from the best perspective--and the idea of what constituted such a perspective derived from Lorrain's art:

...the visitor is intended to stroll round the garden, gazing, thinking, responding to the poetic stimuli of the natural landscape and of human memorials--statues, inscriptions and the like--scattered along the path.<sup>7</sup>

Gardeners intended that these memorials should evoke a sense of the fragility and brevity of human existence relative to the power of nature, as in Lorrain's paintings of Roman ruins overrun by weeds. Thus, Brown's gardens, though serene, contained elements intended to evoke the viewers' fears of mortality. which ideally caused them to experience serious and morally improving thoughts and feelings.

Other gardeners emulated Rosa's notion of the picturesque by building grottoes and fantastically shaped mountains into the landscape garden. These wilder landscapes were sometimes supplied with a hermit's cottage and a "hermit" paid to live there and leap out at visitors.<sup>8</sup> These "grotesque" gardens were intended to cause the visitor to experience such emotions as astonishment and fear.

Although gardens were being designed to be "picturesque," writers on aesthetics did not yet recognize the picturesque as a separate category. Edmund Burke's influential Essay on the Sublime and Beautiful defined only those two terms and the variety of emotions evoked by them. He developed a dualistic notion of these concepts, defining them in opposition to each other and equating the "great" with the "sublime":

...sublime objects are vast in their dimensions, beautiful ones comparatively small; beauty should be smooth, and polished; the great, rugged and negligent; beauty should show the right line, yet deviate from it insensibly; the great in many cases loves the right line, and when it deviates it often makes a strong deviation; beauty should not be obscure; the great ought to be dark and gloomy; beauty should be light and delicate; the great ought to be solid, and even massive. They are indeed ideas of a very different nature, one being founded on pain, the other on pleasure...<sup>9</sup>

The sublime, or the great, evoked serious emotions in the viewer, according to Burke, because it is "founded on pain." Beauty evoked more pleasant emotions--cheerfulness and happiness. The sublime could also evoke delight, when its painful and frightening qualities are "at certain distances."<sup>10</sup> This delight, however, was a more serious and reflective mood than that experienced when viewing beautiful objects and does not blur the opposing categories of the sublime and the beautiful.

Although it was not recognized as a separate category by Burke, the picturesque did not fall comfortably into either of the aesthetic types he discussed, but exhibited a combination of both characteristics. Brown's picturesque landscape gardens emphasized the beautiful, with their smooth expanses of lawn and serpentine lakes which deviated from the right lines found in the avenues and bodies of water in the Enlightenment gardens. However, their "human memorials" evoked reflection about

human mortality. The grotesque garden landscape fell more completely into the category of the sublime, with its gloomy grottoes and fantastically shaped mountains. Both, however, were the sublime in their tendency to allow natural elements to overwhelm human elements in the landscape, often completely banishing the artificial from view except for the house itself. In Brown's gardens the vast expanse of lawn often seemed to overwhelm the central buildings, while in the grotesque gardens the only human element might be a hermitage overgrown with vegetation and a hermit with shaggy beard and wild countenance.

At the turn of the century, however, gardeners reintroduced the artificial into the landscape, and the theme of nature overpowering the artificial productions of humanity was replaced by an emphasis on the harmony between natural and human elements. Humphrey Repton was the chief architect of this new style. Nature remained wild by human elements, reminiscent of the orderly Enlightenment gardens, were harmoniously integrated and even at times allowed to dominate the landscape. As Repton wrote: "...I advised the removal of a few tall trees near the house at Longleat, but that the character of greatness in a work of art, like this Palace, should not be obliterated by the more powerful agency of nature."<sup>11</sup> He cut down tall trees and broke up Brown's sweeping expanses of lawn with terraces, balustrades, and beds of flowers.<sup>12</sup>



Repton's style was at first perceived as a move away from the taste for the picturesque in garden design. A review of Repton's Fragments on the Theory and Practice of Landscape Gardening, published in 1816, applauds his preference for the "habitable" over the picturesque:

Repton thinks [the picturesque] ridiculous--we must make our parks and gardens habitable: "But in the next place, the beauties of nature itself which painting can exhibit, are many, and most of them probably of a sort which have nothing to do with the purposes of habitation, and are even wholly inconsistent with them. A scene of a cavern, with banditti sitting by it is the favourite subject of Salvator Rosa. But are we therefore to live in caves? or encourage the Neighborhood of banditti? Gainsborough's country girl is a more picturesque object than a child neatly dressed in a white frock; but is that reason why our children are to go in rags?"<sup>13</sup>

Repton's focus on habitable landscapes was connected to a renewed interest in the utilitarian aspects of gardens. Kitchen gardens, orchards, and outbuildings were kept hidden from sight in the Romantic garden; peasant villages might be moved if they spoiled the view. Although he did remove villages from time to time, Repton also argued for their inclusion in the view, framed in such a way as to gratify the estate owner's sense of property. Repton's disparagement of banditti and rags along with his emphasis on habitable comforts expresses a movement towards the conflation of garden beauty with property and utility--and towards an accompanying view of nature which played down

its sublime aspects. In a debate over the worth of picturesque landscape design, Repton credited the questionable taste of his opponents to the fact that they lived amidst "bold and picturesque scenery." "I will not arraign your taste, or call it vitiated," wrote Repton, "but your palate certainly requires a degree of 'irritation' rarely to be expected in garden scenery."<sup>14</sup> So much for the extremes of the Romantic temperament.

Although Repton and others viewed his style as habitable rather than picturesque, the idea of what was picturesque began to reflect this change in aesthetic standards. Landscape painting ultimately bifurcated into two styles, one maintaining much of the earlier Romantic view of nature and the other fixing on nature's more utilitarian possibilities. The paintings of Constable and Turner, to a large degree, reflect these opposing attitudes--Turner emphasizing nature's conflict and violence and Constable focusing on productive, though rough and rustic, country scenes.<sup>15</sup>

In the early 19th century, the notion of the picturesque still largely coincided with Repton's garden landscapes--combining the habitable and the natural, the beautiful and the sublime. Scenic travel guides also reflected this standard in landscape aesthetics. William Gilpin wrote popular guides to the wild landscapes of Britain which employed these standards. His advice to the traveller in search of picturesque views emphasized that

the sublime must contain something of the soft and pleasing aspects of beauty in order to be picturesque; rocks and mountains are not picturesque, but lakes and valleys are.<sup>16</sup> The greater habitability of landscapes with lakes and valleys may provide a clue to Gilpin's preference for them.

During his travels, Darwin, too, preferred lakes and valleys to the mountainous landscapes he observed. His use of the changing terminology of his time, however, was not nearly so conscious nor so precise as that of writers like Repton and Gilpin. To say more about Darwin's taste, it is necessary to examine the ways that his particular usage of such terms as sublime, beautiful, and picturesque might be better understood in the light of this landscape tradition.

## II. LANDSCAPES AND SEASCAPES ON THE BEAGLE VOYAGE

Darwin's analysis of the scenery on the Beagle voyage shows the influence of contemporary standards in landscape aesthetics. As he observed in the Diary:

...there is a growing pleasure in comparing the character of scenery in different countries, which to a certain degree is distinct from merely admiring their beauty. It more depends on an acquaintance with the individual parts of each view. I am strongly induced to believe that, as in Music, the person who understands every note, will, if he also has true taste, more thoroughly enjoy the whole; so he who examines each part of a fine view, may also thoroughly comprehend the full & combined effect.<sup>17</sup>

He carried out this analysis of scenery not only in the Diary but also after his return, including an "analysis of pleasures of scenery" in the M Notebook in 1838.<sup>18</sup> He also included "taste for fine scenery" among the higher aesthetic tastes such as appreciation of music, literature, and art which he ascribed to his younger self in the Autobiography.<sup>19</sup> Indeed, he singled out appreciation of scenery as the one taste that he has retained in old age. Thus, in his own eyes, landscape appreciation was an important taste and one for which he had had a lasting affinity.

Darwin used the term "beauty" most often for certain types of landscapes he observed in the tropics. His analysis of the elements of tropical scenery parallels in

many of its respects the new garden aesthetic introduced by Repton:

The elements of the scenery are so simple, that they are worth mentioning as proof on what trifling circumstances exquisite natural beauty depends. The country may be described as a quite level plain of about three hundred feet elevation which has been in every part worn into flat-bottomed valleys. The whole surface is covered by various kinds of stately trees, interspersed with patches of cultivated ground, amidst which stand houses, convents & Chapels. (416)

In this description, nature is calm and "stately" as in a Claude Lorrain painting, rather than sublime or frightening as in Rosa's work. Furthermore, cultivated ground and human habitations find their place among the trees and wilder areas much as beds of flowers, fountains, and other signs of human presence found a place in Repton's gardens. Darwin's ideal of natural beauty is as habitable as a Repton garden. Although the sublime and frightening aspects of the picturesque are absent from this tropical scene, perhaps an element of the grotesque garden of the Romantic style remains: "...I must add that the houses & especially the sacred edifices are built in a peculiar & rather fantastick style of architecture." (416) Possibly he was using "peculiar" and "fantastick" in pejorative sense, for he added this description almost as though it spoiled his earlier statements concerning beauty, perhaps as Burke used the term "fantastick" to indicate the extravagantly fanciful.<sup>20</sup>

The natural vistas, so important in both Brown's and Repton's landscape gardens, also form a part of Darwin's view of ideal scenery:

From the edges of the plain there are distant glimpses either of the ocean or of the great bay, bordered by low wooded shores...Excepting from these points, the range of vision is very limited; following the level pathways, on each hand alternate peeps into the wooded valleys below can alone be obtained. (416)

Perhaps he would have preferred a properly framed view to the alternate peeps which the pathways allowed him. When he notes the unfortunately limited range of vision from the path, he is applying standards appropriate to the landscape garden, in which the viewer followed the path, enjoying a succession of carefully framed views.

Most of Darwin's examples of beautiful scenery contain references to bodies of water and/or valleys, suggestive of Gilpin's standards for picturesque beauty. The plain is "worn into flat-bottomed valleys" (416) and "the bay is scattered over with large ships" (39) in some of these descriptions. The element of habitability infuses Darwin's concept of the beautiful landscape because of the utilitarian qualities implied in these descriptions: "Flat-bottomed" valleys are those best suited for cultivation, and the image of ships scattered over a bay evokes the bustle of commerce.

Although Darwin valued the presence of human elements in the natural landscape, he also valued the wildness of

the natural elements:

It must be remembered that within the tropics, the wild luxuriance of nature is not lost, even in the vicinity of large cities; the natural vegetation of the hedges & hill sides overpowers in picturesque effect, the artificial labor of man. (416)

Nature's order, rather than the artificial order imposed by humans, controls this scene. The natural elements are wild, but in a luxuriant rather than a forbidding way, as in a Repton garden.

Darwin's aesthetic standard of wild luxuriance also parallels that of Milton. He carried Paradise Lost on all of his inland expeditions during the voyage.<sup>21</sup> Milton's Eden held a place in the popular consciousness of the early 19th century and was often mentioned in articles on gardening. Paradise was a medieval garden containing artificial elements such as fountains and a wall, but which otherwise showed little evidence of human design. What it was about Milton's Eden which appealed to the early 19th century British public can be discerned from this poetic image:

The river  
Ran nectar, visiting each plant, and  
fed  
Flow'rs worthy of Paradise which not  
nice art  
in beds and curious knots, but nature boon  
Poured forth profuse on hill and dale  
and plain...

Thus was this place,  
A happy rural seat of various view.<sup>22</sup>

As in Darwin's descriptions of tropical scenery, water is

present in the form of a wandering river, and nature's wild fecundity is expressed in the image of nature's bounty ("boon") pouring out in profusion over the landscape. According to one scholar writing of the period, "Bacon's 'sweet and sightly' wilderness of sweetbriars and honeysuckle and Milton's description of "Paradise" were examples of the "constant affection for irregularity and naturalness" held by the British.<sup>23</sup> Milton casts in a negative light the beds, knots, and nice art (ungenerous, not luxuriantly bountiful) which early 19th century Britons criticized in the Enlightenment garden. And the "happy rural seat of various view" corresponded with the rural estates of the wealthy, improved by Brown's and Repton's framing of the view.

The unbounded profusion of nature's bounty was an aspect of tropical landscape which Darwin believed contributed to its beauty. This luxuriance of nature reflected the notion that a habitable landscape was not only a comfortable place for human habitation, but also one which provided sustenance, emphasized in Repton's refusal to hide kitchen gardens and peasant villages. Darwin shared this sense of utilitarian beauty; as he puts it, "...& in this [tropical] class of views, the knowledge that all conduces to the subsistence of mankind, adds much to the pleasure of beholding them." (42) In one of its senses current at the time, "beauty" contained the notion of utility. "[Intrinsic beauty] is a perception of sense



merely," according to Lord Kames, but "...relative beauty is that of means relating to some good end or purpose." And when both of these kinds of beauty occur in one object, that object "appears delightful."<sup>24</sup>

Although later Darwin may have been influenced by Wordsworth's aesthetic critique of science,<sup>25</sup> he did not entirely share his aesthetic view of nature. When in the Diary Darwin exclaims that a solitary cottage or the sailors' tents on the beach of a wooded cove in Tierra del Fuego are picturesque, he shares Wordsworth's belief that a wild scene is more beautiful with a few signs of human habitation. Wordsworth preferred that the valleys possess a few cottages.<sup>26</sup> However, Darwin did not share Wordsworth's preference for the wilder and more sublime landscape. Wordsworth, for example, found mountainous scenery the most interesting of all scenery and believed the best aspects of this scenery were revealed in winter when the "rich green" of summer had passed away, leaving only subdued and subtle colors.<sup>27</sup> Darwin, however, preferred bright colors and wooded mountains in scenes which he considered beautiful:

...The aspect of the island equalled the expectations raised by the many well known descriptions of its beautiful scenery. The sloping plain of the Pamplémousses, scattered over with houses & coloured bright green from the large fields of sugar cane, composed the foreground...Towards the centre of the island groups of wooded mountains arose out of the highly cultivated plain.(401)

The "bright green" emphasizes the fertility of the "highly cultivated plain." Wooded, and therefore useful, the mountains in this description share in the habitability of the entire scene.

Darwin also judges mountainous scenery by a standard of propriety:

Group masses of naked rocks, even in the wildest forms, for a time they may afford a sublime spectacle, but they will soon grow monotonous; paint them with bright & varied colours, they will become fantastick; clothe them with vegetation, they must form at least a decent, if not a most beautiful picture.

(427)

According to Darwin's taste, naked rocks must be clothed with vegetation in order to be decent and beautiful. He disapproves of the fantastick, perhaps because of its association with the questionable taste for the grotesque. He may have shared with Repton a moral disapproval for this earlier taste for novelty and surprise in garden landscapes. Writing of the grottoes and fake mountains of the "grotesque" garden, Repton had moralized:

Novelty usurps the place of propriety... 'But the man of good taste endeavors to investigate the causes of the pleasure he receives, and to inquire whether others receive pleasure also. He knows that the same principles which direct taste in the polite arts, direct the judgment in morality...'<sup>28</sup>

Darwin's interest in scenery, however, was not limited to the beautiful landscapes of the tropics. Sublime scenery, sometimes moved him as well, even when

human elements were missing:

Amongst the scenes which are deeply impressed on my mind, none exceed in sublimity the primeval forests, undefaced by the hand of man, whether those of Brazil, where the powers of life are predominant, or those of Tierra del Fuego, where death & decay prevail. Both are temples filled with the varied productions of the God of Nature. (427)

Darwin appreciated sublime landscapes and the emotions they evoked: "The state of mind which grand scenes formerly excited in me, and which was intimately connected with a belief in God, did not essentially differ from that which is often called the sense of sublimity..."<sup>29</sup> He also speaks of the "wonder, astonishment & sublime devotion" that fill and elevate the mind at the sight of the Brazilian rainforest.<sup>30</sup> Burke defines the sense of sublimity to which Darwin refers:

The passion caused by the great and sublime in nature, when those causes operate most powerfully, is Astonishment; and astonishment is that state of the soul, in which all its motions are suspended, with some degree of horror...The inferior effects are admiration, reverence and respect.<sup>31</sup>

These sublime and grand (or large) scenes in nature evoke serious emotions as opposed to the more cheerful emotions evoked by the beautiful (which is also necessarily small).<sup>32</sup>

One important difference between Burke's and Darwin's taste for the sublime, however is the degree of terror each found proper for the appreciation of scenery. For

Burke, anything terrible is also sublime, if it is large:

An even plain of a vast extent on land, is certainly no mean idea; the prospect of such a plain may be as extensive as a prospect of the ocean; but can it ever fill the mind with any thing so great as the ocean itself? This is owing to several causes, but it is owing to none more than to this, that the ocean is a object of no small terror.<sup>33</sup>

Darwin, however, finds the ocean's vast extent "tedious."  
 "And what are the boasted glories of the illimitable ocean? A tedious waste, a desert of water, as the Arabian calls it." (426) The phrase "tedious waste" gives a clue to his lack of enthusiasm--in his view, the ocean does not participate in nature's wild fecundity, at least not in a way which might improve its scenic value. Nor does a storm at sea move Darwin as much as he expected:

I confess, however, my imagination had painted something more grand, more terrific in the full grown storm. It is a finer sight on the canvass of Vandervelde...On a forlorn & weather beaten coast, the scene is indeed different, but the feelings partake more of horror than of wild delight.  
 (426)

His constant struggle with seasickness no doubt blunted the thrill of riding out a storm aboard ship. (426)  
 However, one also senses in Darwin's lack of "wild delight" a parallel with the more moderate tastes espoused by Repton--in a painting, banditti make the scene wild and picturesque, but in reality they are not practical to have lurking in the neighborhood. A weatherbeaten coast may be sublime, but think of the destruction!

Darwin prefers the plain as a sublime and elevating sight:

In calling up images of the past, I find the plains of Patagonia most frequently cross before my eyes. Yet these plains are pronounced by all most wretched & useless. They are only characterized by negative possessions: without habitations, without water, without trees, without mountains, they support merely a few dwarf plants. Why then, & the case is not peculiar to myself, do these arid wastes take so firm possession of the memory? (427-8)

Darwin is puzzled by his reaction to Patagonia, for its plains have no utilitarian value to recommend them, and preference for utilitarian value in a view has dominated his earlier descriptions of scenery. He goes on to say, "I can scarcely analyze these feelings; but it must be partly owing to the free scope given to the imagination...who would not look at these last boundaries to man's knowledge with deep, but ill defined sensations." (428) It is not terror, perhaps, but "the free scope given to the imagination"--perhaps the freedom from danger which allowed him to engage in reflective thought--that made the plains of Patagonia a more sublime and memorable object for him than the ocean.

Because Darwin does not find the terrifying aspects of the sublime as pleasing as Burke and others of more Romantic taste, it appears that his notion of the picturesque has shifted in much the way this notion generally shifted in response to Repton's utilitarian concerns. The picturesque contains a combination of

sublime and beautiful elements, but Darwin's idea of the picturesque contains fewer of the terrifying aspects of nature and more of the agreeable and beautiful. His response to the Fuegian landscape illustrates this shift:

I determined to penetrate some way into the country...For an hour I continued to follow the stream, & was well repaid by the grandeur of the scene. The gloomy depth of the ravine well accorded with the universal signs of violence...a seaman (who accompanied me) & myself, being armed and roughly dressed, were in tolerable unison with the surrounding savage Magnificence...The view was imposing but not very picturesque.  
(121)

The scene he describes bears a striking resemblance to the landscapes in Rosa's paintings, right down to the bandit-like costume of Darwin and the seaman. However, he does not find this scene picturesque. Only quieter, less savage scenes invite him to use that term.

Thus, Darwin preferred landscapes containing many of the habitable, utilitarian elements found in Repton's gardens. Although he appreciated both the beautiful and the sublime in landscape scenery, he found the more terrible elements of the sublime displeasing and left them out of his concept of the picturesque. Wildness in the landscape was one of those terrifying elements, and Darwin hesitated to call picturesque those scenes that were too wild and savage. A closer examination of his response to the wildness of natural landscapes reveals what he appreciated and what he feared in it.

When he spoke of beautiful or picturesque scenes, Darwin described scenes in which nature's wildness expressed itself as abundance. This abundance captures both the element of utility and that of propriety (the covering of the land with vegetation). However, abundance also expressed itself as irregularity, or the overflowing of artificial boundaries. This was sometimes called "roughness" and, according to Gilpin, defined the difference between the smooth regularity of "beauty" and the irregularity of the picturesque. Gilpin used Milton's description of Eve's hair as an example of this quality of roughness:

...to her slender waist  
Her unadorned golden tresses were  
Dishevelled, and in wanton ringlets waved.<sup>34</sup>

Irregularity was valued by early 19th century landscape designers for more than the utilitarian reason that it expressed nature's abundance; it also lent variety and interest to the view. Repton's elements of variety, novelty, contrast, and intricacy relate to this aspect of irregularity as sources of pleasure derived from the landscape garden.<sup>35</sup> All of these elements, but particularly intricacy, provide scope for the viewer's imagination, according to Repton, and Darwin used a similar standard to judge the view:

Learned naturalists describe these scenes of the Tropics by naming a multitude of objects...To a learned traveller, this possibly may communicate some definite ideas; but who else from seeing a plant in an

herbarium can imagine its appearance when growing in its native soil? Who, from seeing choice plants in a hothouse, can multiply some into the dimensions of forest trees, or crowd others into an entangled mass. (416)

As Repton puts it, "...the eye is never long delighted, unless the imagination has some share in its pleasure: an intricacy and entanglement of parts heightens the satisfaction."<sup>36</sup> Neither the intricacy nor the entanglement of tropical scenery can be evoked by the naturalist's naming of objects nor by the specimens singly displayed in a hothouse.

Irregularity also carried with it the connotation of "liberty," and Repton lauded the British for their appreciation of the natural liberty expressed in the landscape garden.<sup>37</sup> Too much liberty, however, could lead to a dangerous--perhaps even revolutionary--wildness. Darwin implies that this danger exists when he worries that Australian society might become like society in the United States if the colonists continue to allow their sons to associate with convict laborers. (387) Democracy of the type attempted in the South American countries he visited also prompted his displeasure, and he hoped they would soon give it up for the greater likelihood of progress under the "iron hand of some Dictator." (199) As Repton puts it in a passage on the connection between politics and taste:

The neatness, simplicity, and elegance of English gardening, have acquired the approbation of modern times, as



the happy medium betwixt the liberty of savages, and the restraint of despotic government; but so long as we enjoy the benefit of these middle degrees betwixt extremes of each, let experiments of untried theoretical improvements be made in some other country.<sup>38</sup>

Repton was concerned about the egalitarianism and disrespect for property rights he believed were expressed in the French Revolution. Darwin's feelings towards the revolutions occurring in South America were similar.

However, danger resulted from wildness of the picturesque and the sublime as well as from the political kind, and the liberty of savages was often on Darwin's mind. Standing night watch on a wild beach in Tierra del Fuego, Darwin imagines "that the Fuegians may be prowling close to the tents ready for a fatal rush." (134) The uncontrolled power of the sea was another kind of wildness that more than once earned his enmity: "I find I have suffered an irreparable loss from yesterday's disaster in my drying paper & plants being wetted with salt water." He complains that "Nothing resists the force of an heavy sea; it forces open doors & skylights, & spreads universal damage." (128) Even the bright green of the tangled growth of a mangrove swamp fails to win his appreciation because of another kind of danger, that of disease, which the British had little success in understanding or controlling at the time:

The channel...is bordered on each side by Mangroves which spring like a miniature forest out of the greasy mud

banks. The bright green color of these bushes always reminds me of the rank grass in a Churchyard: both are nourished by putrid exhalations; the one speaks of death past, the other, too often, of death to come. (419)

The dangers of the Beagle voyage may have been too immediate for Darwin to appreciate the wildest aspects of the scenery. In the midst of unfamiliar wildernesses, he found himself in much the same position as Britons of an earlier generation travelling across Europe to Italy before the route became safe. Not until the 1750s did "Gentlemen on the Grand Tour [begin] to peep under the blinds of their carriages to enjoy the visual horrors of the Alps..." Burke's essay on the sublime and the beautiful helped them to make sense of what they saw, for "Burke's Sublime covered those elements that created feelings of fear and wonder and aroused the instinct of self-preservation..." However, these elements "could only be enjoyed as travel became less hazardous."<sup>39</sup> MacCauley noted the difficulty of appreciating the landscape when one passes the mangled body of a dead traveller who might have as easily been oneself.<sup>40</sup> As Darwin observed of a road in Brazil: "Instead of milestones, the road is often marked by crosses, to signify where human blood has been spilled." (57)

The hazards of the wild, sublime landscape went beyond the known dangers of disease, drowning, and hostile locals. The unfamiliarity of the wilderness was itself sometimes a problem, particularly for a curious scientist.

Darwin became aware of his ignorance and the consequences of his highly developed curiosity when the sailors poked fun at his naivete on the Beagle. The consequences might not always be comic from the point of view of the victim: Commenting on a fox that he killed with his geologist's hammer while it watched a pair of Beagle surveyors, Darwin says, "This fox, more curious or more scientific, but less wise, than the generality of his brethren, is now mounted in the Museum of the Zoological Society."<sup>41</sup> Focused on his own scientific observing, Darwin may have identified with the fox and its failure to see its danger.

The unfamiliarity of wilderness landscapes also demanded a great deal of mental energy for their enjoyment. At first Darwin responded with delight at the novelty of his experiences. Describing his early reactions to the tropical landscape, which he first saw in its full glory at Bahia, he separates those elements for which he has associations from those which leave him confused (though pleasantly so). The "magnificence" of the landscape around the city of Bahia reminds him of John Martin's paintings--"views" of natural landscapes which were so sublime as to raise "distrust" in the mind of the viewer. (39) Describing the city itself, he notes the luxuriant wood that embosoms it, its elegant houses, and the ships that dot the bay--all together "one of the finest views in the Brazils." However, "these beauties are as nothing compared to the Vegetation..." he notes as

he turns to look at the forest. His attention jumps first one way and then another as he tries to see everything in the complex and unfamiliar forest scene--"strange " trees and fruit, "stranger" flowers, and "gaudy" butterflies. He concludes:

The delight one experiences in such times bewilders the mind...The mind is a chaos of delight, out of which a world of future & more quiet pleasure will arise. (39)

Only Humboldt provides him a foothold in this unfamiliar landscape: "I am at present fit only to read Humboldt; he like another sun illumines everything I behold." (39)

With time his delight developed into more complex emotions. Three weeks after his overwhelming experience in Bahia, he notes the "higher feelings" excited by a walk in the rainforest near Rio de Janeiro. (56) However, a great effort is required to achieve these higher feelings:

Many of the views were exceedingly beautiful; yet in tropical scenery, the entire newness, & therefore absence of all associations, which in my own case (& I believe in others) are unconsciously much more frequent than I ever thought, requires the mind to be wrought to a high pitch, & then assuredly no delight can be greater; otherwise your reason tells you it is beautiful but the feelings do not correspond. (60)

At times, he wearied of the effort to make sense of the unfamiliar impressions:

I often ask myself, why can I not calmly enjoy this; I might answer myself by also asking, what is there that can bring the delightful ideas of rural quiet & retirement, what that

can call back the recollection of childhood & times past, where all that was unpleasant is forgotten; untill ideas, in their affects similar to them, are raised, in vain may we look amidst the glories of this almost new world for quiet contemplation. (60)

In Darwin's mind, "rural quiet" and scenes familiar from childhood demand less energy for their comprehension and enjoyment. Furthermore, his mention that "all that was unpleasant is forgotten" while contemplating such scenes implies that tropical scenery does not have this effect on him; it may have been difficult for him to avoid thinking about the unpleasant dangers and surprises lurking in the wild scenery.

Although Humboldt at first "illumined" this unfamiliar wilderness landscape for Darwin, they differed in their taste for wilderness scenery. Both refer to the fascinations of the "otherworldliness" of the tropics,<sup>42</sup> but each saw something different when he looked at tropical scenery. Part of this involved the choice of views: Humboldt concentrated on descriptions of complex forest scenery, building from myriad detail a picture of the whole--"a vast, sublime tropical wilderness, unrelated to humanized landscapes"<sup>43</sup>-- while Darwin focused more on scenes combining both artificial and natural elements. Humboldt's preference for the sublime view is also implied in the title of one of his books--Views of Nature: or Contemplations on the Sublime Phenomena of Creation...<sup>44</sup> However, even when looking at similar scenes, each saw

something slightly different. Of a garden in the tropics Humboldt observes that it resembles a "copse"--a thicket of small trees-- more than a piece of cultivated ground.<sup>45</sup> However, Darwin focuses on the cultivated ground, seeing a garden, even if a wild one:

One of the great superiorities that tropical scenery has over European is the wildness of the cultivated ground. Cocoa Nuts, Bananas, Plantain, Oranges, Papaws are mingled as if by Nature, & between them are patches of the herbaceous plants such as Indian corn, Yams & Cassada... (42)

Darwin observes not only the copse-like qualities of the fruit trees in the garden, but also the garden plants among them, later going on to speak of the utility which is a vital aspect of the beauty of the whole.

Another difference in Darwin's response to tropical landscapes may be his liking for scenes with familiar associations; the wilderness contained few such associations while the habitable parts of the tropics contained many. As he notes in his summary of the landscapes he has seen, "It is probable that the picturesque beauty of many parts of Europe far exceeds anything we have beheld." (427) This preference parallels Repton's view of the importance of familiar associations in garden landscapes. As he states of "Association":

This is one of the most impressive sources of delight, whether excited by local accident, as the spot on which some public character performed his part; by the remains of antiquity, as the ruin of a cloister or castle; but more particularly by that personal

attachment to long known objects, perhaps indifferent in themselves, as the favourite seat, the tree, the walk, or the spot endeared by the remembrance of past events: objects of this kind, however trifling in themselves, are often preferred to the most beautiful scenes that painting can represent, or gardening create.<sup>46</sup>

Thus, even more than the picturesque beauty of European scenery, Darwin preferred the familiar associations of the gardens of England. In Bahia, he exclaims:

It is now the Spring of the year, & every thing is budding & fresh: but how great a difference between this & the beautiful scenes of England.--I often think of the Garden at home as a Paradise...<sup>47</sup>

A few years after the Beagle voyage, Darwin settled in just such a scene as Repton describes, full of familiar associations: Down, with its garden and its "Sandwalk" around a little "wilderness"--a copse of trees with a view of cultivated fields in the English countryside.

### III. ENVIRONMENT AND INHABITANTS: GALAPAGOS AND TIERRA DEL FUEGO

Darwin's reaction to landscapes shows a dualistic view, contrasting the beautiful or picturesque garden with the sublime or grotesque wasteland--his idea of the picturesque containing more of the beautiful than the sublime elements of scenery recognized in landscape aesthetics. Beautiful and picturesque landscapes resemble Milton's Garden of Eden in their wild luxuriance, safety, and harmony, while sublime and grotesque landscapes are often characterized by danger, disharmony, and decay. The mental states evoked by these contrasting landscapes are also opposed. The beautiful and picturesque inspire happiness and improved moral sentiments--a sense of harmony between nature and humankind, a sense of propriety, and the hope of human progress. The sublime and the grotesque evoke a serious mood and reflective thought in the viewer--morally elevating, in the case of the sublime, but including a sense of human vulnerability to danger and degeneration. Darwin himself reports these feelings in response to landscape--fear and disapproval at the danger or barrenness of mountains and ocean, but happy approval of the luxuriant, cultivated regions of the tropics. Furthermore, the sublime beauty of the rainforest evokes a mixed reaction from him--at first a "wild delight" and feelings of devotion to something higher, but ultimately a feeling of exhaustion



higher, but ultimately a feeling of exhaustion and discomfort because of the absence of familiar associations from the English countryside.

The inhabitants of these landscapes, in Darwin's view, also participate in this dualism. Describing the Indians of the Pampas, he notes that they are a tall, fine race, "yet it is easy to see the same countenance rendered hideous by the cold, want of food, & less civilization in the Fuegian savage." (162) Later, he is more specific about the cause of the Fuegians' degeneration. In a detailed account of the climate and subsistence problems of the region, he observes: "Their country is a broken mass of wild rocks, lofty hills & useless forests, & these are viewed through mists & endless storms." (212) A wild and useless landscape obscured by mists and storms could hardly stimulate higher moral sentiments or happiness in the viewer.

The influence of environment, however, is also relative to the nature of the inhabitants; Darwin at least partly subscribed to a theory of racial suitability to climate, noting the degeneration of Europeans in the tropics and the contrasting health and strength of Africans. Eighteenth century theories of the relationship between climate and race ranged from the view that racial characteristics had been acquired by Africans through long exposure to tropical conditions (Buffon) to the view that "God had created the varieties of men in order to adapt

each to a particular climate" (Kames).<sup>48</sup> These theories remained influential in the early 19th century.

Although climate could not be controlled, other aspects of the environment could be improved in order to improve the inhabitants, in Darwin's view, much as a garden could be improved in order to produce a certain affect in the viewer. He often notes the civilizing influence of the introduction of agriculture and, in particular, the creation of gardens. Throughout the Diary, the missionary's garden functions as a symbol of this civilizing process of cultivation, both of environments and inhabitants. In "A Letter, Containing Remarks on the Moral State of Tahiti, New Zealand, etc.," which FitzRoy and Darwin composed for publication during the Beagle voyage, the authors describe the work of British missionaries, through FitzRoy's observations and extracts from Darwin's Diary. In a natural paradise like Tahiti, the missionaries' task was relatively easy, cultivating an already gardenlike environment and Christianizing a peaceful, semi-civilized society.<sup>49</sup> However, in New Zealand--a purgatory of cannibal savages and degenerate Europeans living in a landscape composed chiefly of useless fern forests--the missionaries had accomplished little less than a miracle. FitzRoy comments specifically on the English appearance of the houses, barns, and mills: "In the gardens all English vegetables seemed to thrive. The farmyard was thoroughly English";

and Darwin comments on the moral effect of this on the natives.<sup>50</sup> He leaves the reader with final, reassuring images of the young New Zealanders playing cricket with the sons of the missionaries and the natives taking tea in British fashion.<sup>51</sup>

Working in the missionary's garden improved the morals of the inhabitants of the tropics by turning them into pious, industrious, and therefore very useful workers. However, another element of the landscape gardens of the early 19th century was used by the British to improve and make useful the plants of the tropics--the hothouse. The hothouse--a regular feature of botanical gardens at this time--was used by the British to display their botanical booty from the tropics and eventually to develop plants for use on colonial plantations. Erasmus Darwin makes verses on the subject, to "Imperial Kew" which nurses "stranger flowers" in "glass-built fanes" while "Obedient sails from realms unfurrow'd bring For her the unnam'd progeny of spring..."<sup>52</sup> The improved products of these hothouses contributed to the agricultural improvement of the tropics, which Charles Darwin so often noted--the tropics becoming a kind of missionary's garden on a large scale.

Nature, however, did not always look like a missionary's garden in the lands visited by the Beagle. In Tierra del Fuego--pounded by storms and surrounded by the tedious waste of the sea--the tangled beech forest

seemed to Darwin neither beautiful nor useful. He found only a handful of plants of any benefit, and he noted that the pitiful Fuegians were the only people who had a fungus as a staple of their diet.<sup>53</sup> The sublime and grotesque elements of landscapes predominated, providing a stark contrast with the useful and beautiful tropics.

Darwin hoped for the success of a missionary's garden in changing this bleak environment and its inhabitants:

If the garden succeeds, this little settlement may be yet the means of producing great good & altering the habits of the truly savage inhabitants.

(137)

In this hostile environment, however, the project of civilization seemed as doomed as the fragile, impractical supplies that the missionary carried to the country with him:

...the yawl carried the outfit given to Matthews by the missionary society. The choice of articles showed the most culpable folly & negligence. Wine glasses, butter-bolts, tea trays, soup tourins, mahogany dressing cases, fine white linen, beavor hats & endless variety of similar things, shows how little was thought about the country where they were going to. (129)

Unlike the situation in the tropical landscapes, this environment refused the ideal harmony between natural and human elements. Cloth given to the Fuegians was immediately torn up and distributed among them in pieces too small to be useful. (136) Even the Fuegians' own

artificial products seemed crude and inadequate, in Darwin's eyes: Their shelters failed to keep out the wind and rain, and their fragile canoes had not been improved for centuries. (213)

The Fuegians themselves fit this hostile environment just as banditti and hermits fit the grotesque garden landscape. Like hermits, who symbolized a retreat from society, and like banditti, who preyed upon it, the Fuegians either evaded or attempted to disrupt the civilizing efforts of the missionary. Darwin repeatedly employs an imagery of demons in hell to describe the Fuegians and the other "savages" he considers low on the scale of civilization. "From their dress &c. &c. they resembled the representations of Devils on the Stage..." he says of an early encounter with the Fuegians. (119) This imagery may also suggest a moral judgment on their anti-social behavior. He notes their disrespect for property and their constant begging and stealing, traits they share with banditti. The relationship he saw between the rough Fuegian landscape and the savagery of its inhabitants is paralleled in contemporary observations on the moral effects of landscape on manners:

Rough, uncultivated ground, dismal to the eye, inspires peevishness and discontent. May not this be one cause of the harsh manners of savages?<sup>54</sup>

However, it is just on this point--the relationship between environment and inhabitants--that Darwin's observations may have challenged the dualism in the

British view of landscapes, causing him unconsciously to move towards a more mixed view. A note of doubt enters his mind when he reflects upon the savage state of the Fuegians:

There can be no reason for supposing the race of Fuegians are decreasing, we may therefore be sure that he enjoys a sufficient share of happiness (whatever its kind may be) to render life worth having. (213)

In an environment marked by the preponderance of decay and death, the human inhabitants--although degenerate in other ways--are not decreasing in number.

The problematic character of the relationship between environment and inhabitants becomes clearest in Darwin's reactions to the Galapagos Islands. In the Diary, he emphasizes the hellish appearance of the landscape and often describes the inhabitants as demonic. Of his first view, he observes that "the country was compared to what we might imagine the cultivated parts of the Infernal regions to be." (334) He notes the unpleasant smell of the plants and the "most disgusting, clumsy Lizards," calling them "imps of darkness" and concluding "They well become the land they inhabit." (334) The naked lava surfaces were rough and horrid--"aptly compared to a sea petrified in its most boisterous moments." (335) Naked rock and stormy ocean are together captured in a picture that must have been repugnant to Darwin.

However, these descriptions also contain the suggestion that lava rock carried other meanings as well.

He compares the volcanic chimneys to the iron furnaces of Wolverhampton--a hellish industrial landscape in England.

(335) Craters and cones have a "work-shop appearance."

(339) The suggestion of industrial blight and a nearly uninhabitable landscape is foremost in these images, but this industrial metaphor contained other elements that Darwin later made explicit. The factory was first and foremost a source of productivity. When comparing a Galapagos scene to a factory landscape, Darwin may also have intended this positive element. As he speculates in the Red Notebook at the end of the voyage:

Volcanoes blend all substances together; & products being similar over whole world, general circulation. But volcanic action separates some sulphur (perhaps lime) salt, and metallic ores.--which mingling and separating is well adapted to use of mankind...so is Volcano a useful chemical instrument...What more awful scourges to Mankind than the Volcano & Earthquake.--Earthquakes act as ploughs volcanoes as marl-pits...<sup>55</sup>

Here metaphors from science, industry, and agriculture combine to describe the productivity of a process that only in the short term makes the landscape uninhabitable.

Thus, the factory metaphor for the Galapagos landscape contains a mixture of elements usually segregated into different landscapes--productivity and sterility. This mixing of elements is accompanied by a similar mixing of characteristics of garden and hellish landscapes when Darwin speculates on other anomalies he noticed in the Galapagos. At first, he describes the

usual dichotomy:

The constitution of the land is entirely Volcanic; and the climate being extremely arid, the islands are but thinly clothed with nearly leafless, stunted brushwood or trees. On the windward side, however, & at an elevation between one & two thousand feet, the clouds fertilize the soil; & it there produces a green & tolerably luxuriant vegetation.<sup>56</sup>

In the Diary, he enthusiastically comments on this scene, that the eye is "refreshed by a plain green as England in the Spring time." (336) This contrast of the arid, volcanic wasteland with the fertile, almost English-looking areas used for settlement fits well with the dualistic view of landscapes. However, Darwin's expectations concerning the suitability of these environments for habitation are not met. Speaking of the green areas he notes:

In such favourable spots, & under so genial a climate, I expected to have found swarms of various insects; to my surprise, these were scarce to a degree which I never remember to have observed in any other such country. Probably these green oases, bordered by arid land, & placed in the midst of the sea, are effectually excluded from receiving any migratory colonists. However this may arise, the scarcity of prey causes a like scarcity of insectivorous birds & the green woods are scarcely tenanted by a single animal.<sup>57</sup>

He finds himself in a green desert, inhospitable to bird and animal life. On the other hand:

The greater number of birds haunt, and are adapted for, the dry & wretched looking thickets of the coast land.<sup>58</sup>



The dry areas thrive with life despite their wretched look. He goes on to speak of the many finches that live on the seeds of the stunted-looking plants of the region, and in the Diary remarks on the swarms of turtles: "These islands appear paradises for the whole family of Reptiles." (334) As in Tierra del Fuego, the grotesque and demonic inhabitants thrive, despite their appearance and the apparent misery of their environment. The garden and the desert, paradise and hell, have in some respects reversed places, each containing elements usually associated with the other.

Although it remained a tedious waste to Darwin during the Beagle voyage, that other desert--the sea--also came to contain elements associated with the garden landscape. During the voyage, Darwin was not particularly interested in the productivity of the ocean, concentrating far more energy on the collection of land rather than marine specimens.<sup>59</sup> After the voyage, however, he spent considerable time thinking about subjects having to do with the sea, including writing a book on coral reefs based on his observations from the voyage and conducting research on barnacles and their odd reproductive habits.<sup>60</sup>

The beginnings of this change of interest may lie, strangely enough, in his observations of Tierra del Fuego. In the Diary, the sea is mentioned primarily in terms of its harmful effects--its danger to sailors and the difficulties it creates for the Fuegian trying to survive

in a hostile land. Reading this account, it is easy to forget that the Fuegians lived largely on the products of the sea, especially when Darwin disparages the minimal skill required of the Fuegian "To knock a limpet from the rock..." (213) However, five years later, in 1839, he was to describe the ocean around Tierra del Fuego in very different terms. In the first edition of the Journal of Researches, he describes the land of Tierra del Fueago as poorly stocked but the sea as particularly abundant in that region.<sup>61</sup> He mentions the extraordinary length of some of the specimens of kelp pulled from the water and the wide variety of life he found clinging to their branches:

Innumerable crustacea frequent every part of the plant. On shaking the great entangled roots, a pile of small fish, shells, cuttle-fish, crabs of all orders, sea-eggs, starfish, beautiful Holuthuriae (some taking the external form of the nudibranch molluscs), Planariae, and crawling nereidous animals of a multitude of forms, all fall out together.<sup>62</sup>

He then compares the forests of kelp with the forests of the tropics, describing the kelp in terms appropriate to a tree of life:

I can only compare these great aquatic forests of the southern hemisphere with the terrestrial ones in the intertropical regions. Yet if the latter should be destroyed in any country, I do not believe nearly so many species of animals would perish, as, under similar circumstances, would happen with the kelp.<sup>63</sup>

The ocean, described as a tedious waste in 1836 at the

end of the voyage, now contains forests and, in the kelp, a tree of life, which is an element more appropriate to a garden landscape.

The inhabitants of Tierra del Fuego have also undergone a subtle transformation from the Diary to the Journal. Although they are still described as "savages," with Darwin taking the opportunity to expand on some of his descriptions of their disgusting habits, the Fuegians are now viewed differently in terms of their relationship to their environment. As the "miserable lord of this miserable land," the Fuegian now takes a place at the top of a chain of life dependent on the sea:

Amidst the leaves of this plant numerous species of fish live, which nowhere else would find food or shelter; with their destruction the many cormorants, divers, and other fishing birds, the otters seals, and porpoises, would soon perish also; and lastly, the Fuegian savage, the miserable lord of this miserable land, would redouble his cannibal feast, decrease in numbers, and perhaps cease to exist.<sup>64</sup>

By giving full weight to the abundance of the sea around Tierra del Fuego, he has developed a clearer notion of how the Fuegians thrive in that apparently inhospitable land. The ocean, once a dangerous and desert landscape, shares elements of productivity with the more gardenlike tropics.

The kelp as a tree of life or a forest within the ocean functions as a kind of mixed metaphor, combining elements of both the beautiful garden landscape and the sublime and barren landscape. The most thorough and

compelling blend of the elements of these landscape metaphors occurs, however, in the "entangled bank" metaphor which ends the Origin of Species. In this passage, opposing elements--both sublime and beautiful, terrifying and pleasant--combine to form a larger view of the whole of nature and its processes. The early development of this metaphor can also be found in Darwin's observations of Tierra del Fuego.

In the book of plant notes he compiled at the end of the voyage and shortly after, Darwin describes this scene in the beech forests of Tierra del Fuego:

...The extreme dampness of the climate favours the coarse luxuriance of the vegetation; the woods are an entangled mass where the dead and the living strive for mastery.<sup>65</sup>

A mixture of elements from landscape metaphors can be detected in this passage. The vegetation is luxuriant, though coarse, and the term, "entangled," resonates with both positive and negative meanings. In the wild garden, tangled vegetation provided variety and teased the curious eye to look deeper. However, from Darwin's irritation at the difficulty of making one's way through the Fuegian beech forests, it is clear that he often found them an impediment to his curiosity and an unpleasant aspect of the rough and broken landscape. Similarly, there is a balance of positive and negative implications in the rest of this description of the forest as a place "where the dead and the living strive for mastery." Darwin comes to

no conclusion as to which is winning in the Fuegian forest.

However, when the Fuegian forest is described in the Diary, it appears only as the sublime side of a dualistic view of landscapes:

Amongst the scenes which are deeply impressed on my mind, none exceed in sublimity the primeval forests, undefaced by the hand of man, whether those of Brazil, where the powers of life are predominant, or those of Tierra del Fuego, where death & decay prevail. Both are temples filled with the varied productions of the God of Nature.

(437)

This passage was written in 1836 at the end of the voyage. One wonders why Darwin chose to depict such a stark contrast, in light of the more mixed view expressed in the plant notes. Perhaps in the public voice of the travel narrator, he could not express the more mixed impression he received as a lone scientific observer.

The balanced view of a struggle for mastery between life and death which is found in the plant notes is remarkably similar to the description of nature found in the "entangled bank" passage in The Origin of Species. Darwin begins with a description of a pleasant scene--one that could be found in any wild and luxuriant British garden:

It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth...<sup>66</sup>

Variety and interest--"entangled," "many plants of many kinds," "various"--combine with images of happiness--"singing," flitting,"--and utility--a bank that is decently "clothed," "worms crawling through the damp earth." All is as it should be in this garden landscape.

Behind this pleasant scene lie laws which require a "struggle for Life" and the extinction of "less-improved forms."<sup>67</sup> The birds singing on the bushes live by laws that require "famine and death." However, the happiness of the birds singing on the bushes is not merely a surface appearance: It is also a product of the struggle, famine, and death. The image of death and life striving for mastery in the Fuegian forest has been resolved into an image of life (and the progressive improvement of life) following from struggle and death. "Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows."<sup>68</sup> Death is necessary for evolution to function, for "natural selection acts by life and death."<sup>69</sup>

The realms of life and death, happiness and misery, are not the only areas in the entangled bank where elements of the dualistic landscape metaphors have been mixed. Darwin invites the reader to contemplate the entangled bank with its familiar associations from the British garden, yet behind its reassuring and beautiful surface lie all the sublime elements which were so

difficult to "contemplate" on the Beagle voyage--the complex struggles and violent landscapes of the wilderness, whether the overwhelmingly productive rainforest or the decaying gloom of Tierra del Fuego. All of these can be subsumed and contemplated in the form of a familiar microcosm--the entangled bank of a garden. The laws Darwin lists include both the happy ones, of reproduction and variation, and the less happy ones, of struggle and extinction, but he advises us to take these laws in their "largest sense."<sup>70</sup>

The largeness of view, however, comes ultimately from Darwin's ability to blend harmoniously--in a law-governed way--the sublime and the beautiful elements of nature. To do this in a manner that appeals to the sensibilities of his readers he applies an overt comparison between Newton's law of gravity and his own evolutionary laws:

...whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.<sup>71</sup>

Harmony is implied by the discovery of a law-governed order underlying nature's complex appearance.

However, Darwin also appeals to the sensibilities of his readers in a less overt way--through his choice of aesthetic terminology to describe his "view." He manages to harmonize conflicting aesthetic elements and subsume them under one term, much as landscape aesthetics had earlier subsumed elements of beauty with elements of

roughness and decay in the notion of the picturesque. Darwin, however, harmonizes a deeper, more disturbing conflict of the sublime and the beautiful, subsuming it under a different term: "There is grandeur in this view of life..."<sup>72</sup> A grand view is a large view, but grandeur also includes in its meaning a sense of orderliness in the view. By using this term, he may also have intended to evoke a mood of seriousness in the reader: The small beauties of the garden evoke happiness, and the large horrors of war and famine evoke fear, but to understand that from these horrors arise the "endless forms most beautiful and wonderful" as well as the "most exalted object which we are capable of conceiving" requires seriousness as well as largeness of vision.



## CONCLUSION

Darwin's early view of nature contained elements found in early 19th century landscape aesthetics. This tradition of landscape aesthetics had undergone a long period of development in which frightening aspects of nature had at first been recognized and segregated into the category of the "sublime." Later, elements of the sublime were combined with elements of the "beautiful" in the concept of the "picturesque." With a change of taste in landscape design, however, this notion of the picturesque became part of a new set of opposing categories--the picturesque vs. the habitable. The meaning of "picturesque" ultimately shifted in the usage of some to include elements of the habitable. Darwin's use of the term on the Beagle voyage reflects this shift. When describing landscapes, Darwin unconsciously divided them into opposing categories--the beautiful or picturesque tropical landscape and its opposite, the sublime or grotesque wasteland. The inhabitants of these landscapes "fit" their environment in much the way the viewers of landscape gardens were expected to be influenced by the view.

However, Darwin noticed when his expectations of the

relationship between environment and inhabitants were not met: In the Galapagos Islands animals and birds thrived in the barren-looking regions, and in Tierra del Fuego the ocean teemed with life, even supporting the humans who lived there. Beginning in the Beagle scientific notebooks and continuing through the Journal of Researches, one finds Darwin using "mixed metaphors" combining elements of the previously dualistic landscape metaphors. The culmination of this development is found in the "entangled bank" metaphor at the end of The Origin of Species. In that passage, he uses the term "grandeur" to describe a view of nature in which the sublime struggle yields beautiful and improved forms of life.

Darwin's use of an aesthetic terminology familiar to his audience lent power to his explanation of evolution in The Origin of Species. As Gillian Beer observes of this text, "...interaction and the formation of significance takes place not only within a single metaphor but between metaphors sustained in narrative."<sup>73</sup> This interaction--and, indeed, tension--between metaphors plays a role in the process of discovery, as well. Although he did not consciously recognize the dualism in his view of landscape while on the Beagle voyage, Darwin did notice when the characteristics of a landscape blurred that dualism. In the view of nature he expressed in the image of the "entangled bank," he found a way to account for those anomalies while combining elements of the old dualism into

## ENDNOTES

## ENDNOTES

1. Gillian Beer, Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction (London, Boston, Melbourne and Henley: Routledge & Kegan Paul, 1983), 9.
2. Harold L. Burstyn, "If Darwin Wasn't the Beagle's Naturalist, Why was He on Board?" The British Journal for the History of Science 8 (1975)28:62-69.
3. Kenneth Clark, Landscape into Art (London: J. Murray, 1976), 19.
4. Author unknown, review of Humphry Repton's Fragments on the Theory and Practice of Landscape Gardening...in the Respective Arts. The Quarterly Review 16 (Oct. 1816-Jan. 1817): 417.
5. Peter Bicknell, Beauty, Horror and Immensity: Picturesque Landscape in Britain, 1750-1850 (Cambridge, England: Cambridge Univeristy Press, 1981), xiv.
6. Christopher Thacker, The History of Gardens (London: Croom Helm, 1979), 200.
7. Ibid., 203.
8. Ibid., 198.
9. Edmund Burke, A Vindication of Natural Society...Political Miscellanies (London: G. Bell & Sons, 1902), 115.
10. Ibid., 13.
11. Humphry Repton, Esq., An Enquiry into the Changes of Taste in Landscape Gardening...Including a Defense of the Art (London: T. Bensley and Son for J. Taylor, 1816), 28.
12. Thacker, History, 227.

13. Author unknown, Quarterly Review 16: 427.
14. Repton, Enquiry, 155.
15. Ronald Rees, "Constable, Turner, and Views of Nature in the Nineteenth Century," The Geographical Review 72 (July, 1982) 3:253.
16. William Gilpin, Three Essays: On Picturesque Beauty; on Picturesque Travel; and on Sketching Landscape: with a Poem, on Landscape Painting. (with two Essays added). (London, 1808).
17. Charles Darwin, Diary of the Voyage of H.M.S. "Beagle" (Cambridge, England: Cambridge at the University Press, 1933), 427. Hereafter cited in the text by page number only.
18. Paul Barrett, Metaphysics, Materialism, & the Evolution of Mind: Early Writings of Charles Darwin (Chicago: University of Chicago Press, 1974), 12.
19. Gavin de Beer, editor; Charles Darwin. Thomas Henry Huxley: Autobiographies (Oxford: Oxford University Press, 1983), 83.
20. The Oxford English Dictionary, (Oxford: Oxford At the Clarendon Press, 1978).
21. De Beer, Autobiographies, 49.
22. John Milton, Paradise Lost: An Authoritative Text, Backgrounds and Sources, Criticism. Edited by Scott Elledge. (New York: W.W. Norton & Company, Inc., 1975), 84.
23. Clark, Landscape, 16.
24. Henry Home (Lord Kames), Elements of Criticism: in Three Volumes (Edinburgh: Printed for A. Millar, London; and A. Kincaid & J. Bell, Edinburgh, 1762), Vol. I, 244-46.
25. Edward Manier, The Young Darwin and his Cultural Circle: A Study of Influences which Helped Shape the Language and Logic of the First Drafts of the Theory of Natural Selection. (Boston: D. Reidel Publishing Company, 1978), 94-96.
26. William Wordsworth, Prose Works. Edited by William Knight. (London: MacMillan and Co., Ltd., 1896), Vol. II, 31.

27. Ibid., 28.
28. Author unknown. Quarterly Review 16: 429.
29. De Beer, Autobiographies, 53.
30. Ibid., 56.
31. Burke, Vindication, 41.
32. Ibid., 96.
33. Ibid., 43.
34. Gilpin, Three Essays, 9.
35. Repton, Enquiry, 161-4.
36. Ibid., 129.
37. Ibid., 56.
38. Ibid., 147.
39. Bicknell, Beauty, xiv.
40. Ibid.
41. Darwin, Diary, 437, note 40.
42. Edmunds V. Bunkse, "Humboldt and an Aesthetic Tradition in Geography," The Geographical Review 71 (April, 1981) 2: 134.
43. Ibid.
44. Alexander von Humboldt, Views of Nature: or Contemplations on the Sublime Phenomena of Creation with Scientific Illustrations (London: Henry G. Bohn, York St., Covent Garden, 1850).
45. Alexander de [von] Humboldt and Aime Bonpland, Personal Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799-1804. (London: Longman, Hurst, Rees, Orme, and Brown, 1814-29), Vol. II, 185.
46. Repton, Enquiry, 164.
47. Frederick Burkhardt and Sydney Smith, editors; The Correspondence of Charles Darwin (Cambridge, England: Cambridge University Press, 1985),

- Vol. I, Letter to Caroline Darwin; September 1833, 331.
48. Philip D. Curtin, The Image of Africa: British Ideas and Action, 1780-1850 (Madison: University of Wisconsin Press, 1964), 40-43.
  49. Robert FitzRoy, "A Letter Containing Remarks on the Moral State of Tahiti, New Zealand, etc.," Philosophical Tracts (London, 1836), 224-230.
  50. Ibid., 233-34.
  51. Ibid., 234.
  52. Erasmus Darwin, The Botanic Garden...a Poem in Two Parts...with Philosophical Notes.... (London: Printed for J. Johnson, 1791), 207.
  53. Charles Darwin, Journal of Researches into the Geology and Natural History of the Various Countries visited by H.M.S. Beagle...under the command of Captain FitzRoy, R.N. (London: Henry Colburn, Great Marlborough Street, 1839), 299.
  54. Home, Elements, Vol. III, 320.
  55. Charles Darwin, The Red Notebook. Edited by Sandra Herbert. (Ithaca and London: Cornell University Press, 1980), 60-61.
  56. Charles Darwin, "Birds," The Beagle Notebooks. DAR 29-2. Cambridge University Library Darwin Archives; Cambridge, England; 71.
  57. Ibid.
  58. Ibid.
  59. Burstyn, "If Darwin...", 64.
  60. Stanley Edgar Hyman, The Tangled Bank: Darwin, Marx, Frazer and Freud as Imaginative Writers (New York: Atheneum, 1962).
  61. Darwin, Journal, 303.
  62. Ibid., 304-5.
  63. Ibid., 305.
  64. Ibid.

65. Charles Darwin, "Plants," Darwin's South American Plants. 1836-39. Uncatalogued. Cambridge University Library Darwin Archives; Cambridge, England; 3.
66. Charles Darwin, On the Origin of Species...A Facsimile of the First Edition with an Introduction by Ernst Mayr (New York: Atheneum, 1967), 489.
67. Ibid., 490.
68. Ibid.
69. Ibid., 194.
70. Ibid., 489.
71. Ibid., 490.
72. Ibid.
73. Beer, Plots, 96.



## BIBLIOGRAPHY



## BIBLIOGRAPHY

- Barrett, Paul. Metaphysics, Materialism, & the Evolution of Mind: Early Writings of Charles Darwin. With a Commentary by Howard E. Gruber; Transcribed and Annotated by Paul H. Barrett. Chicago: University of Chicago Press, 1974.
- Beer, Gillian. Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction. London, Boston, Melbourne and Henley: Routledge & Kegan Paul, 1983.
- Bicknell, Peter. Beauty, Horror and Immensity: Picturesque Landscape in Britain, 1750-1850; Fitzwilliam Museum Collection. Cambridge, England: Cambridge University Press, 1981.
- Bunkse, Edmunds V. "Humboldt and an Aesthetic Tradition in Geography." The Geographical Review 71 (April, 1981) 2:127-146.
- Burke, Edmund. A Vindication of Natural Society...Political Miscellanies. London: G. Bell & Sons, 1902.
- Burkhardt, Frederick, and Sydney Smith, editors. The Correspondence of Charles Darwin. Vol. I. Cambridge, England: Cambridge University Press, 1985.
- Burstyn, Harold L. "If Darwin Wasn't the Beagle's Naturalist, Why was He on Board?" The British Journal for the History of Science 8 (1975) 28:62-69.
- Clark, Kenneth. Landscape into Art. London: J. Murray, 1976.
- Curtin, Philip D. The Image of Africa: British Ideas and Action, 1780-1850. Madison: University of Wisconsin Press, 1964.
- Darwin, Charles. "Birds." The Beagle Notebooks. 1832-1836. DAR 29-2. Cambridge University Library Darwin Archives; Cambridge, England.
- "Plants." 1836-39. Darwin's S.

American Plants. Uncatalogued. Cambridge University Library Darwin Archives; Cambridge, England.

------. Diary of the Voyage of H.M.S. "Beagle."  
 Edited from the MS. by Nora Barlow. Cambridge,  
 England: Cambridge at the University Press, 1933.  
 New York: Kraus Reprint Company, 1969.

------. Journal of Researches into the Geology  
 and Natural History of the Various Countries  
 visited by H.M.S. Beagle...under the command of  
 Captain FitzRoy, R.N. First edition. London:  
 Henry Colburn, Great Marlborough Street, 1839.

------. On the Origin of Species by Charles  
 Darwin: A Facsimile of the First Edition with an  
 Introduction by Ernst Mayr. New York: Atheneum,  
 1967.

------. The Red Notebook of Charles Darwin.  
 Edited by Sandra Herbert. Ithaca and London: Cornell  
 University Press, 1980.

Darwin, Erasmus. The Botanic Garden...a Poem in Two  
 Parts. Part I. Containing the Economy of  
 Vegetation. Part II. The Loves of the Plants.  
 With Philosophical Notes.... London: Printed  
 for J. Johnson, 1791.

De Beer, Gavin, editor. Charles Darwin. Thomas Henry  
 Huxley: Autobiographies. Oxford: Oxford University  
 Press, 1983.

FitzRoy, Robert. "A Letter Containing Remarks on the  
 Moral State of Tahiti, New Zealand, etc."  
Philosophical Tracts. 8vo. London, 1836.

Gilpin, William. Three Essays: On Picturesque Beauty; on  
 Picturesque Travel; and on Sketching Landscape: with  
 a Poem, on Landscape Painting. (with two Essays  
 added). Third Edition. London, 1808.

Home, Henry (Lord Kames). Elements of Criticism: in Three  
 Volumes. Edinburgh: Printed for A. Millar, London;  
 and A. Kincaid & J. Bell, Edinburgh, 1762.

Humboldt, Alexander von. Views of Nature: or  
 Contemplations on the Sublime Phenomena of  
 Creation with Scientific Illustrations.  
 Translated from the German by E.C. Otte and  
 Henry G. Bohn. London: Henry G. Bohn, York  
 St., Covent Garden, 1850.

Humboldt, Alexander de [von], and Aime Bonpland. Personal

- Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799-1804.  
Vol. II. Translated by Helen Maria Williams.  
London: Longman, Hurst, Rees, Orme, and Brown,  
1814-29.
- Hyman, Stanley Edgar. The Tangled Bank: Darwin, Marx, Frazer and Freud as Imaginative Writers. New York: Atheneum, 1962.
- Manier, Edward. The Young Darwin and his Cultural Circle: A Study of Influences which Helped Shape the Language and Logic of the First Drafts of the Theory of Natural Selection. Boston: D. Reidel Publishing Company, 1978.
- Milton, John. Paradise Lost: An Authoritative Text, Backgrounds and Sources, Criticism. Edited by Scott Elledge. New York: W.W. Norton & Company, Inc., 1975.
- The Oxford English Dictionary, Vol. IV, F-G. Edition (?).  
Oxford: Oxford At the Clarendon Press, 1978.
- Author unknown. Review of Humphry Repton's Fragments on the Theory and Practice of Landscape Gardening...in the Respective Arts. The Quarterly Review 16 (Oct. 1816-Jan. 1817):416-30.
- Rees, Ronald. "Constable, Turner, and Views of Nature in the Nineteenth Century." The Geographical Review 72 (July, 1982) 3:253-69.
- Repton, Humphry. An Enquiry into the Changes of Taste in Landscape Gardening...Including a Defense of the Art. London: J. Taylor, 1806.
- . Fragments on the Theory and Practice of Landscape Gardening. London: T. Bensley and Son for J. Taylor, 1816.
- Thacker, Christopher. The History of Gardens. London: Croom Helm, 1979.
- Wordsworth, William. Prose Works of William Wordsworth. Vol. II. Edited by William Knight. London: MacMillan and Co., Ltd., 1896.