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Edinburgh Lamarckians: Robert Jameson and Robert E. Grant

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Declarations of support for evolution in the British scientific press before 1830 are notoriously rare. It is not surprising, then, that an anonymous pro-Lamarckian essay in the first volume of the *Edinburgh New Philosophical Journal* (1826) has come to occupy an important place in the recent literature on the diffusion of evolutionary ideas in Britain. Entitled "Observations on the Nature and Importance of Geology," the article provides a general account of the utility of a knowledge of the earth, with a substantial discussion supporting spontaneous generation and the transmutation of species.¹

This crucial article is the earliest favorable reaction to Lamarck in a British scientific periodical. Since it was first noted thirty years ago by Loren Eiseley in *Darwin's Century*, its authorship has been accorded to Robert Edmond Grant (1793—1874).² Grant was a leading figure in Edinburgh zoological circles, an early teacher of Charles Darwin, and an enthusiastic Lamarckian. In his autobiography, Darwin recalled how Grant had "burst forth in high admiration of Lamarck and his views on evolution" during one of their walks.³ Grant thus seems an

1. "Observations on the Nature and Importance of Geology," *Edinburgh New Phil. J.*, 1 (1826), 293—302.

2. Loren Eiseley, *Darwin's Century: Evolution and the Men Who Discovered It* (Garden City, N.Y.: Doubleday, 1958), pp. 146—147. For a general discussion of anonymity and attribution in England at this time, see Mary Ruth Hiller, "The Identification of Authors: The Great Victorian Enigma," in *Victorian Periodicals: A Guide to Research*, ed. J. Don Vann and Rosemary T. Van Arsdell (New York: Modern Language Association of America, 1978), pp. 123—148. An extreme instance of the dangers of careless attribution is investigated in P. N. Furbank and W. R. Owens, *The Canonisation of Daniel Defoe* (New Haven: Yale University Press, 1988).

3. Charles Darwin, *The Autobiography of Charles Darwin, 1809—1882*, ed. Nora Barlow (London: Collins, 1958), p. 49.

obvious candidate for the authorship, and a firm consensus to this effect has been built up over the past two decades through citations by Peter Bowler, Pietro Corsi, Adrian Desmond, Howard Gruber, Nicholaas Rupke, and others.⁴

There is compelling evidence, however, that “Observations on the Nature and Importance of Geology” is not by Grant, but by his mentor Robert Jameson (1774–1854), a leading mineralogist and geologist, Regius professor of natural history at the University of Edinburgh, and editor of the journal in which the article appeared. This brief note will present the reasons for attributing the article to Jameson. I will also place it within the context of Jameson’s other work, and I will indicate some of the consequences of this reattribution for our understanding of the reception of evolutionary ideas in the early nineteenth century.

EVIDENCE FOR ATTRIBUTION

Despite Grant’s well-known support for Lamarck, there is no substantive evidence for his authorship of the “Observations,” and a detailed case for attribution has never been made.⁵ While he was always interested in “fossil zoology,” it is not obvious why he should have decided in October 1826 to write an encomium on geology, when all his work of this time was on invertebrate zoology. The anonymous article is not among the

4. Peter J. Bowler, *Fossils and Progress: Paleontology and the Idea of Progressive Evolution in the Nineteenth Century* (New York: Science History Publications, 1976), p. 35; Pietro Corsi, “The Importance of French Transformist Ideas for the Second Volume of Lyell’s *Principles of Geology*,” *Brit. J. Hist. Sci.*, 11 (1978), 224; idem, *Science and Religion: Baden Powell and the Anglican Debate, 1800–1860* (Cambridge: Cambridge University Press, 1988), p. 235; Adrian Desmond, “Robert E. Grant: The Social Predicament of a Pre-Darwinian Transmutationist,” *J. Hist. Biol.*, 17 (1984), 201; idem, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: University of Chicago Press, 1989), p.69; Howard E. Gruber and Paul H. Barrett, *Darwin on Man: A Psychological Study of Scientific Creativity, Together with Darwin’s Early and Unpublished Notebooks* (New York: E. P. Dutton, 1974), p. 81; Nicholaas A. Rupke, *The Great Chain of History: William Buckland and the English School of Geology (1814–1849)* (Oxford: Clarendon Press, 1983), p. 173; David Kohn, ed., *The Darwinian Heritage* (Princeton: Princeton University Press, 1985), p. 1050.

5. Corsi’s seminal “Importance of French Transformist Ideas,” p. 242n11, claims that such evidence is provided in the article on Grant in the *DNB*, but the brief comment there refers to his essays on invertebrate zoology, and makes no specific reference to the “Observations.” The evidence for Grant’s authorship is summarized in Adrian Desmond, “Designing the Dinosaur: Richard Owen’s Response to Robert Edmond Grant,” *Isis*, 70 (1984), 231n35.

bound volumes of offprints by Grant in the libraries of University College London and the Geological Society of London, despite the fact that another unsigned paper known to be his (a review of Cuvier's work for the *Foreign Review* in 1830) is to be found in both collections.⁶ Nor is there any other contemporary evidence that the "Observations" might be his.

Eiseley's initial cautious attribution and the increasingly confident ones in recent years are based on Grant's status as the leading Lamarckian in Edinburgh during the mid-1820s. Passages in his papers on sponges clearly support the notion of transmutation and spontaneous generation, as does his inaugural address as professor of zoology at University College in October 1828.⁷ As one would expect, the rhetorical style of this lecture for a general audience is closer than his earlier specialist papers on invertebrates to that of the anonymous article — but the differences are very striking, both in literary style and in the use of important scientific terms. In short, on grounds of style, subject matter, and specific ideas other than transmutation and spontaneous generation, the case for Grant's authorship is weak.

Within the current picture of early nineteenth-century British science, it is hard to imagine a more improbable advocate of a dangerous and novel theory than Robert Jameson. Despite various attempts to rehabilitate his reputation, he is still best known as a defender of the neptunian geological theories of Abraham Gottlob Werner. He is often seen as a catastrophist, and the more recent literature has stressed his early support for linking the diluvial theory with the Mosaic deluge. He has never really lived down Darwin's characterization of him as "that old brown, dry stick Jameson," delivering interminably dull lectures in support of ideas that had long outlived their usefulness.⁸

Yet there are reasons for believing that our image of Jameson, derived largely from Darwin's autobiography, needs to be radically revised. With the exception of useful studies by Jessie

6. I owe this point to Adrian Desmond; thanks to Miss Sheila Meredith for checking the Geological Society materials.

7. Robert E. Grant, *An Essay on the Study of the Animal Kingdom. Being an Introductory Lecture Delivered in the University of London, on the 23d of October, 1828* (London: John Taylor, 1828). For the invertebrate work, see Desmond, "Robert E. Grant"; and Phillip R. Sloan, "Darwin's Invertebrate Program, 1826–1836: Preconditions for Transformism," in Kohn, *Darwinian Heritage*, pp. 71–120, esp. pp. 73–86.

8. C. Darwin to J. D. Hooker, 24 [May 1854], in *The Correspondence of Charles Darwin*, ed. Frederick Burkhardt and Sydney Smith (Cambridge: Cambridge University Press, 1989), V, 195.

Sweet, Joan Eyles, and Victor Eyles, there has been no serious historical study of Jameson since his death in 1854.⁹ This is not the place to provide the full-scale reassessment of Jameson that is urgently needed, but it is worth emphasizing that he is probably the most poorly understood figure in British natural history and geology in the first half of the nineteenth century.

The case for Jameson's authorship of the "Observations" can be argued on three levels: (1) the aims of the essay, considered in the context of Jameson's other works of the mid-1820s; (2) the content of the article as a whole; and (3) specific (although brief) textual parallels. In making the attribution, I have fulfilled the criteria used by the editors of the *Wellesley Index* and other standard works for identifying authors of unsigned contributions to nineteenth-century periodicals; they emphasize the legitimacy of relying on internal evidence, including close similarities in content, style, subject, and use of words. Especially when combined with matching phrases, such criteria are generally accepted as evidence for secure attribution.¹⁰

Aims

In October 1826 Jameson had every reason to be composing a text on the advantages of geological study. Throughout 1826 he has been editing and annotating the latest edition of Georges Cuvier's *Discours préliminaire*. This appeared in 1827 as the fifth edition of *Essay on the Theory of the Earth*, under which title the successive translations of this work had been issued since 1813.¹¹ The "Illustrations" Jameson provided to this edition were very extensive, and (as will be shown below), they provide a good base-line for a comparison of his views with those in the anonymous "Observations." In the present context, however, the new preface to the 1827 edition is of particular interest. Dated

9. The main source remains the inadequate memoir by Laurence Jameson, "Biographical Memoir of the Late Professor Jameson," *Edinburgh New Phil. J.*, 57 (1854), 1–49. More recent studies are listed in Joan M. Eyles, "Robert Jameson," *Dict. Sci. Biog.*, 7: 69–71.

10. Walter E. Houghton and Esther Rhoads Houghton, eds., *The Wellesley Index to Victorian Periodicals* (Toronto: University of Toronto Press, 1979), III, xiv–xv.

11. Georges Cuvier, *Essay on the Theory of the Earth. With Geological Illustrations by Professor Jameson*, 5th ed. (Edinburgh: William Blackwood, 1827). Jameson had begun work on the edition on October 1825; see Jameson to William Blackwood, October 10, 1825, National Library of Scotland, MS 4014, fol. 324.

November 25, 1826, only a few weeks after the appearance of the relevant issue of the *Edinburgh New Philosophical Journal*, it opens with a two-page defense of geology that in general tenor and purpose is identical to the much longer “Observations”. It advocates the study of geology as “deservedly one of the most popular and attractive of the physical sciences” and a “delightful branch of Natural History”; geology “requires for its successful prosecution an intimate acquaintance with Chemistry, Natural Philosophy and Astronomy, — with the details and views of Zoology, Botany, and Mineralogy, and . . . connects these different departments of knowledge in a most interesting and striking manner.”¹² These are precisely the same cross-disciplinary advantages of geological study that are put forward at greater length in the anonymous article. This preface does not mention Lamarck, but the overall purpose of the two pieces is the same.

Jameson, as a geologist and mineralogist, would naturally view the issue of species transformation within the framework of a defense of geology. In contrast, one would have expected Grant to tackle the question from the standpoint of zoology. All of Grant’s other papers in the *Edinburgh New Philosophical Journal* from this period are pioneering discussions of sponges and other marine creatures. When Grant did come to speak on less-specialized topics, particularly in his 1828 inaugural lecture at University College, he did so in terms that are substantially different from those offered in the anonymous “Observations.” As one would expect, this lecture defends the “study of the animal kingdom,” the subject of his chair and of all his own previous research. Grant, as Adrian Desmond has shown, always had a strong interest in fossils, but the inaugural lecture makes it clear that he sees their study (as did most men with medical training) from the standpoint of zoology.¹³ He has none of the interest in the study of strata or rock formations that is strongly evinced in the “Observations.”

Content

The close match of the aims of the “Observations” with those

12. Robert Jameson, “Preface to the Fifth Edition,” in Cuvier, *Essay*, pp. v–vi.

13. Grant, *Essay*, passim. See Adrian Desmond, “Robert E. Grant’s Later Views on Organic Development: The Swiney Lectures on ‘Palaeozoology’, 1853–1857,” *Arch. Nat. Hist.*, 11 (1984), 395–413; and idem, *Politics of Evolution*.

of the signed preface to Cuvier, together with the fact that the two compositions can be dated within weeks of one another, certainly makes Jameson a more likely candidate than Grant, but this is hardly enough to provide proof of authorship. Much more important are the parallels between the views expressed in the anonymous article and those put forward openly by Jameson at the same time. In fact, it is possible to show that virtually every idea in the "Observations" (except for the open support for Lamarck) occurs in Jameson's other writings from this date. Jameson's additions to the fifth edition of Cuvier display an idiosyncratic cluster of ideas that perfectly matches positions advocated by the author of the anonymous "Observations."

Take, for example, Jameson's concept of the subdivisions of geology. Especially in his teaching, he believed that a natural-historical knowledge of formed bodies, or "oryctognosy," must always precede "geognosy," the spatial ordering of rocks and minerals in the earth's crust; only then could one pursue geology. This point, which is derived from Jameson's mentor Abraham Werner, is also emphasized in the anonymous piece, where "geology" and "geognosy" are consistently distinguished.¹⁴ The anonymous article also shares Jameson's penchant for the older natural-historical term "petrifications." Grant's inaugural lecture, in contrast, speaks of "fossil animals," and follows the common practice of this date in not mentioning "geognosy" or "oryctognosy."¹⁵

The Wernerian cast of the "Observations" is evident in other ways. The anonymous author shares, with Jameson, the belief that the vast majority of rocks are aqueous precipitates:

Whether granite be a production of fire or water, is a matter of indifference in the explanation of its origin, if we are incapable of producing it either in one way or the other; but whoever tells us that the present crust of the earth was once in a state of fusion, and that, upon cooling, it became a solid mass, exhibits an event which, like the heroic exploit of a Curtius or a Cloelia, should be received only upon the most indisputable testimony.¹⁶

This is a most unusual view to find expressed so late as 1826,

14. "Observations," esp. p. 294.

15. Grant, *Essay* (e.g., p. 12). Jameson's use of "petrifications" is evident throughout his writings, especially the earlier editions of Cuvier's *Essay*.

16. "Observations," p. 301.

when almost all geologists had accepted at least some form of modified plutonism. That Jameson still held strongly to his Wernerian views on the origin of veins and other rocks is attested to by a number of sources, including the famous passage in Darwin's autobiography describing a field trip to the Salisbury Crags: here Darwin remembered Jameson demonstrating how a dyke was formed by sedimentary infilling from above, rather than as an igneous melt from below.¹⁷ Jameson's continued advocacy of a universal ocean, with granite and other strata precipitating out of solution, is demonstrated by a long discussion in the notes to Cuvier in 1827.¹⁸ By that date, Jameson was one of the last defenders in Britain of the neptunist views expressed so clearly in the "Observations."

In rejecting plutonism, both the anonymous author and Jameson doubt that any part of the present crust of the earth was once molten. However, they do support the idea that the entire planet was originally in a fluid state; as was common during the 1820s, they argue for this on the basis of the earth's shape.¹⁹ In discussing the subsequent history of the planet, both texts take a firmly anticatastrophist line — much more so than Grant's inaugural discourse, which speaks of "the extensive and terrible catastrophes to which the Animal Kingdom has often been subjected."²⁰

This may come as some surprise to those who think of Jameson as a catastrophist and an advocate of a biblically based deluge. But here again, the "Illustrations" to the fifth edition of Cuvier show the flexibility of Jameson's views. A twenty-page note has been added "On the Universal Deluge," which explicitly repudiates what Jameson saw as Cuvier's linking of geological and biblical evidence. Earth history was not

17. Darwin, *Autobiography*, p. 53.

18. Robert Jameson, "On the Universal Deluge," in Cuvier, *Essay*, pp. 417—437, esp. pp. 418—421; idem, "On the Subsidence of Strata," in *ibid.*, pp. 333—334. As noted in Eyles, "Robert Jameson," p. 70, this edition also included a long note on the "Formation of Primitive Mountains" by igneous action. This, however, is a summary of a paper by Eilhard Mitscherlich and does not represent Jameson's own views, although its inclusion does show his increasing open-mindedness.

19. Compare "Observations," pp. 294—295, with Jameson, "On the Universal Deluge," p. 418.

20. Grant, *Essay*, p. 17. As Adrian Desmond has pointed out to me, Grant's comments on geological uniformity are highly erratic. For the anticatastrophist views of Jameson at this time, see esp. "On the Universal Deluge," pp. 420, 429—431.

punctuated by catastrophic deluges: "All our knowledge of the structure of the earth," he writes, "declares rather a quiet uninterrupted and continually progressive advancement in its formation and development." Similar views underpin the anonymous "Observations," where the author notes: "May this destruction, as is commonly received, have been the result of violent accidents, and destructive revolutions of the earth; or does it not rather indicate a great law of nature, which cannot be discovered by reason of its remote antiquity?"²¹

Jameson and the anonymous author apply this idea of "progressive advancement" to the inorganic geological record. For both, "geognosy" illustrates a change from highly complex rocks in the earliest deposits, to those of simple character in the later ages, while the record of life displays the opposite, with progress from simple to more complex forms of life. Moreover, for both authors this progress is closely related to changes in the fluid medium in which the creatures lived — a doctrine derived from the Wernerian concept of sedimentary rocks as precipitates from an ocean.²² Finally animals in water are succeeded by those on land, and then by man.

21. "Observations," p. 298; Jameson, "On the Universal Deluge," p. 430. For similar comments, see "Deluge," p. 334; and Robert Jameson, "On the Distribution of Boulder-Stones in Scotland, Holland, Germany, Switzerland and America," in Cuvier, *Essay*, pp. 344–354. Martin Rudwick, *The Meaning of Fossils: Episodes in the History of Palaeontology*, 2nd ed. (New York: Science History Publications, 1976), pp. 133–136, emphasizes Jameson's support in the earlier editions for a link between the biblical narrative and the geological record. This position appears in publications as late as 1824 (although probably written earlier); see Robert Jameson, "Organic Remains, Fossil," in *Supplement to the Fourth, Fifth, and Sixth Editions of the Encyclopaedia Britannica. With Preliminary Dissertations on the History of the Sciences* (Edinburgh: Archibald Constable, 1824), VI, 95. But soon afterwards Jameson switched his position dramatically; this is evident not only in "On the Universal Deluge," but also in other writings, such as his notes to John Fleming's articles on the subject. See John Fleming, "Remarks Illustrative of the Influence of Society on the Distribution of British Animals," *Edinburgh Phil. J.*, 11 (1824), 287–305; e.g., at p. 299, where Jameson notes that neither Werner nor Frederick Mohs (his two most admired authorities) "advocated the geological diluvian hypothesis." The evidence about Jameson's views quoted in John Fleming, *The Lithology of Edinburgh*, ed. John Duns (Edinburgh: William P. Kennedy, 1859), xxxviii, is contradictory, and may involve a dating or transcription error: Fleming believes Jameson shares his antediluvian views, while an undated letter from Jameson to Patrick Neill is quoted which attacks William Buckland but supports the "Mosaic Deluge — even geologically considered." The entire question of Jameson's attitudes toward the deluge needs to be carefully reexamined.

22. "Observations," p. 298; Jameson, "On the Universal Deluge," pp. 430–432.

For the author of the "Observations," this progression of life is best explained through transmutation. Lamarck's theory is the logical consequence of Werner's. The most striking passages occur in a discussion of the relation between the inorganic and organic worlds: Lamarck is described in glowing terms as "this meritorious philosopher" and "one of the most sagacious naturalists of our day." The progressive appearance of life revealed by the fossil record is used to support transmutation, as is evidence of climatic change, the geographical distribution of organic life, and the variability of plants and animals under domestication. In short, it is likely that "the various forms have evolved from a primitive model, and that the species have arisen from an original generic form."²³

At the same time, the author of the "Observations" is careful to express due caution about the truth of the Lamarckian theory. Despite his brilliance, Lamarck "has resigned himself to the influence of imagination, and attempted explanations, which, from the present state of our knowledge, we are incapable of giving"; evolution and spontaneous generation are, in that sense, attractive possibilities rather than certainties.²⁴ Detailed and patient research is required, and the article ends by encouraging explorers and those with local information to contribute to "the great geological edifice." This concern with encouraging travelers was a constant theme in Jameson's writings and lectures, and it is interesting to see it brought forward in the Lamarckian context of this article.²⁵

Jameson's public views on transmutation were, as might be expected, more guarded. In the preface to the first edition of the *Essay*, published in 1813, Jameson had juxtaposed the views of Lamarck and Cuvier:

Some naturalists, as La Mark, having maintained that the present existing races of quadrupeds are mere modifications or varieties of those ancient races which we now find in a fossil state, modifications which may have been produced by change of climate, and other local circumstances, and since brought to the present great difference by the operation of similar causes during a long succession of ages, — Cuvier

23. "Observations," pp. 296–297.

24. *Ibid.*, p. 297.

25. *Ibid.*, p. 302. For Jameson and natural history exploration, see Jessie M. Sweet, "Robert Jameson and the Explorers: The Search for the North-West Passage. I. W. Scoresby (junior), C. L. Giesecke, M. Wormskiold and John Ross," *Ann. Sci.*, 31 (1974) 21–47; Jacob W. Gruber, "Who was the *Beagle's* Naturalist?" *Brit. J. Hist. Sci.*, 4 (1969), 266–282, esp. pp. 273–275.

shews that the difference between the fossil species and those which now exist, is bounded by certain limits; that these limits are a great deal more extensive than those which now distinguish the varieties of the same species, and, consequently, that the extinct quadrupeds are not varieties of the presently existing species.²⁶

He then went on to reflect on the religious meaning of this debate. Cuvier's views, he noted, would "admonish the sceptic, and afford the highest pleasure to those who delight in illustrating the truth of the Sacred Writings, by an appeal to the facts and reasonings of natural history."²⁷ But four years later, Jameson was evidently having doubts about the religious use of natural history: he rewrote the preface for the third edition (1817) and deleted the religious reflections, keeping only the comparison between Cuvier and Lamarck; this part of the preface was included unchanged in the fourth (1822) and fifth (1827) editions. The balance in this text would seem to be on Cuvier's side, for Lamarck "maintains," but Cuvier "shews." Yet the most striking feature of Jameson's account in this revised version is its evenhandedness in dealing with controversial ideas, for many of his contemporaries were denouncing Lamarck's ideas as atheistical. Jameson calmly calls the debate "a very interesting discussion," and demonstrates a remarkable willingness to keep an open mind.²⁸

Other material in the fifth edition provides evidence for an even more liberal public stance on Lamarckian questions. For example, Jameson's note "On the Universal Deluge" hints at the belief in spontaneous generation that had been openly declared in the anonymous article:

... the organic world with youthful vigour renews itself daily, and decomposes its materials only to reunite them by fresh combinations in uninterrupted succession; while the powers

26. Robert Jameson, "Preface," in Georges Cuvier, *Essay on the Theory of the Earth. With Mineralogical Notes, and an Account of Cuvier's Geological Discoveries. By Professor Jameson*, trans. R. Kerr (Edinburgh: William Blackwood, 1827), pp. vii–viii.

27. *Ibid.*, p. ix.

28. Robert Jameson, "Preface to the Third Edition," republished in Cuvier, *Essay* (1827), p. xvii. The fifth edition, besides its own new preface, also included most of the third edition preface and a brief "Advertisement" to the fourth edition.

of the inorganic world appear almost extinguished. Though this course of nature is manifest to our own observation, her resources and progress are, on the contrary, more concealed; and we can hardly lift the veil which conceals her, unless we follow Bacon's advice, Turn back from rash theories and follow observation and experience.²⁹

The veil that covers the laws of life can be lifted, Jameson says, but only by avoiding speculation. This in itself was a controversial position, for many felt that questions dealing with the vital force were beyond human knowledge.³⁰

The new preface to the fifth edition is even more explicit. Here a broad cosmological claim for the science is made, with Jameson noting that geology "discloses to us the history of the first origin of organic beings, and traces their gradual development from the monade to man himself."³¹ Short of an outright declaration of support for Lamarck, this is about as far as anyone in Britain (including Grant) generally went in publicly advocating transmutation. The presence of a remark of this kind (for all its potential ambiguity) in this prominent place substantially increases the plausibility of Jameson's authorship of the "Observations."³²

Textual Parallels

As suggested above, there is a remarkably close fit between doctrines known to be favored by Jameson in the mid-1820s and those advocated in the "Observations." On the flood, on catastrophes, on Wernerian geology, on inorganic and organic progression: on these and other questions, the anonymous

29. Jameson, "On the Universal Deluge," p. 431.

30. See L. S. Jacyna, "Immanence or Transcendence: Theories of Life and Organization in Britain, 1790–1835," *Isis*, 74 (1983), 311–329; for a slightly later period, see James A. Secord, "Extraordinary Experiment: Electricity and the Creation of Life in Victorian England," in *The Uses of Experiment: Studies in the Natural Sciences*, ed. David Gooding, Trevor Pinch, and Simon Schaffer (Cambridge: Cambridge University Press, 1989), pp. 337–383.

31. Jameson, "Preface to the Fifth Edition," p. vi.

32. For the dangers associated with publicly advocating transmutation in Britain, see Desmond, *Politics of Evolution* and "Robert E. Grant" (above, n. 4); Evelleen Richards, "A Question of Property Rights: Richard Owen's Evolutionism Reassessed," *Brit. J. Hist. Sci.*, 20 (1987), 129–171; James A. Secord, "Behind the Veil: Robert Chambers and *Vestiges*," in *History, Humanity, and Evolution*, ed. James R. Moore (Cambridge: Cambridge University Press, 1989), pp. 165–194.

author and the editor of the *Edinburgh New Philosophical Journal* speak with one voice. On many of these questions, in contrast, Grant had little to say in his signed writings, and in a few cases his stated opinions are directly at odds with those in the anonymous article.

One issue typical of those discussed in the "Observations," but never in Grant's signed writings, is a concern with the agricultural uses of geology. This is an issue dealt with extensively by Jameson, both in a note of over thirty pages in the 1827 edition of Cuvier and in the preface to the same volume.³³ It is in this part of the preface that brief textual parallels with the "Observations" can be identified.

The relevant section of the anonymous "Observations" is as follows; I have quoted it at length to show the identity of argument, with the matching phrases italicized:

Independent also of this connection between the inorganic and the organic world, between geology, botany, and zoology, it is surely no unprofitable occupation for a rational being, to inquire what this earth upon which we live consists of, how it is constructed, what changes it may have suffered, and what it may still be destined to undergo. Whoever is still unsatisfied, *whoever estimates the value of science, not by intellectual desires but by practical advantage*, ought to recollect that there are few of the arts of life to which geology is not more or less applicable. It is *one of the foundations of agriculture*, which cannot flourish without a knowledge of the soil, it instructs us in the course and operation of water, whether we wish to prevent it from doing injury, or turn it to advantage; it *enables us to search out materials for our habitations and furniture*, and the art of working mines, with which geology originated, and which in return yields its most valuable productions.³⁴

In the preface to the fifth edition of Cuvier's *Essay*, Jameson writes:

Can it be maintained of Geology, which discloses to us the history of the first origin of organic beings, and traces their gradual development from the monade to man himself, —

33. Robert Jameson, "On the Connection of Geology with Agriculture and Planting," in Cuvier, *Essay* (1827), pp. 453–485; Jameson, "Preface to the Fifth Edition," pp. vi–vii.

34. "Observations," p. 300.

which enumerates and describes the changes that plants, animals, and minerals — the atmosphere, and the waters of the globe — have undergone from the earliest geological periods up to our own time, and which even instructs us in the earliest history of the human species, — that it offers no gratification to the philosopher? Can even those *who estimate the value of science, not by intellectual desires, but by practical advantages*, deny the importance of Geology, certainly *one of the foundations of agriculture*, and which *enables us to search out materials for numberless important economical purposes*?³⁵

When added to the close match of ideas with those Jameson is known to have held, this textual evidence makes his authorship of the anonymous essay as certain as it can be in the absence of a direct claim.

The similarity of the “Observations” in its aim, contents, and date of composition to the signed 1827 preface suggests that Jameson initially prepared the article for the fifth edition of Cuvier,³⁶ but decided against it, presumably because he did not wish to make an open avowal of support for Lamarck. As the editor of the *Edinburgh New Philosophical Journal*, he was of course well placed to publish it anonymously in his own periodical.

CONSEQUENCES AND CONCLUSIONS

How did Jameson come to contemplate the possibility of evolution? He does not seem to have been particularly interested in theological questions or religious affairs, and information on his precise beliefs is hard to come by. To hold his professorship, he would have needed to satisfy the church authorities of his orthodoxy, and he seems (like his former student Grant) to have been a member of the Moderate faction in the Presbyterian kirk. As such, Jameson would certainly have been more willing than evangelical contemporaries like David Brewster or John Fleming to countenance doctrines of natural law. And as John Brooke has argued, the Presbyterian tradition generally was more open than the Anglican to flexible concepts of divine

35. Jameson, “Preface to the Fifth Edition,” pp. vi–vii.

36. The prominence given in the “Observations” to the mummified ibis, which was Cuvier’s most important evidence against transmutation, also supports this hypothesis.

action.³⁷ The “Observations” emphasize that the origin of species through secondary laws was “more worthy” of the “first Great Author than the limited conceptions that we commonly entertain.”³⁸ Clearly, transmutation and spontaneous generation were in danger of being associated with atheism, for this is the only time that God is invoked in the article. With the growing power of the Scottish evangelical party in the 1820s, such a disclaimer (and the veil of anonymous authorship) was essential.

In political terms, Jameson was no radical. In fact, he must have been a Tory in 1804, to have been appointed to a Regius professorship during the regime of Henry Dundas in Scotland. His views probably became more liberal in the relative calm of the mid-1820s, but in any case his political commitments were never strong. Here a contrast with Grant’s later career is evident. After Grant left Edinburgh in 1827 to take up the chair of comparative anatomy at the secular University of London, he soon became active in medical reform. Support for Lamarck became part of a radical political campaign, aimed against the privileges of the Royal College of Surgeons and carried out in Thomas Wakley’s fiery *Lancet*.³⁹ Jameson’s interest in Lamarck (and arguably Grant’s too, while he was still in Edinburgh) did not have this charged political meaning. The context was very different.

From Jameson’s perspective, importing a naturalistic theory of species origins was part of a wider campaign to bring British science into line with the best specialist work in Germany and France. Far more than most English-speaking men of science, Jameson kept abreast of natural history on the continent, and he recognized that his European colleagues were actively interested in Lamarck, Étienne Geoffroy Saint Hilaire, and other authors who offered alternatives to Cuvier.⁴⁰ Jameson’s awareness would have been increased by the presence of Grant in Edinburgh

37. John H. Brooke, “Natural Theology and the Plurality of Worlds: Observations on the Brewster-Whewell Debate,” *Ann. Sci.*, 34 (1977), 221–186; Desmond, *Politics of Evolution*, pp. 63–64.

38. “Observations,” p. 297.

39. Desmond, *Politics of Evolution*, pp. 81–92, 101–151.

40. The development of continental natural history during this period is analysed in Toby Appel, *The Cuvier-Geoffroy Debate: French Biology in the Decades before Darwin* (New York: Oxford University Press, 1987); Bernard Balan, *L’ordre et le temps: L’anatomie comparée et l’histoire des vivants au XIX* (Paris: Librairie Philosophique, 1979); Pietro Corsi, *The Age of Lamarck: Evolutionary Theories in France, 1790–1830* (Berkeley and Los Angeles: University of California Press, 1988).

from 1820 to 1827: Grant had imbibed the latest ideas at their source, and presumably would have discussed them in detail with Jameson, with whom he was in close contact during these years as a “constant pupil.”⁴¹ Jameson recognized that the new approaches were considered subversive in certain quarters, but his own view of them derived primarily from his position as one of the leading specialists in natural history in Europe.

The authorship of the “Observations” does not seem to have been mentioned in any contemporary documents, although it is hard to believe that some of the leading figures on the Edinburgh scene, such as Brewster, Fleming, Grant, and Patrick Neill (a friend of Jameson’s and printer of the journal), would not have been in on the secret. On the other hand, in certain circles Jameson had a reputation as a retiring, scholarly man who kept his opinions to himself. Surely if the authorship were known at all, it would have increased fears (especially in England) that support for progressionist geology could lead to transmutationism. Giving Jameson a central role in Edinburgh natural history in the 1820s supports Desmond’s claim that Grant was no “anomaly,” as Eiseley would have it, but part of a wider circle of Scottish naturalists interested in evolution.⁴² This might help to explain why Charles Lyell felt it necessary to repudiate Lamarck at such length in the second volume of the *Principles*, and why Fleming noted with alarm that Lamarck was “making some converts.”⁴³

Whatever the extent of contemporary knowledge of the essay’s authorship, the corrected attribution should help to make sense of the social world of Edinburgh geology and natural history. For too long Darwin’s dismissive comments in the autobiography have obscured Jameson’s leading role as an innovator in teaching, museum-building, and introducing new ideas. It has been obvious for some time that at the very least Jameson must have been willing to see Lamarck defended in a public forum, for the *New Edinburgh Philosophical Journal* was under his sole editorial control. In lectures, in books, and in the *Journal* he encouraged the airing of both sides of controversial issues. A number of authors, for example, have pointed out the

41. “Biographical Sketch of Robert Edmond Grant,” *Lancet* (1850), 2, 690.

42. Desmond, *Politics of Evolution*, pp. 59–81; Eiseley, *Darwin’s Century*, p. 145.

43. [John Fleming], “On Systems and Methods in Natural History,” *Quart. Rev.*, 41 (1829), 320.

unusually cosmopolitan attitudes of the *Journal* in a period marked by frequent British insularity in scientific matters. Jameson encouraged importation of the latest French and German ideas on a whole range of topics. Gordon Herries Davies has documented the way in which Jameson used the *Journal* to introduce the English-speaking scientific world to the glacial theories of Jean de Charpentier, Jans Esmark, and Louis Agassiz. Similarly, Dov Ospovat has shown that the embryological theories of Karl Ernst von Baer first entered Britain through the agency of what was justifiably referred to as "Jameson's *Journal*."⁴⁴

With Jameson identified as a cautious supporter of Lamarck, a stronger case can be made for the importance and extent of his editorial activity. Many translations from French and German works in anatomy and physiology first appeared in the *Edinburgh New Philosophical Journal*. As Desmond has pointed out, an important memoir by Étienne Geoffroy St. Hilaire, abstracted in 1829, openly asked if present-day species had descended from extinct ones.⁴⁵ Perhaps most intriguingly, the *Journal* featured a large number of anonymous articles on various topics in theoretical natural history. One of these, on the "Establishment of Vegetation at the Surface of the Globe," is identified as Jameson's in the *Royal Society Catalogue*, but as it has an added note from the "editor," it is presumably by someone else.⁴⁶ Although the authorship of these articles (which often take up diametrically opposed positions) cannot be established here, their inclusion in the *Journal* does demonstrate that Jameson encouraged controversy, and that his role as editor needs to be examined more closely. Similarly, it would be interesting to have a closer look at the content of Jameson's

44. Gordon L. [Herries] Davies, *The Earth in Decay: A History of British Geomorphology* (New York: American Elsevier, 1969), pp. 268–271; Dov Ospovat, "The Influence of Karl Ernst von Baer's Embryology, 1828–1859: A Reappraisal in Light of Richard Owen's and William B. Carpenter's 'Palaeontological Application of von Baer's Law,'" *J. Hist. Biol.*, 9 (1976), 1–28. J. B. Morrell, "Science and Scottish University Reform: Edinburgh in 1826," *Brit. J. Hist. Sci.*, 6 (1972), 48–51, gives an excellent picture of the range of Jameson's activities in the university context.

45. Desmond, *Politics of Evolution*, p. 54; E. Geoffroy St. Hilaire, "Of the Continuity of the Animal Kingdom by Means of Generation, from the First Ages of the World to the Present Times," *Edinburgh New Phil. J.*, 7 (1829), 152–155.

46. "Establishment of Vegetation at the Surface of the Globe," *Edinburgh New Phil. J.*, 2 (1828), 64–73.

famous lectures, particularly as the published syllabus states that he dealt with the “Origin of the Species of Animals.”⁴⁷

The currently established picture of the Plinian Society, a student group established by Jameson in 1823, will also need to change. The Plinian, which Charles Darwin joined in 1826, is well known to historians as a center for the discussion of materialism and “advanced views” in natural history. In a famous incident in March 1827, William A. Browne read a paper arguing for the material constitution of the human mind — a discussion that was later censored from the minute book. Such student societies had become so notorious by 1827 that the Scottish Universities Commission specifically asked Jameson about the Plinian Society’s activities.⁴⁸ Although he disclaimed direct responsibility for them, this can hardly have been the case; after all, he was the society’s founder and the connecting thread that kept the group together over many decades of its existence. The Plinian is best seen — like the *Journal* — as another of the ways in which Jameson tried to keep Edinburgh abreast of the latest developments on the continent. Grant, John Coldstream, and others were undoubtedly important in the Plinian, but Jameson (even in Darwin’s memory) was a central figure.

On a more general level, the historical literature on the development of biology and geology during the nineteenth century is still dominated by a supposed conflict between two intellectual “traditions”: one tradition is seen to support natural law and uniformity, the other advocates divine intervention and sudden “revolutions” in the history of the globe. In the first, the genealogy is a heroic one leading from Hutton to Playfair, Lyell, and Darwin. In the second, neptunists are succeeded by diluvialists, catastrophists, and finally by opponents of the *Origin of Species*. Jameson has played a key role in legitimating this story: he is seen not only as a die-hard Wernerian, but also as a diluvialist, catastrophist, and antievolutionist. His editorship of

47. *Evidence, Oral and Documentary, Taken and Received by the Commissioners for Visiting the Universities of Scotland: The University of Edinburgh*, Parliamentary Papers, 35 (1837), p. 118. An examination of surviving student lecture notes suggests that this syllabus is not a reliable guide to the lectures as actually given, although theoretical topics in the philosophy of zoology did receive treatment. See, for example, Robert McCormick, “Notes from Lectures on Natural History, Delivered in the Edinburgh University, by Professor Jameson, during the Winter of 1830–31,” Wellcome Institute for the History of Medicine, MS 3358, esp. lecture 58.

48. Gruber and Barrett, *Darwin on Man* (above, n. 4), pp. 39–40, 479; *Evidence, Oral and Documentary*, p. 146.

Cuvier's retitled *Theory of the Earth*, especially in the original edition of 1813, is used to tie these aspects of his work together. But as we have seen, the notes to the fifth edition show that by 1827 Jameson was in favor neither of the Mosaic flood nor of sudden Cuvierian revolutions as major geological agents, although he continued to advocate a modified Wernerianism. More privately, as revealed by his unsigned article in the *Edinburgh New Philosophical Journal*, support for Werner could be combined with a strong leaning toward Lamarck. The fact that an "old brown, dry stick" like Jameson could be simultaneously a neputunist, a gradualist, and a transmutationist shows how completely our current picture of the acceptance of evolution needs to be overhauled. It is not only in questions of attribution that we have taken too much for granted.

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