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Erasmus Darwin's Quasi-Environmentalism: Teleology and Moral Agency in *The Temple of Nature*

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エラズマス・ダーウィンの疑似的環境主義 —『自然の神殿』における目的論的傾向と道徳的行為者の観点から—

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要旨：Erasmus Darwin (1731-1802) の自然・生物観には環境論的な要素が見られる。この要素は特に最晩年の詩 *The Temple of Nature* (1803) が扱う生物進化論において顕著である。しかしこうした環境論的意識があるにもかかわらず、『自然の神殿』には自然破壊についての懸念や環境保護への明確な姿勢は見られない。また環境意識に深く関係する問題であり、18 世紀に興隆を見せていた動物愛護の潮流についてもダーウィンはほぼ沈黙守っている。

環境論的要素を示しながらも、本格的な展開に至ることのないダーウィンの思想を、本論文は「疑似的環境思想」と定義する。そして彼の環境思想が「疑似」段階にとどまった要因を、生物進化という「目的論」的な大きな物語と、この物語の中で顕在化する「道徳的行為者」の問題に求める。

Keywords: environmentalism, moral agent, teleology

1. Introduction

Erasmus Darwin's philosophy of nature includes factors that could have characterised it as environmentalism. His principal works, both prose and poetry, indicate a clear awareness of intricate interactions among organisms and non-organic things in nature. These interactions constitute a dynamic ecosystem, or the "economy" of nature, as suggested in the title of his second philosophical poem, *The Economy of Vegetation*. At a micro-level, he thinks of the activity of each organism in terms of material interactions it performs with its immediate environment. Furthermore, in his last poem *The Temple of Nature*, Darwin refers to Pythagoras, who advocated treating all living things, including humans, as equal. These and other aspects of Darwin remind us of the present-day concepts of environmentalism, ecological ethics and animal rights.

In recent decades, the relationship of human culture and the natural environment has been extensively

debated. In literary studies, a school called ecocriticism has investigated literature from environmental perspectives. Often defined as “the study of the relationship between literature and the physical environment” (Garrard 3), or more broadly, “the study of the relationship of the human and the non-human” (5), ecocriticism has provided literary studies with valuable insights. Among them is a radically egalitarian view of nature that considers all entities in the ecosphere as equal. This view, originally advanced by Arne Naess as “deep ecology,” does not admit to mankind any privileged status (Garrard 20-21). In addition to such fundamental aspects of ecology, ecocriticism also recognises the more familiar, but similarly important issue of the welfare of animals, both domestic and wild. Darwin’s thinking was less radical than deep ecology, and he did not seem to be forming the concept of animal rights. Yet, his recognition of the interdependence of organic and other entities, including human beings, together with his Pythagorean references, indicates that he was not conceptually distant from present-day ecological views and environmental concerns.

However, with all these features in his writings, Darwin was actually not active in protecting nature, nor did he think of preventing the maltreatment of animals. On the contrary, he upheld the human exploitation of nature and natural resources. He was a founding member of the Lunar Society of Birmingham, an amateur group of intellectuals concerned with technology, science and modern industrial processes. Like other Lunar Society members, for example, the industrialist Josiah Wedgwood, the inventor James Watt, and the scientist-theologist Joseph Priestley, Darwin believed in the significance of technological advancement and human intervention in nature. Though his writing indicates signs of environmentalist thinking, this does not appear to be consistent with his manipulative attitude towards the natural world.

This inconsistency is worth critical attention. For Darwin is an important figure in the history of ecological thought. Intellectually active through the latter part of the eighteenth century, he was at the historic juncture of the cultural transition from the eighteenth century to the age of Romanticism. His conception of the economy of nature, inherited from the eighteenth-century tradition of Linnaean botany (Hutchings 91), was handed down as an important theoretical formulation on organic life to the Romantics such as Samuel Taylor Coleridge (McKusick 39). An explication of problematic aspects of Darwin’s ecological thought, therefore, may contribute to a better understanding of the general trend of environmental thinking at the turn of the nineteenth century.

Darwin published substantially. He wrote highly popular epic-length poems. His scientific treatises, *Zoonomia* and *Phytologia*, are comprehensive accounts of animal and plant life, the former exceeding seven hundred pages, and the latter five hundred. He headed the Lichfield Botanical Society for the laborious task of translating Linnaeus’s *Systema Vegetabilium* and *Genera Plantarum*. He also published medical-scientific articles in *Philosophical Transactions of the Royal Society* and other

prestigious periodicals. From this extensive range of work, the present paper focuses on *The Temple of Nature* published posthumously in 1803. The choice is justified in two respects. First, as his last major compositional project, the poem provides a compressed overview of the thinking that he developed through his life. The second justification is the fact that the poem's principal theme is biological evolution. Evolutionism has an affinity with ecological thinking. As it assumes a single shared origin for all species, evolutionism conceptually counters the long-held view of the hierarchical difference between human beings and other species. Evolutionism is thus considered by students of environmental ethics to be central to modern preservationist thought (Hargrove 161).

In literary criticism, Darwin has been treated as a transitional figure. Though his significance for the Romantic poets has been demonstrated by Desmond King-Hele's 1986 work, Darwin's contribution tends to be regarded as that of a conveyer of existing ideas, principally of the idea of the economy of nature. Critical literature points out that the concept of nature's economy had been "in the air" by Darwin's time through the work of Linnaeus and his followers (McKusick 39). For instance, the Linnaean disciple Isaac Biberg entitled his essay as "The Oeconomy of Nature," and the English version of this piece was frequently republished in Darwin's time. Darwin's original thinking, on the other hand, appears to be less fully appreciated. The present paper is an attempt to correct this tendency by examining his environment-related thinking in terms principally of its philosophical grounds.

In the next, second section of the present article, I shall discuss the environmental aspects of Darwin with reference to *Zoonomia* and other documents. I shall then focus on *The Temple of Nature* in my third section and explicate the poem's features that are related to environmentalism, ecology and animal welfare. After this, in the fourth section, some facts will be pointed out about Darwin that are not consistent with the ecological side of his thinking. Then in the same section I shall explore the philosophical grounds that served to keep his views from attaining genuine environmentalism, by taking into account utilitarian moral philosophy as well as environmental ethics. The key concepts in this analysis are teleology and moral agency. As my argument will show, the former is clearly one of the presiding principles of *The Temple of Nature*, while the latter could well have supported Darwin's environmental concerns but is actually absent from his system. On the basis of this argument I shall define Darwin as a "quasi-environmentalist." The concluding section is an attempt to place Darwin's views in historical context by referring to the environmental awareness of the two Romantic poets, Coleridge and William Wordsworth. Teleology and moral agency will again bear a key significance in considering these two poets.

2. The Environmentalist Aspects of Darwin

Darwin describes the functioning of living forms in terms of their material interaction with their environment. Darwin's biological view thus can be defined as environmental. Such environmental viewpoints appear, for instance, in his theorising on the sexual reproduction of organisms (McNeil 96). *Zoonomia* explains that in heterosexual reproduction the microscopic "ens," or the embryo, is produced by the father, and the mother supplies nutrition and oxygen in the form of amniotic fluid (487). Darwin conjectures that if the embryo is received into a slightly anomalous maternal fluid, it develops new sensitivities in reaction to this new environmental condition (497). This development leads to the emergence of fresh physical features in organisms and can contribute to evolution (497).

Perception, too, is defined as a series of interactions between an organism and its environment. The perception of motion may appear to be related to the operation of consciousness that is free from physicality, but according to *The Temple of Nature* this is a purely physical process. The idea of the shape of an object is brought about by the sense of touch. The tactile nerves feel compression when one touches a solid object. The shape of the compression thus received is equivalent to the perceived part of the object. By repeating this process, a complete recognition of the object's shape is obtained. The idea of motion arises when the shape of an object or the configuration of objects thus perceived changes in time. Darwin claims that "motion is no other than a perpetual variation of figure" (*Temple of Nature*, footnote to 3. 125: 102). It is no surprise that tactile recognition is based on the interaction of the nerves and the external environment. But in Darwin's thinking, a more abstract level of perception, like that of motion, is based on physical interactions involving the environment.

The faculty of vision, too, has material-environmental aspects. Drawing on George Berkeley's theory of vision, Darwin admits that in the mechanism of perception, visual impressions on the retina function as signs comparable to language, which are at a remove from the external world. Nevertheless, some phases of visual recognition are regarded as physical. In a footnote to *The Temple of Nature*, Darwin points out a direct correspondence between an external object and its perceived optical image by referring to the fact that the "stimulated part of the retina resembles exactly the visible figure" (Footnote to 3. 144: 104). In the same footnote, he concedes that visual images can only be recognised as corresponding to external objects by "acquired associations" that link vision to tactile experiences. Yet, as is shown below, association is considered by the poem as part of the physical system of sentience. The sense of vision is not denied physicality. Darwin, in fact, thinks of the ideas of visual images as physical entities, as he regards them as motions occurring in the nervous system. In *Zoonomia*, he conjectures the presence of "sensual motion" which is "synonymous with the word idea" (11). In the same treatise, he also remarks that ideas are physical, constituted by the motions that are activated by sense organs (14). When one

recognises a visible object, the recognition involves material interactions with the external world, and the resultant visual idea assumes material attributes. The sense of vision, too, is environmental in Darwin.

The physicality of ideas is related to the material system of sentience that Darwin proposes in *Zoonomia* and other writings. He stipulates four “faculties” that constitute sentience and consciousness. As these faculties—irritation, sensation, volition and association—belong to the “sensorium,” or the nervous system, they can be said to pertain in the physiological system of the human body. The initial stage of the development of sentience is an agitation that occurs in sense organs. This physical agitation, or “irritation,” is caused by environmental stimuli “in consequence of the appulses of external bodies” (*Zoonomia* 32). When irritation is recognised by the brain, or the central part of the nervous system, it turns into a “sensation,” which is either pleasure or pain (35). “Volition” then occurs in response to the pleasure or pain of sensation (32). These simple processes of stimulus and reaction grow gradually complicated by association, which is also defined as physical: “an exertion or change of some extreme part of the sensorium . . . in consequence of some antecedent or attendant fibrous contractions” (33).

Thus the four faculties of sentience are principally described in terms of material causation. Indeed Darwin rephrases them as “sensorial motions” (33). It should be noted that in theorising them, he does not rely on a transcendental principle. Despite the complexity of structure and functioning, animal sentience is constituted and operates materially. Being material, sentience can be seen as an extension of the external environment inside an organism.

The physicality of ideas and sentience suggests that Darwin’s philosophy of nature is fundamentally based on the notion of the materiality of life. He assumes the presence of a vital principle called “the spirit of animation,” which resides in the body (*Zoonomia* 10). The spirit gives rise to actions in organisms, as it is “the immediate cause of the contraction of animal fibres” (30). Further, not only does it cause physical movements by moving motor nerves and muscles, but it also contributes to perception. When one reflexively feels his own physical shape, for example, he is relying on the spirit of animation. *Zoonomia* explains that the human nervous system is extended throughout the body, and as the spirit permeates the system, the distribution of it takes exactly the same shape as this network of nerves. The configuration of this neural network in turn corresponds to the shape of the body. One can have an intuitive sense of his own body shape thanks to the spirit of animation pervading the nerves (111).

Significantly, the spirit of animation is not an immaterial, transcendent principle. From the assumption that “*No two things can influence or affect each other, which have not some property common to both of them*” (115), Darwin concludes that the spirit, as the motive force of vital action, has materiality: “at the time it communicates or receives motion from solid bodies, [it] must itself possess some property of solidity” (115). The Darwinian spirit of animation is conceptualised as a thin fluid that is spread through the animal body.

The materiality of the spirit endows it with an environmental significance. Because it is a physical entity, it can directly mediate organisms and the external environment. From its function as the activator of animal motions, Darwin infers that a certain amount of the spirit is consumed every time it causes an action and that it should thus be constantly replenished. In *The Economy of Vegetation* he locates the source of the spirit in the atmosphere: "Perhaps the spirit of animation itself is . . . acquired from the atmosphere" (Footnote to 1. 401: 46). In this view, each organism physically participates in the global-scale system of atmospheric circulation via the pervasive ethereal entity. Organisms, while living in the global environment, actually constitute part of it.

The spirit of animation is comparable to the ether, the rarefied fluid that was assumed by early modern natural philosophers to permeate the whole universe. Isaac Newton, for instance, thought of the ether as the universal medium of gravity. Darwin further elaborated this Newtonian concept and proposed a hypothesis that there were several different kinds of it, each respectively mediating gravity, chemical affinities, heat, electricity and magnetism. He did not go as far as to construct a theory that integrated the spirit of animation with these other ethereal media of natural forces. However, given the conceptual closeness of the Newtonian ether to the spirit of animation, he was presumably hoping to do so. Under such a grand theory, organisms would have been placed in a unified global environment where biological, physical and chemical phenomena were interrelated.

Though he did not construct such a comprehensive system, his speculation on nutritional circulation within the natural ecosystem can be regarded as a theoretical attempt in that direction. *The Economy of Vegetation* states that plants produce sugar through photosynthesis: Sylphs, or the nymphs of the air, are described to "wed the enamour'd OXYGEN to LIGHT" (4. 34). Through photosynthesis, green plants perform "the decomposition of water, and the conversion of it into saccharine matter" (*Economy of Vegetation*, Additional Note 39: 437). Green vegetation plays a vital role in the whole ecosystem, as the poem says, "since animals are sustained by these vegetable productions, it would seem that the sugar-making process carried on in vegetable vessels was the great source of life to all organized beings" (Additional Note 39: 437).

Thus in Darwin's theory of life, single organisms are integrated into the physical environment. Their development and operation are materially defined in terms of environmental stimuli and reactions to them. All life forms are interdependent on each other, and they participate in the material cycle of nature. The spirit of animation, too, is ultimately material and connects organisms directly to the global ecosystem. From these environmentalist perspectives, *The Temple of Nature* seems to deserve a special attention. As stated earlier, this posthumously published poem can be seen as epitomising Darwin's life-long thinking, and as a work of evolutionism, it can be considered to have a special relevance to environmentalism. The next section focuses on this work.

3. *The Temple of Nature*: Evolution and Environmentalism

The Temple of Nature deals with the evolution of species that eventually leads to the establishment of human civilisation. The poem is a development from the earlier, unfinished epic *The Progress of Society* on technological advancement of humanity. The subtitle of *The Temple of Nature*, "The Origin of Society," derives from this projected poem (Priestman, "Introduction" para. 13: N.p.). Accordingly the scope of *The Temple of Nature* covers not only the genesis and development of the organism but recent socio-political events, too, thus integrating a theory of evolution with a vision of human society. This is significant from an environmentalist perspective. For in this manner, the poem regards human intellectual activity as continuance from the material origin of organisms. This view is not far from present-day deep ecology. If the mind is connected via evolution to the material aspect of nature, human intellect cannot claim a qualitatively higher status than the physical world.

The Temple of Nature is constituted by a series of queries about the origin and development of life. These questions, uttered by the Muse, are then answered by Urania, the priestess serving Goddess Nature. In Canto 1, the Muse entreats Urania to "disclose / From what fair fountain mortal life arose, / Whence the fine nerve to move and feel assign'd, / Contractile fibres, and ethereal mind" (1. 215-18). The Muse also asks the priestess to show how "soft affections weave the social plan" (1. 221); i.e. in what way love and sympathy have led to the founding of human society. In response to these questions, Urania's story of evolution unfolds.

On the primeval earth wholly covered by the seas, narrates the priestess, organisms were born under water: "Nurs'd by warm sun-beams in primeval caves / Organic Life began beneath the waves" (1. 234-35). The instrumental cause of the birth of organisms is attributed to physical phenomena. "HEAT," produced by chemical decomposition, gives matter a moving force; the physico-chemical power of "REPULSION" enables the free movement of atoms and creates fluid and gas; "ATTRACTION," another physical power, combines atoms together and builds up solid matter (1. 235-42). These processes bring about the materials necessary to form fibrous tissues that constitute organic bodies. After this, the power of "CONTRACTION," activated by the spirit of animation, gives life to organisms by moving neural-muscular fibres (1. 243-46). Through these stages, "without parent by spontaneous birth / Rise the first specks of animated earth" (1. 247-48). Life is thus created without recourse to transcendental intervention. One might suspect that supernatural agency lurks in the concept of the spirit of animation. However, since the spirit is here regarded as comparable to the physico-chemical forces of heat, attraction and revulsion, transcendent implications are carefully excluded. Life was born, in Darwin's thinking, by the forces of the physical environment.

The initial stages of biological evolution involve the aforementioned four faculties that constitute

sentence: irritation, sensation, volition and association. “The first specks of animated earth” are assigned irritability, the power of receiving external stimuli through sense organs and sensory nerves. Thus in an incipient stage of evolution, organisms are called “irritated tubes” (1. 255), or tubular living entities that can receive the impression of external objects. I have pointed out earlier that in Darwin’s system, sensation occurs when sensory perceptions are received in the central nervous system. Accordingly, “Next the long nerves unite their silver train, / And young SENSATION permeates the brain” (1. 269-70). As a sensation is either a pain or pleasure, volition emerges to evade or seek it: “From pain and pleasure quick VOLITIONS rise” (1. 273). Volitions first reveal themselves simply in the form of the exertion of physical power and the operation of sense organs: “[Volitions] Lift the strong arm, or point the inquiring eyes” (1. 274). But later volitions lead to intellectual activities that involve “Reason” (1. 275) and the ethical judgment of “right and wrong” (1. 276). Ideas and actions thus given rise to are then combined together by association to make the complex system of consciousness: “Thoughts join to thoughts, to motions motions cling” (1. 278). Eventually by association, emotions independent of external stimuli, such as “Imagined joy, and voluntary woe” (1. 280), are produced. Again, organic development described so far has nothing to do with supernatural agency. Darwinian evolution is realised by a series of interactions between the environment and individual organisms.

An important corollary of this organic development is the equality of living things. The interlocutor Urania relates that evolution produces a range of species from the “tall Oak” (1. 303), the “Whale” (1. 305) and the “lordly Lion” (1. 306) to the “Eagle” (1. 307). Over and above them is the “Imperious man, who rules the bestial crowd” (1. 309). Endowed with “language, reason, and reflection” (1. 310), he “scorns this earthly sod, / And styles himself the image of his God” (1. 311-12). Yet exactly like other life forms, he, too, “arose from rudiments of form and sense, / An embryon point, or microscopic ens” (1. 313-14). In *Zoonomia*, Darwin makes the same claim in a more tentative manner, putting this proposition in interrogative sentences: “would it be too bold to imagine, that all warm-blooded animals have arisen from one living filament” (505); and “shall we conjecture, that one and the same kind of living filaments is and has been the cause of all organic life?” (507). *The Temple of Nature* is more assertive in claiming the evolutionary origin of mankind, and this stronger attitude further undermines the elevated status traditionally assigned to the human being over other life forms. Darwin effectively deprives mankind of its ontological privilege.

Canto 2 describes the transition from monogenesis to sexual reproduction. It should be noted that Darwin describes the acquirement of sexual procreation as a way to adapt to environmental conditions. At the monogenetic stage, organisms continue to produce copies of parents: “Birth after birth the line unchanging runs, / And fathers live transmitted in their sons; / Each passing year beholds the unvarying kinds, / The same their manners, and the same their minds” (*Temple of Nature* 2. 107-10). Some

improvements are surely possible at this stage: "new buds [engendered] by solitary reproduction . . . are larger or more perfect for several successive years. . . . The same occurs in bulbous-rooted plants raised from seed; they die annually, and produce others rather more perfect than the parent for several years . . ." (Footnote to 2. 114: 57-58). Yet, after these "several years," species become weakened by "Increasing wants" (2. 113). These "wants" are environmental. The poet remarks that organisms acquire genetic disorders owing to an unfriendly climate or to inadequate nutrition: "The clime unkind, or noxious food instills / To embryo nerves hereditary ills; / The feeble births acquired diseases chase, / Till Death extinguish the degenerate race" (2. 163-66).

Such a doom can be avoided by sexual reproduction, the combining of "The mother's beauty and the father's strength" (2. 124). The poem does not elaborate specifically how sexual reproduction improves species. Darwin might have thought that this was too obvious a process to require explanation, or this might be because he thinks of the two forms of procreation, sexual and non-sexual, as a natural continuum rather than two utterly distinct phases that require a separate theoretical treatment. Indeed, when he remarks that "the races of animals perpetually improve by reproduction" (*Temple of Nature*, Additional Note 8: 243), he does not specify whether he is discussing solitary or heterosexual procreation. When the same note refers to microscopic animals that become larger by "successive reproductions" (243), it is unclear which form of reproduction Darwin has in mind.

There are, however, suggestions in the poem that Darwin is considering some specific ways in which sexual reproduction contributes to evolution. With respect to the evolution of plants, he alludes to the botanist Linnaeus, who, perceiving "the changes produced in the vegetable world by sexual reproduction," supposed that "not more than about sixty plants were at first created, and that all the others have been formed by their solitary or sexual reproductions" (Additional Note 8: 243). Sexual procreation in plants is also considered to contribute to the evolution of insects. The advent of sexual difference in the flora means the formation of anthers and stigmas. Darwin conjectures that the original forms of insects might have been these reproductive organs of flowers. He writes that these floral parts "had by some means loosened themselves from their parent plant . . . and . . . other insects in process of time had been formed from these" (Footnote to 2. 302: 74). He surmises, in short, that the tremendous variety of insects in the current world may be due to heterosexual reproduction originally derived from vegetable sexual organs.

Canto 3 expounds on the progressive development of the human mind. The focus here is on sentience and consciousness, but its basic outline is the same as Canto 1's account of the evolution of organisms through irritation, sensation, volition and association. Two points are worth noting, however. One is the physicality of ideas already advanced in *Zoonomia*. A footnote in Canto 3 defines ideas as internal repetitions of sensory stimuli from the outside world:

. . . as our ideas, when we perceive external objects, are believed to consist in the actions of the immediate organs of sense, in consequence of the stimulus of those objects; so when we think of external objects, our ideas are believed to consist in the repetitions of the actions of the immediate organs of sense. . . . (Footnote to 3. 303: 120)

Ideas are the repetitions of sensory “actions,” which are the impressions of external objects received by sense organs. This passage effectively claims that mental processes are physical processes and they are materially related to the external environment.

Another point to be noted is Darwin’s view of language, which also has some echo from his materialist conception of ideas. He considers speedy signification is an important factor for language to function properly. Such rapidity in signification, he conjectures, is enabled by the omission, or abbreviation, of parts of words: “Abbreviation . . . leads the volant trains of words along” (3. 391-92). He then makes a curious remark that abbreviation gives wings to Hermes: “[abbreviation] decks his forehead and his feet with wings” (3. 393). This claim reminds us of the language theory of the contemporary philologist John Horne Tooke. In *The Diversions of Purley*, Tooke advances a theory on the etymology of the English language. This treatise, the first volume of which was published in 1786 and the second in 1806, considers that linguistic signification is accelerated by omitting redundant parts of words. Tooke writes that “*Abbreviations* are the *wheels* of language, the *wings* of Mercury” (1. 24). Mercury, the god of speech, is the Roman equivalent of Hermes. In Tooke’s work, linguistic signification thus sped up is visualised in its frontispiece, in which Hermes is putting on sandals and a helmet, both winged. This representation exactly matches Darwin’s reference that abbreviation decks Hermes’ forehead and feet with wings.

In Tooke’s theory, the noun is the most fundamental among all parts of speech. In fact, all other parts of speech are thought to be derived from nouns. The noun, furthermore, is considered to be in close proximity to sensory impressions, fundamental cognitive data directly connected to the external world. Tooke regards nouns as the “signs of . . . impressions” (1. 49), and as all parts of speech are derived from nouns, “Every word . . . must be the Name, of a Thing” (2. 435). He claims that all words are more or less connected to the external world via their roots, nouns. Darwin’s understanding of Tooke is accurate, as the poet, too, thinks that nouns are direct reflections of external stimuli, or the “names of things” (*Temple of Nature*, Additional Note 14: 326), and that all parts of speech are etymologically based in nouns. Darwin regards human existence as embedded in the environment and interactive with external material stimuli. His linguistic thinking provides another piece of evidence that confirms this conception.

Entitled as “Of Good and Evil,” Canto 4 of *The Temple of Nature* raises a fundamental moral question: the justification of the suffering of living things. Faced with this issue, the poem proposes an outlook that suffering and death, however tragic they may be, are ultimately compensated. In presenting this

perspective, the canto puts forward a view that sees humans and non-humans as fundamentally equal. This is another statement about Darwin's environmentalist position.

The equality of living things has been tentatively suggested in Canto 2. The poem there refers to the mutability of living things and contrasts this mutability with the indestructibility of matter: "Organic forms . . . Live but to die, and die but to revive! / Immortal matter braves the transient storm, / Mounts from the wreck, unchanging but in form" (2. 41-44). Darwin compares the natural recycling of matter in the coming and going of organisms to Pythagoras' theory of the transmigration of souls, as in a footnote the poet alludes to "the system of transmigration taught by Pythagoras" (Footnote to 2. 43: 51). He conjectures that this Greek philosopher's idea was probably inspired by observing "the perpetual changes of organic matter from one creature to another" (Footnote to 2. 43: 51). Like souls, matter eternally circulates through generations of transient living things, whether they are human, animal or vegetable.

This semi-Pythagorean conception of material transmigration is then refocused in Canto 4 in relation to the issue of organisms' death and suffering. The canto justifies these tragic aspects of the world by arguing that the migration of matter from a generation of organisms to another produces joy that adds to the total amount of happiness. When an organism dies, the matter that constitutes its body is decomposed, and new life forms are born from the decomposed matter. Such rebirths, according to Darwin, are accompanied by joy:

. . . when a Monarch or a mushroom dies,
Awhile extinct the organic matter lies;
But, as a few short hours or years revolve,
Alchemic powers the changing mass dissolve,
Born to new life unnumber'd insects pant,
New buds surround the microscopic plant;
Whose embryon senses, and unwearied frames,
Feel finer goads, and blush with purer flames;
Renascent joys from irritation spring. (4. 383-91)

The creation of joy nullifies the significance of death, as death is now seen as a mere change of forms:

The wrecks of Death are but a change of forms;
Emerging matter from the grave returns,
Feels new desires, with new sensations burns;
With youth's first bloom a finer sense acquires,
And Loves and Pleasures fan the rising fires. (4. 398-402)

Pythagoras is referred to in this context. The Greek philosopher is described as teaching "how restless atoms pass / From life to life, transmigrating mass" (4. 419-20). Here, matter is shared indiscriminately

among living things that are traditionally regarded as existing at different hierarchical levels:

. . . the same organs, which to day compose
The poisonous henbane, or the fragrant rose,
May with to morrow's sun new forms compile,
Frown in the Hero, in the Beauty smile. (4. 421-24)

From this universal sharing of matter, Pythagoras draws a moral principle: "man . . . Should eye with tenderness all living forms, / His brother-emmetts, and his sister-worms" (4. 426-28). A footnote further explains that "from this doctrine [of transmigration] he [Pythagoras] inculcated a system of morality and benevolence, as all creatures thus became related to each other" (Footnote to 4. 417: 178). This moral view must have been shared by the poet himself. Given his confident tone, it is quite certain that Darwin, too, believes in the relevance of the benevolent moral attitude that treats all life forms as equal, brothers and sisters to humans.

I have shown that *The Temple of Nature* can be read from an environmentalist perspective. In the poem Darwin is aware that organisms, including humans, are embedded in the material economy of nature, in which all living forms interact with other living and non-living entities. By alluding to the migration of matter among organisms, the poet also emphasises the Pythagorean idea of the equality of all living things. From these features it appears reasonable to expect Darwin to be an environmentalist concerned with the preservation of nature and the protection of non-human animals. As pointed out earlier, though, this expectation is not fulfilled. It seems that Darwin's stance towards the natural environment contains subtle inconsistencies. The next section will investigate the aspects of his thinking that keep him from being a thorough environmentalist.

4. Darwin's Quasi-Environmentalism

From our present-day perspective, Darwin's attitude to nature looks somewhat ambiguous. Although his view is close to environmentalism in some respects, he is not a preservationist of nature, nor does he seriously consider animal welfare. Human intervention in nature seems to be regarded by him largely in a positive light. We have seen that in Darwin's evolutionism, mankind's intellectual sphere is continuous with its biological origin. This notion has an affinity with the egalitarian view that regards mankind and other living things as fundamentally equal. On the other hand, the same notion can foster an attitude that uncritically accepts human activities in the realm of nature as unproblematic, because the notion will regard human conduct, whether harmful to the environment or not, as an integral part of nature, tolerating even an explicit exploitation of the environment. The following few paragraphs will look at such an

exploitive attitude in Darwin.

We have seen that volition emerges out of the developmental process of sentience. Canto 4 sees this faculty give rise to the intellectual activity of scientists such as Newton, Herschel and Archimedes (4. 232-42). The last-mentioned natural philosopher was technologically minded, as he thought about applying his geometric theory to weaponry for the purpose of defending his home state (4. 243-47). Darwin also thinks about another instance of practical application of science by citing the case of Thomas Savery, who devised a steam-powered machine to pump up water:

So SAVERY, guided his explosive steam
In iron cells to raise the balanced beam;
The Giant-form its ponderous mass uprears,
Descending nods and seems to shake the spheres. (4. 249-52)

Savery's was an earlier industrial steam engine, and as the last line of this quotation suggests, the invention entailed portentous consequences. Living in the age of the Industrial Revolution, Darwin no doubt knew what material influence Savery's invention had exerted on nature and human society. In the above passage, however, he is not cautious at all of the environmental implications of Savery's invention. Following the lines on Savery, another example of technological progress is presented: the invention of spinning. Initially this technique was practiced on the banks of the Nile by ancient Egyptians (4. 254). Later in industrialised Britain, this was transformed into Arkwright's mechanised spinning frame. This machine is again quite uncritically praised in the poem as beneficial, producing "the silver tissue [that] clothed the world" (4. 264).

Industrial feats by entrepreneurs of the time are also eulogised in the earlier poem *The Economy of Vegetation*. The next passage is about the construction of canals:

So with strong arm immortal BRINDLEY leads
His long canals, and parts the velvet meads;
Winding in lucid lines, the watery mass
Mines the firm rock, or loads the deep morass,
With thousand locks a thousand hills alarms. (3. 349-53)

Described as "lucid lines," the engineer James Brindley's canals here appear as aesthetic features of natural scenery. It is possible to read into this passage harmful implications of canal construction: cutting meadows into unnatural segments, consuming underground resources, transforming marshes into freight-navigation routes and disturbing local ecosystems by building locks. But these injurious implications are only vaguely suggested; they are not presented as the passage's main claim. Rather, by integrating canals into aesthetically pleasing scenery, their possibly negative aspects are rendered

almost invisible. Furthermore, the Goddess of Botany, the poem's narrator, orders the Nymphs of water to "raise the marble bust" (3. 359) of Brindley and "Proclaim his honours" (3. 360). In fact Darwin himself was involved in the project of the Grand Trunk Canal to connect the Mersey and the Trent. The poet even published an anonymous pamphlet, *A View of the Advantages of Inland Navigation*, in 1765, which bespoke his determination to promote this project that would facilitate transport within the rapidly industrialising West Midlands (King-Hele, *Erasmus Darwin* 54-59).

Other examples of the exploitation of natural resources are also presented in a positive light in *The Economy of Vegetation*. This is observed especially clearly in its second canto, whose main subjects are geological features and underground resources. One of the issues taken up there is the use of iron and steel, metals constituting the basis of civilisation. Darwin understands iron to belong to nature's organic economy, because this metal is seen by him as produced "from the decomposition of vegetable bodies" (Footnote to 2. 183: 88). Human volition extracts this substance from under the ground and refines it into usable forms. The vivid description of this process suggests that the poet is confident of the positive significance of the industrial use of the metal:

. . . the panting bellows blow,
And waked by fire the glittering torrents flow;
—Quick whirls the wheel, the ponderous hammer falls,
Loud anvils ring amid the trembling walls,
Strokes follow strokes, the sparkling ingot shines.
(*Economy of Vegetation* 2. 185-89)

Then, being hardened by cold water, iron turns into "adamantine steel" (2. 201).

The lines about iron and steel are accompanied by a long footnote on the recent discovery of an effective method of producing artificial magnets from non-magnetic steel bars. Becoming available by this invention in large quantities, magnetic steel helps sailors to navigate the high seas: "True to the pole, by thee [magnetic steel] the pilot guides / His steady helm amid the struggling tides, / Braves with broad sail the unmeasurable sea" (2. 203-05). Steel, one of the hardest metals, has also brought innovation to agriculture: "By Thee [steel] the plowshare rends the matted plain, / Inhumes in level rows the living grain" (2. 207-08).

Lynne White, Jr., in a classic study on the historical rise of environmentalism, suggests that one of the causes of the current environmental crisis is the introduction of a large, powerful plough in the Middle Ages. While this new agricultural device enabled efficient farming, the same invention also signaled the beginning of an aggressively exploitative attitude towards nature (White 3). Though White's claim might have been made without sufficient empirical grounds, his argument is a convincing account of general human tendencies to subjugate the natural environment. Contrary to White's modern-day

concern, Darwin's agricultural view appears to be nonchalant. While celebrating the aggressive working of the steel ploughshare that "rends the matted plain" (2. 213), he can be optimistic about the mutually nurturing relationship of nature and culture, as he adds that "Intrusive forests quick the cultured ground" (2. 209). Steel, itself a product of the organic cycle of nature, demonstrates to Darwin how apparently aggressive human activity is integral to the harmonious economy of nature.

Another environment-related issue to consider is Darwin's attitude to non-human creatures. As stated, he does not appear to be seriously concerned about animal welfare. The Pythagorean theory of the brotherhood of all living things did not seem to motivate him to be specially attentive to animals. Both King-Hele's comprehensive biography and Donald M. Hassler's study of Darwin's literary views fail to present Darwin as an animal protectionist. In fact, Maureen McNeil's cultural materialist study points out that Darwin tends to see organisms as machines (42-43; 156-58).

Darwin, in contrast to Descartes's view, certainly holds that non-human animals have the ability to feel pain. He theorises on animal sensation as the power of feeling pain or pleasure. Nonetheless, this anti-Cartesian belief does not seem to have led him to the concept of animal welfare. In the eighteenth century, the attitude of kindness to animals, together with compassion with their suffering, had emerged in the religious, moral and literary writings in England, and this trend gathered strength in the second half of the century (Perkins 1-19; Thomas 150-65; Passmore 208-11). Darwin's indifference to animal suffering might not have been uncommon in his era, but it cannot be said to be a standard view among the intellectuals.

Animal welfare is equivalent to the minimising of creatures' suffering and the prevention of their unnecessary death. The problems of suffering and death, in fact, occupy a substantial part of Canto 4 of *The Temple of Nature*. Intriguingly, the poem's logic functions to discount, not emphasise, their significance. The canto begins with the Muse's question about the meaning of suffering and death prevalent in the natural world. Her main focus is on the cruelty of the food chain:

The wolf, escorted by his milk-drawn dam,
Unknown to mercy, tears the guiltless lamb;
The towering eagle, darting from above,
Unfeeling rends the inoffensive dove;
The lamb and dove on living nature feed,
Crop the young herb, or crush the embryo seed. (4. 17-22)

The Muse then enumerates further examples of predation, including nightingales devouring glow-worms, glow-worms eating flowers, parasitical larvae destroying their hosts and dragonflies preying on other insects. The plant kingdom, too, has its "vegetable war" (4. 42), i.e. fight for domination among grass, shrubs and trees. Ivies, for instance, do not live symbiotically with their host tree, the elm. Rather they

“strangle, as they clasp, their struggling friend” (4. 48). In the waters, sharks, crocodiles and whales devour shoals of smaller fish. The Muse wonders if the natural world is not an enormous scene of tragedies: “one great Slaughter-house the warring world” (4. 66).

Urania answers to the Muse by drawing on utilitarian thinking popular in the eighteenth century. The fundamental idea of utilitarian philosophy is that pleasure is good for its own sake and the right action produces the greatest happiness, or the largest amount of pleasure (Plamenatz 2). With this philosophical context presumably as a tacit assumption, Urania argues that, despite tragic suffering and death, the amount of happiness in the world is increasing. Indeed, when she recounts the development of organisms, she refers to pleasures engendered in this process. In reference to the faculty of irritation, for instance, she says that when “The powers of life” (4. 145) infuse “The bliss of Being” (4. 150) into the primordial organism, “in bright groups from IRRITATION rise / Young Pleasur’s trains” (4. 151-52). This is followed by another description of pleasures derived from organisms’ cognitive functions. A footnote claims that happiness depends on “those actions, as they are produced or excited by the four sensorial powers of irritation, sensation, volition, and association” (Footnote to 4. 450: 181). Urania’s point is that the birth and growth of an organism is inevitably accompanied by pleasure.

Towards the end of the canto, the poem’s focus shifts to organisms’ prolific power of reproduction. For instance, “Each pregnant Oak ten thousand acorns forms” (4. 347); “Ten thousand seeds each pregnant poppy sheds” (4. 349); and a herring “covers with her spawn unmeasured shores” (4. 366). All these living forms, “increasing by successive birth, / Would each o’erpeople ocean, air, and earth” (4. 367-68). Human beings, too, if placed under conditions favourable for their survival, “would spread / Erelong, and deluge their terraqueous bed” (4. 371-72). As the birth and growth of each organism are accompanied by pleasure, the total amount of pleasure in the world should be immeasurably large. Besides, the sum of happiness increases in proportion to the growth of population. Thus in the natural ecosystem “Good overbalances Evil” (Canto 4, Contents: 140), the tragic side of nature being overpowered by the growing amount of felicity.

We have seen above that when a living thing dies, it is decomposed into organic matter. Thence arise fresh generations of microbes and insects accompanied by “Renascent joys” (4. 391). We have also argued that this regeneration of life implies a semi-Pythagorean transmigration of organic matter. This material transmigration, in fact, is another mechanism that augment the happiness of living beings. As the organic remains of previous generations supply newborns with nutrients, which are easier to digest and more nutritious than inorganic substances, the vital power of freshly born organisms becomes increasingly great:

. . . as those remains of former life are not again totally decomposed, or converted into

their original elements, they supply more copious food . . . which consists of materials convertible into nutriment with less labour or activity of the digestive powers; and hence the quantity or number of organized bodies, and their improvement in size, as well as their happiness, has been continually increasing. . . . (Footnote to 4. 453: 182)

In addition, the process of natural selection increases the amount of happiness. In *Phytologia*, Darwin argues that despite the apparent mercilessness of the food chain, the natural world proves to be benevolent from a more comprehensive perspective:

By this contrivance [the food chain] more pleasurable sensation exists in the world, as the organized matter is taken from a state of less irritability and less sensibility, and converted into a state of greater. (557)

More active and more highly sentient creatures, which are more likely to survive, have a greater capacity for pleasure. Evolutionary struggles for existence maximise in this way the total amount of pleasure and happiness. With this world picture in mind, in which happiness is ever increasing, Darwin advances a vision of redemption: death is “vanquish’d,” “Happiness survives,” “Life increasing peoples every clime,” and “young Renascent Nature conquers Time” (*Temple of Nature* 4. 452, 453, 454).

The triumph of organic happiness is a counter-argument to the question of death and suffering. This metaphysical argument is to annihilate the tragic significance of death, because in this view death enables a greater amount of pleasure for future generations. In a similar vein, the argument makes individual suffering less deplorable. Organisms are interim beings. Individual suffering merely has a temporary significance on the way towards the final triumph of happiness. Furthermore, according to the accepted philosophical assumption of the time, the perfection of the whole world consists in the existence of every possible degree of imperfection in the parts (Lovejoy 208, 211). This means that local evil in the form of creature suffering contributes to the good of nature as a whole. Darwin’s all-encompassing metaphysics, which may be called teleological optimism, draws attention away from each living thing to the totality of the natural world, which is believed to be ever-improving.

This metaphysical conviction no doubt constitutes the poem’s positive aspects, enabling powerful poetic statements on the progressive course of nature. At the same time, the same conviction has a darker side. In Darwin’s system, individual constituents of the world cannot exert any serious influence on the pre-determined course of evolution. This can be thought of as responsible for the limitations of Darwin’s outlook on the environment and animal welfare.

Philosophical discussion on the environment, especially when involving animal rights, is often conducted in the field of applied ethics. *The Animal Rights / Environmental Ethics*, edited by Eugene C. Hargrove, is a classic collection of essays written from such ethical perspectives. Among the essays,

“Animal Liberation: A Triangular Affair” by J. Baird Callicott, famously puts forward a tripartite structure intended to understand animal liberation with respect to environmentalism. Callicott’s formulation comprises “ethical humanism,” or the traditional anthropocentric view; “humane moralism,” an ethical position that tries to extend humanism to non-human spheres and underlies the concept of animal rights; and the “land ethic,” a moral perspective that does not tolerate anthropocentrism and recognises instead the intrinsic value of the biotic community (40–43).

Callicott’s argument is based on an important assumption: the environmental significance of human moral agency. A moral agent is a being who is capable of acting with reference to right and wrong. A humane moralist is such an agent, as he acts to remove unnecessary suffering from sentient beings. A moral agent believing in the land ethic concerns himself with the health and sustenance of an ecosystem. In both cases, moral agents know that their action will make a difference to the environment. If we did not regard ourselves as moral agents who could exert influence, positive or negative, on animals or on nature at large, environmental ethics would not be a real issue for us. For human action in that case would not be counted as a significant environmental factor. We would not be in the position to be responsible for ecosystems or non-human creatures, as their survival or health would be beyond the bounds of our conduct. In other words, ethical discussion on the environment needs to presuppose human beings as moral agents of an environmental significance.

If we turn our attention to Darwin, we find that human moral agency is excluded from his teleological optimism. In the Darwinian economy of nature, the human being cannot make a significant difference, because, irrespective of his action or concern, the advent of an absolutely felicitous future is guaranteed in the pre-ordained story of biological redemption. This seems to explain why Darwin, while indicating an environmentalist outlook in *The Temple of Nature*, does not manifest a preservationist orientation. In addition, human activities are regarded by the poet as part of the economy of nature. Human action is subsumed under the all-inclusive category of the natural. The human being, in principle, is not an outside force that can improve or disturb the natural economy. In this sense, too, he cannot be a moral agent of a real environmental significance.

A similar argument can be made from the perspective of utilitarian philosophy. Pleasure and pain, for Darwin, are important factors in the development and behaviour of living things. However, the fact that the world is full of pain or suffering does not threaten his optimism, because incremental increase of pleasure or happiness is the predetermined scenario of his metaphysical system. The sufferings of individuals are merely local disturbances that will be annihilated in the final triumph of happiness. Again, the human being is not a moral agent. His conduct is not a factor in the suffering or happiness of creatures.

A comparison with the utilitarian philosopher Jeremy Bentham provides an interesting perspective.

Bentham is recognised as a founding father of the modern animal rights movement. With the recent emancipation of slaves in revolutionary France in mind, Bentham advocates a similar liberation for animals:

The French have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognised that the number of the legs, the villosity of the skin, or the termination of the *os sacrum* [the upper central part of the pelvis], are reasons equally insufficient for abandoning a sensitive being to the same fate? (143)

As indicated in his reference to “a sensitive being,” the domain to which humane morality should be extended comprises sentient beings in general. Bentham famously asserts that “the question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?” (143). At first glance, Bentham’s utilitarianism seems not far from Darwin’s emphasis on the roles of pleasure and pain in organisms. Yet whereas Bentham is a vocal advocate of animal welfare, Darwin, as we have seen, is clearly not.

Margaret Canovan makes a useful observation on Benthamite utilitarianism. The aim of Bentham’s philosophy is to find the best possible action to conduct society towards the ultimate utilitarian goal of the greatest happiness. It is, in other words, to find the optimum path to felicity from a given set of conditions. Significantly, his philosophy does not depend on the metaphysical conviction that the world has an intrinsic tendency to proceed to a better state (Canovan 437). In Bentham’s framework, human moral agency is clearly of substantial significance, since happiness is realised principally by human action. Because no preordained plan of development has been set at a metaphysical level, the conduct of a moral agent can make a contribution to the world. If a human being takes care of animals, their happiness can increase proportionately to the degree of the care given. In this sense, human action bears moral responsibility, and this fact presumably had to do with Bentham’s intention to participate in the contemporary discussion on the plight of animals.

On the other hand, moral agency is not significant in Darwin. The human being’s action cannot substantially improve or aggravate the environment or the welfare of animals. His conduct is merely a minor episode in the grand narrative of evolution. The consequences of human conduct, if at all, will be eventually nullified in the prescribed course of the economy of nature. Hence the human being is not in the position to be responsible for his own action. Given Darwin’s metaphysical assumption of preordained evolution, it is no surprise that with all the references to environmental awareness and to the Pythagorean idea of the brotherhood of living things, he does not embrace full-fledged environmental views or entertain a serious concern for animal welfare. Quasi-environmentalism seems to be the right word for his philosophy.

5. Wordsworth and Coleridge: Moral Agency in the Romantics

In the concluding section, I shall briefly compare Darwin's view with those of two Romantic poets, Wordsworth and Coleridge. From the early days of environmental criticism, Wordsworth has been a central subject of discussion. His poetry and prose works have been scrutinised in relation to conservationism and ecological awareness. I discuss here a semi-autobiographical short piece, "Nutting." This blank-verse poem narrates how the youthful narrator "I" went out to a pristine nook in the forest and gathered hazel nuts, and how in that process he ruthlessly destroyed the untouched greenery of the place. Among the poem's rich connotations, ecological awareness is obviously an important factor. The boy's irrational violence destroyed the local environment of the nook, and he later suffered from a sense of guilt, being faced with the consequences of his own cruel action.

The poem begins with a light mood that reminds us of childlike play. Equipped with nutting gear, the boy enjoys becoming "a Figure quaint" (6). He also playfully puts on a "proud disguise of Beggar's weeds" (7). This light-hearted mood is in stark contrast with what he is going to do in the forest. His destination, "one dear nook" (14), has been exempt from human exploitation: the place was "Unvisited, where not a broken bough / Drooped with its withered leaves, ungracious sign / Of devastation" (15-17). It is "A virgin scene" (19), where violets may bloom and fade for as long as five seasons "unseen by any human eye" (30).

After savouring the visual beauty of the scene, the boy begins his destructive act of nutting:

Then up I rose,
And dragged to earth both branch and bough, with crash
And merciless ravage; and the shady nook
Of hazels, and the green and mossy bower,
Deformed and sullied, patiently gave up
Their quiet being. (41-46)

When his relentless nutting has been over, the boy suddenly feels a sense of regret, as if he were admonished by some spiritual being: "I felt a sense of pain when I beheld / The silent trees and the intruding sky" (50-51). "Nutting" thus problematises the destructiveness of human behaviour. By the accusing presences of the intruding sky and the silent trees, the boy is being held accountable for the havoc he has wreaked on the virgin nook. This means that he is a moral agent of an environmental significance. If "Nutting" can be defined as a poem of the environment, it is partly due to this moral status of the protagonist.

Literary criticism has read Coleridge's poem, *The Rime of the Ancyent Marinere*, as "a parable of ecological transgression" (McKusick 44). The central episode of the poem is the killing of an albatross.

When the old mariner's ship was sailing in a desolate polar seascape, an albatross appeared as a welcome presence: "At length did cross an Albatross . . . we hail'd it in God's name" (63-64). At first the mariner and his mates treated the bird fondly as a pet. But apparently without a good reason, he shot and killed it. After this pivotal action, the mariner and his shipmates went through severe ordeals: heat waves, drought, starvation and the shipmates' insanity and eventual death. The hardship continued until the mariner blessed the beauty of mysterious water-snakes swimming around the ship. After this redeeming episode, he finally came back to his homeland. There he was destined to continue recounting this tragic story to persons of his choice.

Like Darwin's *Temple of Nature*, the narrative action of this supernatural poem is based on a system of metaphysics. Nevertheless, the parable of the killing of the albatross is more genuinely environmentalist than Darwin's poem. The old mariner's conduct, like that of Wordsworth's nutting boy, has brought about grave consequences. He destroyed the bird, or the spiritual essence of nature, and this conduct caused catastrophic effects on himself and the human community he belonged to. The hanging of the dead albatross around the mariner's neck can be regarded as a symbolic gesture of punishment. This indicates that the ship's human community is aware that the mariner's action is grievously criminal. The mariner has symbolically injured the natural and human environment, and he must bear the moral responsibility for it. In this sense, the poem can be called a genuine ecological parable.

Wordsworth and Coleridge created a very different type of literature from Darwin's rigidly neo-classical poetry. It is observed from their poems discussed above that these Romantic poets appreciate the significance of individual human conduct. This is in contrast to Darwin's all-encompassing view that leads to disregarding the suffering and death of single organisms. In the individualism of Wordsworth and Coleridge, the speaking subject is a moral agent who can exert significant influence on the natural and human environment. By contrast, Darwin's teleological collectivism fails to incorporate human moral agency. This difference seems to be a crucial factor in characterising *The Temple of Nature* as a quasi-environmentalist work and those Romantic poems as ecological parables.

Darwin's role in promoting environmentalist views has been recognised by literary studies. However, as suggested in the introductory section of this article, his specific achievement in this respect, along with the limitations of his environmentalism, has not been fully clarified. This article hopefully makes some contribution towards filling this lacuna in literary criticism by explicating the nature of his quasi-environmentalism. The analysis of this article finds a difference in moral attitude between Darwin and the Romantics, suggesting that the cultural divide between neo-classical and Romantic thinkers can be defined in terms of environmental ethics. Conversely, a perspective comprising these two cultural tides may lead to a better understanding of environmentalism. As these questions are beyond the scope of the current article, they should best be dealt with by future research that delves deeper into the historical

significance of environmentalism. Such research could also serve to enhance our understanding of today's intellectual debate on the environment, which, as pointed out by Donald Worster's study, has inherited the legacy of ecological ideas from the eighteenth and nineteenth century (xiii).

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