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Darwin, Coleridge, and the Theory of Unconscious Creation

TWO GREAT geniuses of the nineteenth century, two men from widely distinct social worlds, yet of strangely similar cast of intelligence, have, by the vicissitudes of fortune, become posthumously involved in a stormy controversy among twentieth-century biologists. One was the poet, Samuel Taylor Coleridge, opium addict, creator of *The Rime of the Ancient Mariner* and the weird moonlit fragment *Christabel*. "For over a century," writes the critic Max Schulz, "the tradition has been that they [Coleridge's poems] defy analysis because the best of them are enchanted records of unearthly realms peopled by Mongol warriors, old navigators, albatrosses, and Lamia witchwomen. . . ."[1] Students of the subject have been until recently loth to perceive the conscious craftsman behind the dreamer. The tendency has been to accept "the sacred river," the sunless sea of dream as the primary source of Coleridge's inspiration. Out of these misty depths, according to entranced critics, were drawn in poetic ecstasy fragments of travelers' tales transmuted forever in the subconscious mind of the poet. The public appeal of this romantic interpretation of great poetry is tremendous. It flatters our imagination and our conception of the mysterious life of the literary artist.

The other man, Charles Darwin, the equally noted discoverer of natural selection, has at first glance a different and scientific appearance. Yet his mind, too, was stuffed with the multitudinous lore of both incredibly wide reading and personal oceanic experience. He openly proclaimed himself a millionaire of odd and curious little facts. There floated in his vast memory the tortoises and lizards of islands under tropic suns. He had dug for fossil bones in Patagonia, and climbed Andean peaks in solitude. Navigators and

albatrosses were part also of his experience. He, like Coleridge, had read insatiably.

But in his case the public imagination was, and is still, caught by the symbol of a great voyage, the voyage of the *Beagle.* After Darwin's book, *The Origin of Species,* was published in 1859 he wrote to the Reverend Baden Powell, "If I have taken anything from you, I assure you it has been unconsciously."[2] This was in response to a letter in which Powell had reproved Darwin for not referring to one of his works. Thus the legend of the unconscious, the role of the "sacred river," was destined to leave the realm of poetry and enter the field of science. The floating fragments from Darwin's sacred river need no longer be assigned place, name, or priority. They had become the property of genius, they had entered the dark domain of demonic creation. As it is in literature, where historic footnotes are not demanded of the poet, so now it was about to become in science. Charles Darwin was to be elevated beyond giving an account of even partial priority as that rule applied to other men.

Darwin's own excuse of the "unconscious" has been increasingly used in recent years by defenders of the great biologist in considering the problem of Darwin's meager attention to his predecessors. If Darwin "unconsciously" borrowed material without acknowledgment, some scholars imply that no blame can be attributed to him. Rather, they frown upon those historians of science who persist in probing beneath the insights of genius in order to seek the sources of their inspiration. Yet we must still ask, was the one man who should know where he got the idea of his famous theory unconscious of where he got it? Or did he consciously draw a veil over one predecessor in particular, rationalizing, perhaps, as he is known to have done on one occasion, when he implied that the man who successfully convinces the public of a new idea deserves all the credit which may accrue to him.[3]

The theory of the "unconscious" has been emphasized by Darwinian defenders particularly following the publication in 1959, in the *Proceedings of the American Philosophical Society,* of an article which explored the possible role played by Edward Blyth, a young British naturalist, in the formulation of the theory of natural selection.[4]

We now know that Blyth stated the basic tenets of the theory of natural selection in two articles in *The Magazine of Natural History* in the years 1835 and 1837.[5] We know also that Darwin footnoted Blyth copiously in his books on many subjects, but never on natural selection, although it is clear from the nature of his reading and in-

terior evidence from his notebooks and early essays, as well as one letter, that he was familiar with the magazine containing these important articles. The recent publication of *Darwin's Notebooks on Transmutation of Species,*[6] in 1960, showed clearly that Darwin was aware of Blyth's writings on natural selection. In the *Second Notebook,*[7] never intended for publication, reference is made to the article of 1837 in which Blyth writes, after having earlier in 1835 described the conservative effects of natural selection: "May not, then, a large proportion of what are considered species have descended from a common parentage?"[8]

Several who are unwilling to credit Blyth with influencing Darwin refuse to quote this line of 1837—the very year that Darwin conceived of the role of natural selection in evolution. Sir Gavin de Beer, who edited the Notebooks, footnotes Blyth's article as mentioned by Darwin in the *Second Notebook,* but fails to point out its obvious import. In a brief discussion of Blyth in the Introduction to the *First Notebook* he at first remarks that Darwin probably owed nothing to Blyth so far as the construction of his theory is concerned.[9] He confesses, however, in the same paragraph, that "there is nothing improbable in his [Darwin's] having copied some from Blyth." He then cautiously concedes that "Darwin (and others) may have been wrong in thinking that he owed him [Blyth] or them nothing on this score." Four years later, in 1964, in his biography of Darwin, de Beer has again retreated from a direct confrontation of the full nature of Blyth's speculations when he says that although Blyth "had been playing with the very tools that Darwin so successfully used, it is difficult to see that Darwin was indebted to him, for his conclusions were the exact negation of what Darwin was trying to prove."[10] Concerning this statement it is of interest to note that George Wald, writing on "Innovation in Biology," in the *Scientific American,* remarks that "all great ideas come in pairs, the one the negation of the other, and both containing elements of truth."[11] Edward Blyth, as we have seen, in a moment of insight glimpsed momentarily both faces of Natural Selection. It was enough to give an astute mind like Darwin's the clue that he was seeking. Today it is well recognized that this principle is composed of both creative and conservative aspects. In nature, natural selection maintains the species as well as promoting slow and tested change at the same time.

Theodosius Dobzhansky, who uses the "unconscious" theory to explain Darwin's failure to acknowledge his predecessors, accepts the fact that "the fundamental premises of the theory of natural selection

are contained in Blyth's essays,"[12] but maintains that Darwin might have been mistaken about the sources of some of his ideas, and his thinking process might not have been wholly free of subconscious components.[13] Dobzhansky's theory of the "subconscious components" as the probable cause of Darwin's omission of credit to Edward Blyth should be considered carefully because it gives us an opportunity to explore one interpretation of the creative processes of genius.[14]

"Is the origin of every idea which crosses our minds always clear to us?"[15] Dobzhansky asks. Nobody, he contends, has a perfect memory and is always aware of his thinking processes.

> Probably everyone is familiar with the feeling that an idea which arises in one's mind, or a phrase which emerges from one's pen, have been met with somewhere, but one cannot recall just where or when. This feeling is sometimes justified but perhaps more often illusory. Might not even Darwin have been mistaken about the sources of some of his ideas?[16]

It is the mystery of the creative process in the mind of genius which the discovery of Edward Blyth forces us to face, argues Dobzhansky. In Darwin's defense, Dobzhansky cites John Livingston Lowes' well-known study of Coleridge, *The Road to Xanadu*. Dobzhansky feels, as did Lowes, that "it is not illegitimate to compare the creative processes of a poet, Coleridge, with those of a scientist, Darwin."[17] Since the creative work of a poet and of a scientist are not fundamentally different,[18] Dobzhansky maintains that Darwin had little more awareness of the soil in which his theories grew than did Coleridge of the sources of his poetry. Unfortunately for Dobzhansky's reliance upon Lowes' interpretation of Coleridge, however, later critics no longer see the great romantic poet as purely an inspired somnambulist. In the first volume of Kathleen Coburn's edition of Coleridge's notebooks, says Schulz, "the notations of ideas and images for future poems recorded in them reveal a mind knowing where it is going and moving purposefully toward that goal."[19]

Could Darwin have been unaware of the fact that he had read and utilized the articles written by Edward Blyth on the subject which he was later to claim completely as his own discovery? Lowes has written:

> The "deep well of unconscious cerebration" underlies your consciousness and mine, but in the case of genius its waters are possessed of a peculiar potency. Images and impressions converge and blend even in the sleepy drench of our forgetful pools. But the inscrutable energy of genius which we call creative owes its secret virtue at least in part to the enhanced and

almost incredible facility with which in the wonder-working depths of the unconscious the fragments which sink incessantly below the surface fuse and assimilate and coalesce. The depths are peopled to start out with (and this is fundamental) by conscious intellectual activity, keyed, it may be, as in Coleridge's intense and exigent reading, to the highest pitch. Moreover (and this crucially important consideration will occupy us in due time), it is again conscious energy, now of another and loftier type, which later drags the deeps for their submerged treasure, and moulds the bewildering chaos into unity. But interposed between consciousness and consciousness is the well. And therein resides the peculiar significance of such a phantasmagoria as lies before us in the [Coleridge's] Note Book, the seemingly meaningless jumble of which we have tried to grasp.[20]

In striking contrast to this view, however, Werner W. Beyer, another Coleridge authority, emphasizes the role of the conscious and deliberate in the creative process. Writing in *The Enchanted Forest,* which the author says begins where *The Road to Xanadu* ended, Beyer states that Lowes' stress upon the importance of the unconscious "has given such wide currency to the concept of unconscious metamorphosis that its conscious counterpart has threatened to be ignored."[21] Beyer presents interesting evidence of Coleridge's use in his poetry of a crucial source until now undetected. This deals with the part C. M. Wieland's tale *Oberon,* translated by Coleridge around November 20, 1797, seems to have played in the genesis of *The Wanderings of Cain, The Rime of the Ancient Mariner, Christabel,* and *Kubla Khan.* Beyer has no doubt that Coleridge was aware of Wieland's poetry as a source of his own, since Coleridge translated the tale, and wrote this fact in a letter to Joseph Cottle.[22] Lowes, himself, in a letter of November 24, 1939, wrote to Beyer concerning this newly produced evidence:

Why, in view of the fact that on p. 243 of *The Road to Xanadu* I referred to S.T.C.'s flat statement that he was translating *Oberon,* I didn't go farther, I can't, to save my soul, imagine![23]

It was *conscious* judgment, Beyer insists, that led Coleridge to his discoveries of the potentialities of *Oberon.* More than Lowes suspected,

. . . conscious and unconscious appear to have collaborated and interpenetrated in the genesis of the fabulous ballad [*Rime*]. *As others have thought, the deliberate, purposive, and volitional appear to have played a far greater role in the complex process of discovering and envisioning, assimulating and transforming the multifarious stuff for its fabric and form.* . . . Oberon *makes it clear, I think, that the genesis of the* Ancient Mariner, *which it generously abetted, was not so largely a product of the subconscious as Lowes assumed.*[24] (Italics mine, L. E.)

Beyer also cites another Coleridge authority, R. C. Bald, who,

> . . . after a study of the later notebooks [of Coleridge], similarly stressed what Lowes had seemed to minimize; the *conscious* element in the creative process, the deliberateness of Coleridge's reading, for purposes of poetry, and the recency of some of it which therefore could not have been long submerged in the subconscious. . . .[25]

Since it has been noted that the creative processes of a poet (Coleridge) may be compared to the creative processes of a scientist (Darwin), it is impossible not to see the parallel between these two geniuses in their working processes. *Oberon,* Beyer remarks, appears to have provided a scenario that Coleridge found

> . . . adaptable, kindling, and of high "symbolic potential." . . . It seems to have provided many materials, too, but, more important, to have served as a flexible form or matrix to help organize the richly diverse ingredients drawn from innumerable other sources and experience previously unrelated. And the conscious guidance it evidently afforded appears to put a somewhat different complexion on the story of the genesis of the great ballad, and at the same time to shed new light on various obscure passages.[26]

Coleridge once made the remark that men are caterpillars, very few of whom succeed in successfully transmuting themselves into butterflies. To introduce a bit of modern knowledge, one might observe that the caterpillar possesses glands in its head which at the proper moment assist him to make that beautiful transformation. In the case of men, even brilliant men, some outside incident, some catalytic agent concealed in the environment, may be the initiator of the transformation we call "creativity" or "genius." The man must be receptive, his mind afloat perhaps with the random forms which contain an unevolved future. It is then that the hidden key to the locked secret must be found. Otherwise the potential inspiration may drift past unrecognized into oblivion.

As *Oberon* was such a stimulus, a scenario for Coleridge's great poems, Blyth's articles on natural selection were conceivably Darwin's scenario, containing as they did the full series of stepping stones over which, as I have elsewhere pointed out, Darwin passed on his way into the new world of organic novelty. Lowes remarked as much of Coleridge:

> [In 1797] . . . a vast concourse of images was hovering in the background of Coleridge's brain, waiting for the formative conception which should strike through their confusion, and marshal them into clarity and order.[27]

In October or November, says Beyer, "the young poet-in-waiting

discovered *Oberon,* and speedily began translating its teeming kaleidoscopic scenes—scenes which were *as if made for that service."*[28] (Beyer's italics.) Coleridge may be compared to the young scientist Darwin, home from his voyage, freshly impressed with new lands and unknown creatures. Darwin suspected the reality of life's transformations, but he remained without a satisfactory mechanism to show how organisms were actually adapted to fit diverse environments.

Darwin wrote in his *Autobiography,* "Nor did I ever intermit collecting facts bearing on the origin of species; and I could sometimes do this when I could do nothing else from illness."[29] Then, said Darwin, he read by chance the work of Thomas Malthus in October 1838, and claimed to see in Malthus' work the key to natural selection in the animal world. It is, however, genuinely possible to conceive that it was the work of Blyth which Darwin, the scientist-in-waiting, read. Here was material which was, in the words of Beyer spoken in reference to Coleridge, "as if made for that service."

In the case of Coleridge, there exists a written admission that he was translating Wieland's *Oberon.* In the case of Charles Darwin, although he at no time mentioned Edward Blyth's ideas on natural selection,[30] interior evidence such as I produced in 1959 and which also appears in Darwin's *Second Notebook on Transmutation of Species* shows that he was fully aware of the papers which contained these ideas.

Fortunately Dr. Gerald Henderson of Brooklyn College has kindly allowed me to utilize additional evidence from his own recent unpublished investigations at the Cambridge University Library. Darwin's personal volume of *The Magazine of Natural History* of 1837 reveals annotations on Blyth's paper in Darwin's own hand. Moreover, a set of Darwin's page reminders which include Blyth's paper has been pinned to the inside of the back page. I will not encroach further upon Dr. Henderson's researches except to reiterate that Darwin knew and studied the 1837 paper he was never to mention in print. The volume at Cambridge is a presentation copy given to Darwin by Edward Charlesworth, its then editor.

Coleridge himself said: "Though [my mind] perceives the *difference* of things, yet [it] is eternally pursuing the likenesses, or, rather, that which is common [between them]."[31] The following lines were written concerning Coleridge. They could also have been written about Charles Darwin:

We have to do, in a word, with one of the most extraordinary memories of

which there is record, stored with the spoils of an omnivorous reading, and endowed into the bargain with an almost uncanny power of association.[32]

J. B. Beer adds:

. . . from sources so widely separated in space and time, Coleridge had often elicited an image or a phrase which was infinitely richer than the sum of its source.[33]

Coleridge, far from defending the bathos of unconscious discovery, remarked with surprising practicality even in the midst of a commentary on sleep: "O then what visions have I had, what dreams —the Bark, the Sea . . . Stuff of Sleep & Dreams, *& yet my Reason at the Rudder.*"[34] (Italics mine, L. E.) He lists sensations, items of interest in his notebooks, just as does Darwin, but this is the stuff of poetry, not poetry itself, just as Darwin's associations of ideas and lists of sources are the stuff of science but not the completed act of reason.

As Professor Schulz has indicated, Coleridge was not engaged in séance writing. Neither, we might add, was Darwin. In his *Biographia Literaria* Coleridge remarks of poetic endeavor that much may be gleaned from travels, books, natural history, and that all may be acquired as part of the writer's trade but that these cannot substitute for the ear of genius. He does not forget Lamb's dictum that "the true poet dreams being awake."[35] The artist dominates his subject.

Similarly it was from no "sunless sea" of memoryless dream that Darwin drew his own illumination. It was more like being led across the stepping stones of a brook into an enchanted land from which the first intruder, Edward Blyth, had leaped safely back to "reality." Darwin, by contrast, a genius like Coleridge with "Reason at the Rudder," grasped immediately that he had come upon the long sought magic which would bring order amongst all his idle facts and relate them in a rational pattern. He saw a vision for which he was prepared, but which he might never have glimpsed save for his perusal of Edward Blyth. The weary world traveler had had to come all the way back to London to find his secret in an unread magazine.

The widespread popularity of the "unconscious" theory concerning Charles Darwin can readily be explained by the fact that a cult of hero worship has developed about the great biologist, such as frequently happens to a prominent innovator in any field.[36] Darlington, the British geneticist, has commented ironically: "Among scientists there is a natural feeling that one of the greatest of our

figures should not be dissected, at least by one of us."[37] In the face of evidence that Darwin made unacknowledged use of material from Blyth, the theory of the unconscious is the easiest, most polite way of evading the exploration of a delicate subject. Numerous naturalists who would never treat contemporaries so gently under similar circumstances are eager to make a "sleep walker" of a scientist whose letters and notes are models of persistent conscious inquiry upon a great range of subject matter.

George Gaylord Simpson, referring to Darwin's statement in his autobiography that he "never happened to come across a single one [naturalist] who seemed to doubt about the permanence of species,"[38] and Darwin's belief that he owed no debt to his predecessors, said: "These are extraordinary statements. They cannot be literally true, yet Darwin cannot be consciously lying, and he may therefore be judged unconsciously misleading, naive, forgetful, or all three."[39]

Nora Barlow has also used the "unconscious" theory to explain her grandfather's denial that the subject of evolution was in the air. Doubtless Darwin's isolation at Down kept him from being aware of opinions from workers in other fields than his own, said Lady Barlow, "so that he unconsciously overlooked indications that belief in the permanence of species was waning."[40] Nevertheless some of the very journals he consulted contained references to the evolutionary hypothesis.

As opposed to the theory of the unconscious, it strikes one that Darwin was, in general, a keenly alert, conscious thinker, and he was so characterized by his associate, Thomas Huxley.[41] It is strange that in Darwin's *The Descent of Man* and *Variation of Animals and Plants Under Domestication*[42] all factual material drawn from Blyth was carefully listed but the two papers of Blyth concerning natural selection should be quietly ignored. It is difficult to accept this as mere coincidence. In *Variation* a footnote refers to the same volume of *The Magazine of Natural History* of 1835 in which Blyth's first paper on natural selection appeared.[43] Also a footnote in *Variation* states: "Mr. Blyth has freely communicated to me his stores of knowledge on this and all other related subjects,"[44] a somewhat cryptic and unenlightening statement. There is no possibility of doubt that Darwin used and studied *The Magazine of Natural History* in which Blyth's papers appeared.

Another odd circumstance has recently been brought to light by Gavin de Beer, even though he has refrained from any comment as to its potential significance. I refer to the recent disclosure that a

number of pages are missing from Darwin's *First Notebook on Transmutation of Species.* The great importance of the *First Notebook* in tracing Darwin's early thought has been stressed by de Beer.[45] Yet fifty pages are missing from this *Notebook,* in which Darwin wrote on the first page: "All useful pages cut out. Dec. 7/1856/. (and again looked through April 21, 1873)."[46] Nothing was said about destroying the notes. As his son, Francis Darwin, pointed out in reminiscences of his father, Charles Darwin "felt the value of his notes, and had a horror of their destruction by fire. I remember, when some alarm of fire had happened, his begging me to be especially careful, adding very earnestly, that the rest of his life would be miserable if his notes and books were to be destroyed."[47]

De Beer, who reported in 1960 on these missing pages, said they had been searched for unsuccessfully in the Cambridge University Library, at Down House and the Royal College of Surgeons, and in the British Museum of Natural History. "The nature of their contents can only be surmised after a close study of the two hundred and thirty pages that remain," de Beer remarked, "and an estimate can be made of what is missing from the information and the argument."[48] Although there are some pages missing from the other *Notebooks,* it is those from the *First Notebook* that would seem to have the most bearing upon the origin of Darwin's theory, since it was begun in July 1837, before the date when he said he received his inspiration from Malthus. To reiterate my own words, I believe it significant that "Darwin opened his first notebook on the 'species question' in 1837. In January of that year Edward Blyth ventured the beginning of a second paper in which there is comment upon the principle of natural selection."[49] This comment, as we have seen, goes considerably beyond Blyth's first statement of 1835. It introduces, if briefly, the possibility of organic change. The name and work of Edward Blyth are not noted in the existing portion of the *First Notebook,* although they do appear in the *Second.*

"The idea of natural selection, so far as can be seen from the extant portions of the *Notebooks,* seems to have occurred to Darwin as a combination of the effects on him of the facts of variation, adaptation, and extinction,"[50] observed de Beer. Actually the missing fifty pages could have contained a great deal of information extending to Blyth's own views on these subjects. De Beer has avoided the suggestion that this fragmentary document may have contained more detailed references to Blyth's works. Since these pages compose the first part of the diary, their disappearance, taken with other

evidence, cannot fail to hint of a genuinely "missing link" in the story of Natural Selection.

Much has been made by some of Darwin's defenders of his poor memory, though others have maintained it was prodigious. Huxley, who certainly knew him well, contended that Darwin had "a great memory."[51] Darwin himself remarked of his memory, that it "suffices to make me cautious by vaguely telling me that I have observed or read something opposed to the conclusion which I am drawing, or on the other hand in favour of it; *and after a time I can generally recollect where to search for my authority.*"[52] (Italics mine, L. E.)

It is also true, however, that Darwin did not have to depend upon memory, as he was a remarkably methodical man in his work. In discussing his work habits he mentioned the fact that since in several of his books he had used extensively facts observed by others, he kept

> from thirty to forty large portfolios, in cabinets with labelled shelves, into which I can at once put a detached reference or memorandum. I have bought many books, and at their ends I make an index of all the facts that concern my work; or, if the book is not my own, write out a separate abstract, and of such abstracts I have a large drawer full. Before beginning on any subject I look to all the short indexes and make a general and classified index, and by taking the one or more proper portfolios I have all the information collected during my life ready for use.[53]

One of Darwin's own statements, to which I have previously referred, strikes one as remarkably illuminating. In regard to an incidental matter of priority upon another biological matter which had occupied his attention briefly, he wrote in his autobiography: "It is clear that I failed to impress my readers; and he who succeeds in doing so deserves, in my opinion, all the credit."[54]

This statement is curiously revelatory to the perceptive student of character. There is involved in it a strange indifference to historical priority by a man in actuality highly sensitive on this score so far as his own great generalization was concerned. Was Charles Darwin engaged in psychologically justifying a philosophy which permitted him to dismiss forerunners from whom he had drawn inspiration—men like his friend, "poor Blyth,"[55] who "failed to impress" and therefore deserved no recognition from the world? One is forced to reflect upon this possibility, which has even been seized upon and brought forward by later writers as a justification of Darwin's attitude toward his predecessors.

There will always be an ineluctable mystery concerning the ori-

gin of the theory of Natural Selection, just as there will always be a shadowy web surrounding the real Charles Darwin, a web unseen but as real as the black cape in which we see him enveloped in a photograph taken of him on the verandah at Down at the age of seventy-two. One of Darwin's most ardent supporters, George Gaylord Simpson, states with perceptive acuteness:

> The mystery persists. The man is not really explained, his inner adventures are not fully revealed in his own autobiography, in the family biography by Francis Darwin, or in the many other biographical sketches and books. There will always be something hidden, as there is in every life. . . .[56]

It seems to be an inescapable conclusion that the mystery lies concealed in the remarkable similarity between Coleridge, the "library cormorant," as he chose to describe himself, and Darwin, a similar cormorant observer of nature and of nature recorded in books. Each man had his catalyzer and both were reticent enough that it has taken over a century to find the catalyzer.

References

1. Max Schulz, *The Poetic Voices of Coleridge* (Detroit, Mich., 1963), p. 5.
2. Gavin de Beer (ed.), "Some Unpublished Letters of Charles Darwin," *Notes and Records of the Royal Society of London,* Vol. 14, No. 1 (June 1959), p. 53.
3. Nora Barlow (ed.), *The Autobiography of Charles Darwin, 1809-1882* (London, 1958), p. 125.
4. Loren Eiseley, "Charles Darwin, Edward Blyth, and the Theory of Natural Selection," *Proceedings of the American Philosophical Society,* Vol. 103, No. 1 (February 1959), pp. 94-158.
5. Edward Blyth, "An Attempt to classify the 'Varieties' of Animals, with Observations on the marked Seasonal and other Changes which naturally take place in various British Species, and which do not constitute Varieties," *The Magazine of Natural History,* Vol. 8 (1835), pp. 40-53: Art. IV. "On the Psychological Distinctions between Man and all other Animals; and the consequent Diversity of Human Influence over the inferior Ranks of Creation, from any mutual and reciprocal Influence exercised among the Latter," *ibid.,* Vol. 1 (n.s.) (1837), pp. 1-9: Art. I; pp. 77-85: Art. IV; pp. 131-141: Art. VI.
6. De Beer (ed.), "Darwin's Notebooks on Transmutation of Species," *Bulletin of the British Museum (Natural History),* Historical Series, Vol. 2, Nos. 2-5 (1960).

7. *Ibid., Second Notebook,* Part II, Vol. 2, No. 3, p. 106.

8. Blyth, "On Psychological Distinctions," etc. (1837), p. 147: Art. VI.*

9. De Beer, Introduction to *First Notebook,* Part I, Vol. 2, No. 2, p. 36.

10. De Beer, *Charles Darwin: Evolution by Natural Selection* (New York, 1964), p. 102.

11. George Wald, "Innovation in Biology," *Scientific American,* Vol. 199, No. 3 (September 1958), p. 100.

12. Theodosius Dobzhansky, "Blyth, Darwin, and Natural Selection," *The American Naturalist,* Vol. 93, No. 870 (May-June 1959), p. 204.

13. *Ibid.,* p. 205.

14. When Dr. Dobzhansky proposed his theory in *The American Naturalist* he very graciously asked me if I would care to make a response. At the time, travel and administrative duties prevented me from accepting Dr. Dobzhansky's invitation. The present article exploring this subject was really stimulated by his generosity, and I am very glad to acknowledge this fact.

15. Dobzhansky, p. 205.

16. *Ibid.*

17. *Ibid.,* p. 206.

18. There is a failure here, however, to distinguish between creativity in the arts and sciences and its traditional modes of expression. The poet is not called upon to footnote or to give the history of his ideas. The scientist by tradition honors and cites the significance of his precursors.

19. Schulz, p. 7.

20. John Livingston Lowes, *The Road to Xanadu* (Boston, 1927), pp. 59-60.

21. Werner W. Beyer, *The Enchanted Forest* (New York, 1963), p. 113.

22. *Ibid.,* p. 49.

23. *Ibid.,* p. 47.

24. *Ibid.,* p. 113.

25. *Ibid.,* p. 66, citing R. C. Bald, "Coleridge and *The Ancient Mariner," Nineteenth-century Studies* (Ithaca, N. Y., 1940).

26. *Ibid.,* p. 75.

27. Lowes, p. 228.

28. Beyer, p. 186.

* All references to articles by Edward Blyth in this paper will refer to page numbers as reprinted in *Proceedings of The American Philosophical Society,* Vol. 103, No. 1 (February 1959).

29. Barlow, *Autobiography,* p. 99.

30. He was able, however, to refer to everything else about Blyth's work in detail.

31. S. T. Coleridge, *Anima Poetae,* ed. by E. H. Coleridge (London, 1895), pp. 87-88.

32. Lowes, p. 43.

33. J. B. Beer, *Coleridge the Visionary* (New York: Collier Books, 1962), p. 185.

34. S. T. Coleridge, Notebook XVI, 6–13 December 1803.

35. Schulz, p. 104, citing Lamb.

36. A parallel is seen in the case of Coleridge. A suggestion of plagiarism made by De Quincey concerning his friend Coleridge brought several critical replies. De Quincey, says John Metcalf, was accused of "bad taste, not to say treachery." One Coleridge enthusiast even declared that "One might as well . . . accuse the bee of theft for gathering treasures from many flowers." Sara Coleridge, while admitting her father's plagiarism, pleaded that "if he took, he gave." (See John Metcalf, *De Quincey: A Portrait* [New York, 1963], p. 115.)

37. C. D. Darlington, *Darwin's Place in History* (Oxford, 1959), p. 57.

38. Barlow, *Autobiography,* p. 124.

39. George Gaylord Simpson, review of *The Autobiography of Charles Darwin, 1809-1882,* ed. by Nora Barlow, *Scientific American,* Vol. 199, No. 2 (August 1958), p. 119.

40. Barlow, *Autobiography,* p. 153.

41. Leonard Huxley (ed.), *Life and Letters of Thomas Henry Huxley* (2 vols.; New York, 1902), Vol. II, p. 42.

42. Material for *Variation* was drawn from Darwin's original "big book" of the *Origin.*

43. Charles Darwin, *Variation of Animals and Plants Under Domestication,* 1st authorized American edition (2 vols.; New York, 1868), Vol. I, pp. 335-336, n. 8.

44. *Ibid.,* Vol. I, p. 164, n. 1.

45. De Beer, Introduction to *First Notebook,* p. 26.

46. De Beer, *First Notebook,* p. 41.

47. Francis Darwin (ed.), *The Life and Letters of Charles Darwin* (2 vols.; New York, 1959), Vol. I, p. 129.

48. De Beer, Introduction, *First Notebook,* p. 26.

49. Eiseley, p. 99.

50. De Beer, Introduction to *Third Notebook,* Part III, Vol. II, No. 4, p. 126.

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54. Barlow, *Autobiography,* p. 125.

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