12-2001

# A Plea for Caution: A Response To Frederick Burkhardt

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Professor Burkhardt's detailed and exhaustive analysis of this curious letter has provided a classic case of the kind of problems one might face in textual editing. My own interest in this letter was first generated during my editing of the Hunterian lectures of Darwin's contemporary, Richard Owen. It also relates to my long-term interest in the importance of Darwin's work on invertebrate organisms and its relevance to the origins of his evolutionary theory. This work commenced during his early years in Edinburgh and persisted through the *Beagle* years and even beyond into his eight years of study of the barnacles. I have also been concerned to determine with more precision the degree to which he may have attended Richard Owen's Hunterian lectures in Comparative Anatomy, delivered at the Royal College of Surgeons in London, that commenced in May 1837 and ran in a yearly series until 1855. These lectures dealt both with topics related to comparative anatomy and also with functional issues, particularly those surrounding the generation of organisms, a subject that formed a prominent focus of display in the Hunterian galleries.

The existence of this letter, dated at least by watermark to 1840 or beyond, and the topic of Owen's 1840 lecture series on the generation of animals, including the generation of insects, suggests a plausible context for the letter, although the letter does not specifically mention the lecture series itself. The 1840 series consisted of a sequence of twenty-four lectures on animal generation and reproduction that commenced on Tuesday, April 21, 1840, and ran each Tuesday, Thursday, and Saturday until Saturday, June 13. On my initial assumption that this was a genuine Darwin letter, it suggested that Darwin might well have attended this series of lectures.

The reasons for excluding this letter from the collected *Correspondence of Charles Darwin* have rested on two lines of argument. The first has been the fact that it did not seem to be in Darwin's handwriting. This does not prove that it could not have been dictated by Darwin or recopied. For example, certain similarities of the hand to a set of pages in the so-called "Old and Useless Notes," dated from 1838 to 1840, and attributed in form, if not content, by Professor Burkhardt and Paul Barrett to Darwin's cousin Hensleigh Wedgewood, have made me reluctant to exclude the authenticity of the letter on handwriting alone. Second, I have been reluctant to accept a more theoretical argument based on the claim that was originally advanced to me by Sydney Smith that Darwin was not interested in the issue of insect generation at that time and therefore could not have been the author of this letter.

My initial conclusion was that the letter was a genuine letter, and the anomalies could be explained by assuming it was a recopy by some third party. I relied at this time on two lines of reasoning to support this conclusion. First, I have not considered sufficient the argument that Darwin was not interested in insect generation at this time, and that by "entomology" he was mainly interested in classificatory questions. Darwin can be shown by documentary evidence to have had a long-standing interest in functional as well as classificatory questions, directed mainly to marine invertebrates and plants. His long-standing interest in entomology that dated from his Cambridge years does appear, from available documentary evidence, to have been primarily classificatory. But there is no immediate reason to assume that functional issues concerning insect generation would not have been of interest to one known to be exploring these issues in other areas of biology. One of the characteristics of Darwin's creative thinking in this period is the way in which he was willing to draw connections and analogies between groups, transferring issues from one domain to the next.

For example, the first transmutation, or "B" Notebook, opened in July 1837, immediately shows Darwin's interest in determining the purpose of the generation of organisms, and these reflections form the opening line of questions in his exploration of the genesis of species. Similarly, Notebook D, opened around mid-July 1838 and

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ended in early October, closes with a long series of reflections on the issue of generation. In this discussion there is a strong analogy drawn in at least one passage between insect and human generation:

> There is an analogy between caterpillars with respect to moths, & monkey & men.— each man passess [*sic*] through its caterpillar state. The monkey represents this state.—

The fact that Darwin does not explicitly discuss matters surrounding insect generation in his extant correspondence and other materials from the 1840 period does not necessarily imply, I suggest, the absence of interest in these questions. Second, Richard Owen, with whom he was consulting both professionally and socially in this period, was commencing a major lecture series on the topic that very plausibly would have interested Darwin anew in these issues.

With respect to the specific letter under discussion, however, I now agree with Frederick Burkhardt's argument that the specific issues raised for discussion in this letter, and particularly the reference to the generation of *Raphidia*, and the puzzling reference to the "flippant paper written by a boy" composed by Waterhouse himself, suggests that Waterhouse is the most probable author of this letter.

Accounting for the curiosity of a letter written to Owen by Waterhouse, but signed by Darwin, remains puzzling, however, and I offer below at least the following alternative solution to this question that seems consistent with Frederick Burkhardt's evidence.

My suggestion is that the letter was likely written by Waterhouse to Owen in a somewhat humorous, but critical, vein in response to claims made by Owen in his spring 1840 Hunterian lectures. Furthermore, for the letter to have played such a role, it would have required that Owen knew that Darwin was also in the audience at the lectures. I will support this option and develop this point in detail.

The content of the 1840 Owen lectures can be determined from two sources. The first is through the summaries, supplied by an unacknowledged author, of the full series of the lectures. This set of summaries appeared in the *Lancet* between May 9, 1840, and March 20, 1841. The other source is two partial sets of manuscripts of the 1840 lectures in the Owen archives of the Natural History Museum in London, one a set of drafts in Owen's hand, and the other the neat recopies by William Clift prepared for final delivery. Neither manuscript collection covers the entire series as summarized in the *Lancet* account, and the surviving manuscripts do not extend to the specific lecture at issue.

As it relates most closely to the letter under question, it is the lectures surrounding the ninth lecture of May 9, 1840, dedicated to the "Reproductive Organs of Insects," that seem most relevant to understanding the context for the letter. In this lecture Owen addressed insect development in the insect orders Orthoptera, Hemiptera, and Lepidoptera. All of these are group names underscored in the mystery letter, and in the latter portion of the lecture, as reported in the printed summary, he also dealt with the generation in the Neuroptera (e.g., Ant-Lions) which he found "not unlike the arachnida [spiders]."

The letter seeks to engage Owen in a discussion over the correct account of the insect generation in the Neuropteran groups, opposing Owen, who "begin[s] at the bottom" to the claims of the author who is "beginning at the top." This seems to refer to Owen's general approach to the topic of generation in which he begins with the primordial "germ," and then shows how the rest of the process is a development from this germinal primordium. The letter may also be referring directly to Owen's argument that "The larval state [in the Neuroptera] is very interesting, from its being one in which important changes, preparatory to the perfect condition, are taking place, without the presence of any of the phenomena of life."

If we are to assume the letter is by Waterhouse, and that he was in the audience at the May 9 lecture, this would explain the occasion for a letter to Owen in which the author, more skilled in entomology, offered detailed criticisms of some of Owen's claims (Owen was primarily known as a vertebrate comparative anatomist), summarizing a detailed counter-argument based on empirical study. I accept this as the most likely explanation of the content of the letter.

But this also presents us with a new interpretive option. At the close of the *Lancet* summary, the *Lancet* reporter has inserted the following comment:

Mr. Owen observed, at the conclusion of this lecture, that to give but a brief summary of the history and peculiarities of the insect tribe, would require more lectures than the whole of which the present course was to consist. He, therefore, apologised to those scientific entomologists who might be present, for passing so discursively over the subject. . . .

The lecture theater at the College of Surgeons held a maximum of over four hundred people, and Owen's lectures were often full to capacity in this period of his career. The generation lectures also dealt with some of the most theoretical topics to be found in all the series.

Owen's intention to offer a comprehensive series on the issue of organic generation was to deal with a wide range of questions that certainly would have been of interest to Darwin, who had already devoted a good deal of space and effort to reflection on the question of the generation of organisms in his Notebooks. The comment from the lecture summary suggests that Owen was also nervous about the impression of superficiality he might give by treating the complex issues of insect generation in a single lecture in front of known experts in entomology who were apparently in the audience. If *both* Waterhouse and Darwin were present at the lecture, and Owen was aware of this, a letter written in good humor by Waterhouse to Owen following up on this lecture with some pointed criticisms, but then signed as if sent by Darwin, would be one way of gently prodding Owen, creating a period of puzzlement, and generating a context of issues about which Owen and Waterhouse, and possibly Darwin, could have discussed these matters informally.

As with several issues surrounding this puzzling letter, this can only be offered as a conjecture. I am pleased that in this publication, if not in the *Correspondence* itself, the scholarly community will now have the opportunity to read this letter and perhaps be spurred to resolve this matter more fully.

## Acknowledgments

I wish to thank Michael Ghiselin for several useful comments on this issue along with the many exchanges and clarifications in my several discussions with Frederick Burkhardt.

## Notes

1. P. R. Sloan, ed., *Richard Owen's Hunterian Lectures, May–June 1837* (Chicago: University of Chicago Press, 1992).

2. P. R. Sloan, "Darwin's Invertebrate Program, 1826–1836: Preconditions for Transformism," in *The Darwinian Heritage*, ed. D. Kohn (Princeton: Princeton University Press, 1985), pp. 71–120.

3. For a summary of Owen's lecture series, see Nicolaas Rupke, *Richard Owen: Victorian Naturalist* (New Haven: Yale University Press, 1994), 88–89.

4. The *Lancet* summary (see note 7 below) dates the first lecture as Thursday, April 23. However, the delivery manuscript of the first lecture is dated April 21, and a twenty-four lecture series ending on June 13 would require a Tuesday, April 21, commencement.

5. Cambridge Darwin Manuscripts, DAR 91: fols. 4–55. This manuscript has been transcribed by Paul Barrett in P. Barrett, P. Gautrey, S. Herbert, D. Kohn, and S. Smith, eds., *Charles Darwin's Notebooks, 1836–1844* (Cambridge: Cambridge University Press, 1987), 597–629. The key pages are fols. 39–41.

6. Charles Darwin, "Notebook D," transcribed by David Kohn, in Barrett et al., *Notebooks*, fol. 170, p. 387.

7. Lectures 1–4, *Lancet*, May 9,1840, pp. 225–26; Lecture 5, May 16, 1840, pp. 268–69; Lecture 6, May 23, 1840, pp. 302–04; Lecture 7, May 30, 1840, pp. 330–32; Lecture 8, June 13, 1840, 395–98; Lecture 9, June 27 1840, pp. 477–79; Lecture 10, July 11, 1840, pp. 556–58; Lecture 11, August 8, 1840, pp. 699–702; Lecture 12, August 29, 1840, pp. 812–14; Lecture 13, September 5 1840, pp. 844–49; Lecture 14, September 26, 1840, pp. 23–25; Lecture 15, October 31, 1840, pp. 182–84; Lecture 16, November 7, 1840, pp. 220–22; Lecture 17, December 5, 1840, pp. 361–64; Lecture 18, January 16, 1841, pp. 569–72; Lecture 19, January 30, 1841, pp. 668–72; Lecture 20, February 20, 1841, pp. 749–51; Lecture 22, March 13, 1841, pp. 844–47; Lectures 23–24 (final), March 20, 1841, pp. 873–79.

8. Owen MSS, BMNH, L.O.C. 38.

9. The brevity of the *Lancet* summaries gives only a snapshot of the full content of Owen's lectures. For example, Lecture 1 alone, in the Clift delivery recopy, occupies 37 folio pages measuring approximately 8 x 13 inches.

10. *Lancet*, June 27, 1840, p. 479.

11. See for example, Owen's 1837 lecture of May 11, 1837, Lecture 5, in my *Owen's Lectures*, pp. 215 ff.

12. Lecture 9, *Lancet*, June 27, 1840, p. 479.

13. Ibid.

14. See details in my *Owen's Lectures*, "Introduction," p. 55.