

you understand all. You cannot have an elephant-sized cat because its legs would not be strong enough to bear the weight, let alone jumping at a mouse. We have heard this sort of thing before, but the author takes the argument a step further, because he wants to argue that this sort of thing is going to happen all the way along. You get things up and functioning as fish, and what next? Go to land. But you cannot just go to land. You have got to have a way of breathing out of water and walking around and so forth. And there are only a limited number of options, if any. You cannot go straight from fish to mammal, for instance. And, thanks to physics, the steps are pretty much predetermined. So, bluntly, Cockell can claim: "If physics and biology are tightly coupled, then life outside Earth, if such life exists, might be remarkably similar to life on Earth" (p. 14). He adds that we might then have "predictability, the hallmark of a good scientific theory" (p. 14).

Provocative and fun to read, but I am not convinced. I am sure that J. B. S. Haldane had a theorem for this sort of thing, like Aunt Jobisca's theorem, if I tell you three times it must be true. In this case, if I cannot think of an alternative it must be true. But, as Richard Dawkins has said, natural selection has a nasty way of being cleverer than we. I suspect that this might be the case—many, many cases—here.

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BUCKETS FROM AN ENGLISH SEA: 1832 AND THE MAKING OF CHARLES DARWIN.

By Louis B. Rosenblatt. *Oxford and New York: Oxford University Press.* \$34.95. xi + 204 p.; ill.; index. ISBN: 9780190654405. 2018.

This is not, by any stretch, an ordinary book about Darwin. The man himself does not appear prominently until around three-quarters of the way through the volume. In what sense, then, does Rosenblatt propose to describe for us the "making of Charles Darwin"? A number of authors—perhaps foremost among them Michael Ruse and Jon Hodge—have argued that the correct way to frame our understanding of Darwin is to embed him into his English context. Darwin is, after all, a mid-19th century English naturalist. It is this picture of Darwin, then, to which Rosenblatt contributes, by situating Darwin's formation within the broader cultural and scientific currents of his time.

The work focuses on the single year of 1832—offering us a number of "buckets," or vignettes, which taken together give us an idea of what the environment was really like in mid-19th century England and, in turn, what features of this environment might have led Darwin to pick up an evolutionary picture

of the history of life where and when he did. Rosenblatt weaves together discussions of the Reform Bill (which reallocated seats in Parliament to cities and away from elite landowners), the changing nature of historical criticism (via discussions of Thirlwall and Grote's approaches to Greek mythology), and revisions to the status quo in geological research (comparing the work of Sedgwick and Lyell, along with some insightful discussion of the broader character of Victorian science).

These strands provide us with an idea of the cultural climate in which, he argues (echoing Desmond and Moore), the crucial event in Darwin's formation of an evolutionary worldview occurs: his encounter (also in the same pivotal year of 1832) with the natives of Tierra del Fuego. Their apparent brutality shook Darwin's belief in the fundamental goodness of humanity, a trauma that, Rosenblatt claims, could only eventually be resolved in the detailed evolutionary narrative of *The Descent of Man*.

One should not, then, look here for an extensive biography of Darwin, nor even a primary source-laden reconstruction of the events of 1832 in his life. The picture is taken with a much wider angle; we see the ways in which Darwin's political and social context resonated with his developing scientific work and his future advocacy for common descent and natural selection—with parallels between the reconstruction of Greek mythology, geological strata, and the course of human evolutionary history. The work certainly lacks the kind of laser-like focus that is (perhaps too) common in contemporary historical research. But such breadth means that even seasoned veterans of the Darwin literature will likely find many drops from these buckets to be unexpected and novel, and the story that Rosenblatt weaves from them is a pleasurable read, sure to increase one's appreciation for Darwin and his cultural milieu.

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DARWIN'S FIRST THEORY: EXPLORING DARWIN'S QUEST TO FIND A THEORY OF THE EARTH.

By Rob Wesson. *New York: Pegasus Books.* \$29.95. xxi + 457 p. + 32 pl.; ill.; index. ISBN: 978-1-68177-316-2. 2017.

This volume provides a lively, readable account of Darwin's geological career. As an historical effort, the story is told by the references: admirable coverage of primary sources, helpful citations of very readable books, but extremely limited engagement with arguments, evidence, and interpretations from the secondary literature. Philosophers of science are mentioned but their views not seriously engaged.