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T. H. HUXLEY'S TREATMENT OF 'NATURE'

BY OMA STANLEY

The reader of Thomas Henry Huxley may be puzzled in observing the contradictory points of view toward Nature embodied in the various essays. In any one essay the view is consistent. But in one piece Nature appears as a loving mother heaping rich gifts upon her children *if* they obey her rules. And in another Nature is the non-moral sum of all phenomena. That is, in one essay Huxley is romantic; in another, scientific. An effort to explain this opposition required first an examination of Huxley's writings in chronological order. This inspection revealed that in all discussions of Nature made before 1871, Huxley treated the subject from the romantic point of view; and that from 1876 onward, his attitude was scientific. Between 1870 and 1876 Huxley did not discuss the topic. The two periods are separated by an event which may have some significance; namely, the posthumous publication in 1874 of John Stuart Mill's essay "Nature," which had been completed in 1854. The possible relevance of this essay to Huxley's later treatment of Nature will be discussed in due course.

In the early period Huxley discusses Nature four times: once each in 1866 and 1868 and twice in 1870. In the later period I have found eight instances, but two of these are brief and incidental. They occur once each in the years 1876, 1878, 1880, 1888, 1890, 1892, 1893, 1894. In my own exposition of this topic I shall begin with one of the examples from 1870 because in it Huxley comments on his romantic attitude. Then I shall go back to 1866 and move along from there in an orderly fashion.

Writing to his friend Dr. Anton Dohrn on January 30, 1870, Huxley said: "Do you know I did a version of his [Goethe's] *Aphorisms on Nature* into English the other day. It astonishes the British Philistines not a little. When they began to read it they thought it was mine, and that I had suddenly gone mad!"¹

Huxley had translated Goethe's rhapsody for the first number of *Nature*, November 4, 1869. The piece is indeed an extravaganza of poetic prose in which Nature parades as a living, breathing matron, active, purposeful, wise, and beneficent. Goethe had composed it about 1786. A few quotations from Huxley's translation will show its character:

"The one thing she [Nature] seems to aim at is Individuality; yet she cares nothing for individuals. She is always building up and destroying; but her workshop is inaccessible."

"She performs a play; we know not whether she sees it herself, and yet she acts for us, the lookers-on."

"She has always thought, and always thinks; though not as a man, but as Nature. She broods over an all-comprehending idea, which no searching can find out."

"Mankind dwell in her and she in them. With all men she plays a game for love, and rejoices the more they win. With many her moves are so hidden that the game is over before they know it."²

¹ Leonard Huxley, *Life and Letters of Thomas Henry Huxley* (London, 1900), I, 326-327.

² This looks like the source of Huxley's famous game-of-chess illustration in his essay, "A Liberal Education and Where to Find It," of which more anon.

“. . . She is beneficent. I praise her and all her works. She is silent and wise.” “. . . She is cunning, but for good ends, and it is best not to notice her tricks.”

Commenting on his translation, Huxley said: “When my friend, the editor of *Nature*, asked me to write an opening article for his first number, there came into my mind this wonderful rhapsody on ‘Nature’ which has been a delight to me from my youth up. It seemed to me that no more fitting purpose could be put before a Journal, which aims to mirror the progress of that fashioning by Nature of a picture of herself, in the mind of man, which we call the progress of Science.” . . . “Supposing, however, that critical judges are satisfied with the translation as such, there lies beyond them the chance of another reckoning with the British public, who dislike what they call ‘Pantheism’ almost as much as I do, and who will certainly find this essay of the poet’s terribly Pantheistic. In fact, Goethe himself almost admits that it is so.”³

³ The excerpts from Huxley’s translation, and Huxley’s comment, are taken from Wolfgang von Goethe and Thomas Henry Huxley, “‘Nature’; A Literary Find,” *Living Age*, 330 (1926), 681–683.

All students of the 19th century are familiar with Mr. Joseph Warren Beach’s study, *The Concept of Nature in Nineteenth Century English Poetry* (New York, 1936). In this book Mr. Beach gives a superlative treatment of the romantic attitude toward Nature as shown in the poetry of the period. It may be pertinent, however, to quote from what a later writer has to say about Matthew Arnold in this connection. Mr. Lionel Trilling, in his *Matthew Arnold* (New York, 1949), says in part (89f.): “The Art of Goethe, the Beauty of Keats, Love, History, Mind, Self, Society—all had been used to reanimate the world, and of all the new myths perhaps the most successful had been the myth of animate Nature, of which Wordsworth had been the chief exponent. However frequently Arnold may recur to the Spinozistic simplicity that Nature is without mind or personality, he is ever trying some new subtlety to deny what he has affirmed. He has not yet come to his mature sense of ‘what pitfalls there are in that word Nature!’”

“Indeed, in his poetical youth the variety of meaning Arnold gives to the treacherous word is in itself sufficient justification for Mill’s famous essay “Nature”. If, in one sonnet, he cries, ‘one lesson, Nature, let me learn of thee’—the lesson of quiet work—in another, ‘To an Independent Preacher Who Preached That We Should Be “In Harmony With Nature”’, he furiously attacks the shallowness of the preacher’s sentiment.” Here Mr. Trilling quotes the last eight lines of the poem, in which occur the statements that Nature is cruel, stubborn, fickle; and that she forgives no debt and fears no grave. He continues by commenting on Arnold’s similar treatments of Nature in “Religious Isolation,” “Morality,” and “In Utrumque Paratus.”

These comments help to show how widespread the addiction to the pathetic fallacy was at the time. It is no wonder that even scientifically minded people like Huxley fell under such a pervasive spell. Even Mill, it will be remembered, found solace for a time in the poems of Wordsworth. Apparently, however, he finally realized how absurd the current attitude toward Nature was and in his essay “Nature,” written in 1854 when the reaction to the Wordsworthian pantheistic spiritualization of Nature was at its height, set himself the task of establishing a reasonable view.

If the British Philistines had been familiar with Huxley's own writing about Nature up to this time, they might still have been justified in thinking that he had gone mad. They would have seen his derangement, however, not as a sudden collapse but as the climax of a process that had been going on for some time. For Huxley, though not so extravagant as Goethe and others, had written of Nature as an animate being all along and was to continue to do so until 1876, when he first had occasion to treat the subject after the publication of Mill's essay on "Nature" in 1874.

The earliest instance of Huxley's metaphorical view of Nature as animate, to my knowledge, occurs in the essay "On the Advisableness of Improving Natural Knowledge," written in 1866. In this Huxley says that in the eyes of the blind leaders of the blind, "Natural knowledge is no real mother of mankind, bringing them up with kindness, and, if needs be, with sternness, in the way they should go, and instructing them in all things needful for their welfare; but a sort of fairy godmother, ready to furnish her pets with shoes of swiftness, swords of sharpness, and omnipotent Aladdin's lamps, so that they may have telegraphs to Saturn, and see the other side of the moon, and thank God they are better than their benighted ancestors."⁴

Huxley's next exposition of Nature occurs in "A Liberal Education and Where to Find It," written in 1868. Here Huxley maintains that education is knowledge of the laws of Nature. In the game of chess, man plays for his life, fortune, and happiness *against* Nature, whose "play is always fair, just, and patient," and who "never overlooks a mistake, or makes the smallest allowance for ignorance." Originally this piece was a lecture delivered to working men who had little or no mental training. In this, as in other talks to similar groups, Huxley suited his expository method to his audience. He states in the essay that he is using a metaphor. Nevertheless it is a figure which embodies the old pathetic fallacy of the romantic poets. And Huxley emphasizes it by recalling Retzsch's painting of Satan playing at chess with a man for his soul. Huxley suggests that if a "calm, strong angel who is playing for love" be substituted for the fiend—an angel who "would rather lose than win,"—one would have an acceptable image of human life. Other figurative uses are seen in the following: "Nature would begin to teach him,"—i.e., a man created adult. "Nature took us in hand,"—i.e., all born into the world. "Nature is still continuing her patient education of us . . ." "Nature's pluck means extermination."

Man brings himself into "harmony with Nature" through training and self-discipline: he has trained his passions to come to heel by a vigorous will. Huxley goes so far as to say here that the moral laws of men are

⁴ *Method and Results* (New York, 1897), 30. Huxley's use of "natural knowledge" instead of "Nature" in this passage suggests a momentary confusion of terms. In the preceding paragraph he speaks of natural knowledge as the "bountiful mother of humanity." This follows his reference to the peasant woman knitting stockings for her family while climbing the mountain to her home. Surely, Huxley says, one does not think of this toiling mother as a mere stocking-machine. In the passage quoted, it seems reasonable to surmise that he had "Nature" in mind when he used "natural knowledge." Regardless of the term meant, however, the personification is there.

grounded in Nature: ". . . there lies in the nature of things a reason for every moral law, as cogent and as well defined as that which underlies every physical law; that stealing and lying are just as certain to be followed by evil consequences, as putting your hand in the fire, or jumping out of a garret window."⁵

Nature again appears fully personified in 1870 in Huxley's essay, "On the Formation of Coal": "Nature is never in a hurry and seems to have had always before her eyes the adage, 'Keep a thing long enough, and you will find a use for it.'" Nature has "kept her beds of coal many millions of years without being able to find much use for them; she has sent them down beneath the sea, and the sea-beasts could make nothing of them; . . . and it was only the other day, so to speak, that she turned a new creature out of her workshop, who by degrees acquired sufficient wits to make a fire, and then to discover that the black rock would burn."

"The English people grew into a powerful nation, and Nature still waited for a full return of the capital she had invested in the ancient club-mosses."

"Thus, all this abundant wealth of money and of vivid life is Nature's interest upon her investment in club-mosses, and the like so long ago. But what becomes of the coal which is burnt in yielding this interest? Heat comes out of it, light comes out of it; and if we could gather together all that goes up the chimney, and all that remains in the grate of a thoroughly-burnt coal-fire, we should find ourselves in possession of a quantity of carbonic acid, water, ammonia, and mineral matters, exactly equal in weight to the coal. But these are the very matters with which nature supplied the club-mosses which made the coal. She is paid back principal and interest at the same time; and she straightway invests the carbonic acid, the water, and the ammonia in new forms of life, feeding with them the plants that now live. Thrifty Nature! Surely no prodigal, but most notable of house-keepers!"⁶

Though an examination of the *Life and Letters* and other possible sources⁷ has disclosed no direct evidence of Huxley's having read John Stuart Mill's essay, "Nature," Huxley's own handling of the subject before and after the appearance of Mill's essay strongly suggests that he knew it

⁵ The quotations from this essay may be found in *Science and Education* (N.Y., 1897), 80-88. The italics for *against* are mine. With reference to the quotations in the last paragraph above, Huxley's change of view later will be treated below.

⁶ All quotations are from *Discourses Biological and Geological* (N.Y., 1897), 159-161.

⁷ Specifically, Clarence Ayres' biography, Michael St. John Packe's recent biography of Mill, and Houston Peterson's *Huxley, Prophet of Science* (New York, 1932). Though Peterson does not mention noticing Huxley's shift in point of view, he does say (283) that Huxley's essay, "Evolution and Ethics," is "little more than a restatement of Mill's essay on nature in the language of a later generation nourished on *The Origin of Species*." That is, Peterson noted the similarity between Huxley's later view and Mill's treatment in the essay, "Nature." But he did not mention Huxley's shift, though he did note (166) Huxley's earlier contribution to the magazine *Nature*, cited above.

and that he changed his way of writing about Nature partly as a result of reading Mill. He knew Mill's other writings and had a high opinion of them, or at least of some of them, and of Mill as a man of parts. So it seems unlikely that Huxley would not have read Mill's "Nature" when it appeared in 1874, the year following Mill's death.

It will suffice to quote the concluding paragraphs of Mill's essay:

"The word Nature has two principal meanings: it either denotes the entire system of things, with the aggregate of all their properties, or it denotes things as they would be, apart from human intervention.

"In the first of these senses, the doctrine that man ought to follow nature is unmeaning; since man has no power to do anything else than follow nature; all his actions are done through, and in obedience to, some one or many of nature's physical or mental laws.

"In the other sense of the term, the doctrine that man ought to follow nature, or in other words, ought to make the spontaneous course of things the model of his voluntary actions, is equally irrational and immoral.

"Irrational, because all human action whatever, consists in altering, and all useful action in improving, the spontaneous course of nature:

"Immoral, because the course of natural phenomena being replete with everything which when committed by human beings is most worthy of abhorrence, any one who endeavoured in his actions to imitate the natural course of things would be universally seen and acknowledged to be the wickedest of men.

"The scheme of Nature regarded in its whole extent, cannot have had, for its sole or even principal object, the good of human or other sentient beings. What good it brings to them, is mostly the result of their own exertions. Whatsoever, in nature, gives indication of beneficent design, proves this beneficence to be armed only with limited power; and the duty of man is to co-operate with the beneficent powers, not by imitating but by perpetually striving to amend the course of nature—and bringing that part of it over which we can exercise control, more nearly into conformity with a high standard of justice and goodness."⁸

Huxley's first occasion to comment on Nature after the publication of Mill's essay came in 1876. Huxley was now 51 years of age. The essay is "The Three Hypotheses Respecting the History of Nature." Here Huxley speaks of Nature as "a system of things of immense diversity and perplexity"; and of the "conception of the constancy of the order of Nature," which, he says, has become the dominant idea of modern thought.⁹

There is no direct evidence in this essay that Huxley had read Mill. But, though he does not define Nature any further than stated above, his point of view is scientific, not at all romantic. His next discussion, however, seems to reflect Mill clearly. This occurs in *Hume, With Helps to the Study of Berkeley*, written in 1878. On p. 154 Huxley says in part:

"The definition of a miracle as a 'violation of the laws of nature' is, in reality, an employment of language which, on the face of the matter, cannot be justified. For 'nature' means neither more nor less than that which is;

⁸ J. S. Mill, *Nature, The Utility of Religion, and Theism* (London, 1874), 64–65.

⁹ *Science and Hebrew Tradition* (N.Y., 1897), 46–47.

the sum of phenomena presented to our experience; the totality of events past, present, and to come. Every event must be taken to be a part of nature until proof to the contrary is supplied. And such proof is, from the nature of the case, impossible."

In this passage, the words "sum of phenomena" are those Mill used—though Mill had said "sum of all phenomena."¹⁰ The whole sentence in which the phrase occurs, however, reflects Mill.

In "Science and Culture," Huxley seems to have suffered a momentary lapse into the earlier point of view expressed in "A Liberal Education and Where to Find It," discussed above. For in "Science and Culture," written in 1880, he says: "They [both capitalist and operative] must learn that social phenomena are as much the expression of natural laws as any others . . ."¹¹

In "The Struggle for Existence in Human Society," however, written in 1888, Huxley clearly maintains the scientific attitude, when he speaks of "the vast and varied procession of events, which we call Nature." In demonstrating his thesis that Nature is "neither moral nor immoral, but non-moral," Huxley uses the deer and the wolf as examples. The deer has skill which enables it to escape from the wolf; the wolf has skill which enables it to track and finally bring down the deer. Viewed under the dry light of science, says Huxley, they are alike admirable. But the deer suffers; the wolf inflicts suffering. This engages *our* moral sympathies. *We* call the deer good, the wolf bad; men who are like the deer we call innocent and good; men who are like the wolf, malignant and bad. But if we transfer these judgments to nature outside the world of man at all, we must do so impartially. Thus nature is *non-moral*.¹²

Another significant passage in the same essay reads as follows: "In the strict sense of the word 'nature,' it denotes the sum of the phenomenal world, of that which has been, and is, and will be; and society, like art, is therefore a part of nature. But it is convenient to distinguish those parts of nature in which man plays the part of immediate cause, as something apart; and, therefore, society, like art, is usefully to be considered as distinct from nature. It is the more desirable, and even necessary, to make this distinction, since society differs from nature in having a definite moral object; whence it comes about that the course shaped by the ethical . . . necessarily runs counter to that which the non-ethical man—the primitive savage . . . —tends to adopt. The latter fights out the struggle for existence to the bitter end, like any other animal; the former devotes his best energies to the object of setting limits to the struggle."¹³

This material is clearly reminiscent of Mill, whose essay contains at least two passages which treat the opposition of Nature to Art (cf. Mill's essay, "Nature," 7-8, 20-21). In the latter, Mill says: "Everybody professes to approve and admire many great triumphs of Art over Nature . . ." And two years later, in a letter of October 27, 1890, to Mr. W. Platt Ball, Huxley states his position even more pointedly and explicitly. "Of moral

¹⁰ *Op. cit.*, 5. The *Hume* was published in 1896. ¹¹ *Science and Education*, 158.

¹² *Evolution and Ethics*, 195, 197. Italics mine.

¹³ *Ibid.*, 202-203.

purpose I see no trace in Nature," he says. "That is an article of exclusively human manufacture—and very much to our credit."¹⁴

In the "Prologue" to *Science and Christian Tradition*, written in 1892, there is no reflection of Mill. The following passage is worth including, however, because in it Huxley describes the conception of nature and the "supernatural" held by undeveloped minds, and in doing so he avoids all romantic pitfalls. In a situation which might easily have tempted him to personify nature, he speaks plainly and factually:

"Experience speedily taught them [i.e., "thinking men"] that the shifting scenes of the world's stage have a permanent background; that there is order amidst the seeming confusion, and that many events take place according to unchanging rules. To this region of familiar steadiness and customary regularity they gave the name Nature. But, at the same time, their infantile and untutored reason, little more, as yet, than the playfellow of the imagination, led them to believe that this tangible, commonplace, orderly world of Nature was surrounded and interpenetrated by another intangible and mysterious world, no more bound by fixed rules than, as they fancied, were the thoughts and passions which coursed through their minds and seemed to exercise an intermittent and capricious rule over their bodies. They attributed to the entities, with which they peopled this dim and dreadful region, an unlimited amount of that power of modifying the course of events of which they themselves possessed a small share, and thus came to regard them as not merely beyond, but above, Nature.

"Hence arose the conception of a 'Supernature' antithetic to 'Nature'—the primitive dualism of a natural world 'fixed in fate' and a supernatural, left to the free play of volition . . ." ¹⁵

In a footnote on page 39 of this "Prologue" Huxley comments significantly on his use of the words "Supernature" and "Supernatural." "I employ the words 'Supernature' and 'Supernatural,'" he says, "in their popular senses. For myself, I am bound to say that the term 'Nature' covers the totality of that which is. The world of psychical phenomena appears to me to be as much part of 'Nature' as the world of physical phenomena: and I am unable to perceive any justification for cutting the Universe into two halves, one natural and one supernatural."

In "Evolution and Ethics," the Romanes Lecture of 1893, Huxley was mainly concerned with the development of ethical standards. However, he does refer significantly to Nature, even though his treatment is brief and incidental. "The thief and the murderer," he says, "follow nature just as much as the philanthropist." This, I think, is a strong echo of Mill's treatment of his first definition of Nature: everything that is.

Throughout this essay Huxley seems to be most careful of his words in his references to Nature. He speaks of "cosmic nature" and "the cosmic process." Nowhere is there a suggestion of consciousness or purpose in Nature. Social and moral progress results from man's checking of the cosmic process. But this process, as he uses the phrase, is not a process carried on by a conscious cosmos. All that Huxley says in this essay about the

¹⁴ *Life and Letters*, II, 268. ¹⁵ *Science and Christian Tradition* (N.Y., 1900), 3-4.

development and practice of ethics against the cosmic process reflects Mill's discussion of his second definition of Nature, that is, things as they would be without human intervention.¹⁶

Huxley discusses Nature in greater detail in "Evolution and Ethics, Prolegomena,"¹⁷ which he wrote in 1894, the year before his death. It appears in the published works as a sort of introduction to, or first half of, the Romanes Lecture of the previous year. Throughout this essay Huxley maintains the scientific attitude toward Nature. For example: "That the state of nature, at any time, is a temporary phase of a process of incessant change, which has been going on for innumerable ages, appears to me to be a proposition as well established as any in modern history."¹⁸ It is in this essay that Huxley uses his famous illustration of the garden in discussing the intervention of man in the state of nature. The whole treatment calls to mind Mill's second definition of Nature: "things as they would be, apart from human intervention." A "state of Art," Huxley says, is created by man and sustained by him. The state of nature is hostile to the state of art. "Even in the state of nature itself, what is the struggle for existence but the antagonism of the results of the cosmic process in the region of life, one to another?"¹⁹ And finally, "That which lies before the human race is a constant struggle to maintain and improve, in opposition to the State of Nature, the State of Art or an organized polity; in which, and by which, man may develop a worthy civilization, capable of maintaining and constantly improving itself, until the evolution of our globe shall have entered so far upon its downward course that the cosmic process resumes its sway; and, once more, the State of Nature prevails over the surface of our planet."²⁰

The conclusion may be brief.

I have found no statement by Huxley that he had read Mill's essay "Nature." And certainly he might have arrived at his later conception, and probably would have, if Mill had never written "Nature." The changing intellectual climate, the general shift of informed opinion toward scientific views, especially after the publication of Darwin's *Origin* in 1859, would have been enough in itself to impel Huxley to speak precisely rather than colorfully, even in popular lectures. Also, Huxley's whole treatment of Nature, early and late, might have sprung from some of the Greek and Latin writers who had dealt with the subject.²¹ In the absence of conclusive evidence, therefore, Mill's influence must remain conjectural. There are two facts, however, which I think form reasonable props to my surmise that Huxley revised his conception of Nature under the influence of Mill's essay. These are (1) that Huxley did not manifest the scientific attitude to Nature until 1876, two years after Mill's essay was published; and (2) that Huxley's later discussions reflect Mill clearly, sometimes to the extent of employing the same words, whereas the ones prior to 1874 portray Nature as an animate being.

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¹⁶ *Evolution and Ethics*, 80-81f.

¹⁷ *Evolution and Ethics*, 1-45. ¹⁸ *Ibid.*, 5. ¹⁹ *Ibid.*, 13. ²⁰ *Ibid.*, 44-5.

²¹ Arthur O. Lovejoy and George Boas, *Primitivism and Related Ideas in Antiquity* (Baltimore, 1935). See especially meanings of "Nature," 14-17 inclusive, 448-449.