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# Essay Review

## Far from depleted…

**Michael Ruse** (ed.), *The Cambridge Encyclopedia of Darwin and Evolutionary Thought*. Cambridge: Cambridge University Press, 2013. Pp. xvii + 568. ISBN 978-0-521-19531-7. £124.99 (hardback).

**Peter Bowler**, *Darwin Deleted: Imagining a World without Darwin*. Chicago and London: The University of Chicago Press, 2013. Pp. 318. ISBN 978-0-226-06867-1. £21.00 (hardback).

There's just no deleting Darwin, not really. Even Peter Bowler, the title to whose delightful book purports to do just that, is quick to add in the subtitle that he is only *imagining* the history of science without Darwin. The sixty-three essays written by a like number of scholars, Bowler among them (some articles are co-authored and a handful of authors have contributed to more than one essay) in the recently published *Cambridge Encyclopedia of Darwin and Evolutionary Thought* bear additional witness to the fact that Darwin's ideas continue to exert a powerful influence on historians, philosophers and biologists alike.

The two volumes covered in this essay are merely two examples of recent books about Darwin and Darwinism and I will leave journal articles and their ilk out of this discussion altogether. The year 2013 also saw the publication of the twentieth volume in the ongoing series of *The Correspondence of Charles Darwin*, and Marwa Elshakry's impressive *Reading Darwin in Arabic, 1860–1950*, was released in 2014.[1] Then there are books by Darwin's detractors, *Darwinian Evolution and Classical Liberalism: Theories in Tension* being just one recent example.[2] All of which just goes to show that, love him or hate him (love to hate him even), nobody ever actually deletes Darwin from a serious conversation about evolution or, indeed, more broadly, biology.

So wherein lies Darwin's appeal to what is arguably the largest subpopulation of scholars across a spectrum of disciplines, more than a century and half since his heyday? Both volumes under discussion here have light to shed on the robustness of his popularity. As philosopher Michael Ruse, the editor of the *Encyclopedia*, says in

1 Frederick Burkhardt (†), James A. Secord and Janet Browne (eds.), *The Correspondence of Charles Darwin*, vol. 20: 1872, Cambridge: Cambridge University Press, 2013; Marwa Elshakry, *Reading Darwin in Arabic, 1860–1950*, Chicago and London: The University of Chicago Press, 2013.

2 Stephen C. Dilley (ed.), *Darwinian Evolution and Classical Liberalism: Theories in Tension*, Lanham, MD: Lexington Books, 2013.

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his introduction to the volume, the range and content of the essays 'speak without need of further proof of the importance of Charles Darwin and his theory' (p. 31). *Darwin Deleted* takes us on a narrower – read more focused – but somewhat more circuitous and indirect path to the same conclusion. A counterfactual history that considers the biology or biologies that might have been and have become without Darwin – had he say, fallen off the *Beagle* and drowned or perhaps not been born at all – this book underscores the visible presence of Darwin in the dominant paradigm of the biology as it exists today. It is true that Darwin's place in the history of science may have overshadowed others and that 'deleting' him, however temporarily, enables us to consider the work of such illustrious evolutionary thinkers as Hooker, Huxley and Wallace on their own merits. But, by considering the possible research trajectories of these scientists without the influence of Darwin's ideas, the book also succeeds in highlighting and reinforcing those aspects of the latter that were unique. And, as the *Encyclopedia* bears out, what made him unique in his time is what keeps him interesting and in play today.

Indeed Darwin was unique, and Bowler develops this theme rather exhaustively in Chapter 2 of his book, titled 'Darwin's originality', an expansion of an essay with the same title that he published in the journal *Science* as part of Darwin's bicentennial celebrations.[3] Paradoxically, in his book at least, Bowler points to the spate of articles about Darwin published at the time as a factor in diminishing the real impact and originality of his contributions:

> by endlessly telling the story of his discovery, they may only have encouraged people to believe that what he observed was available to anyone at the time. Darwin merely won the race to discover natural selection, just as a celebrity athelete does the same thing as everyone else in the field, only slightly better (pp. 29–30).

While the theory of evolution was certainly 'in the air' in the mid-nineteenth century, Bowler contends that the specific mechanism of natural selection and all that it implied was uniquely Darwin's contribution, a specific product of his putting ideas together in a context that could have only occurred to someone with all the diverse bits of knowledge drawn from his particular experiences and interests. Not only Darwin's *Beagle* voyage – spotlighted in the opening lines of *Origin* – but also his extensive knowledge of the work of animal breeders at the time were vital to the way he conceptualized and then explained his ideas. True, Bowler concedes, Wallace came up with a similar notion of 'branching evolution driven by local adaptation' – albeit some twenty years after Darwin – but he goes on to argue that Wallace understood the process differently.[4] The analogy between natural and artificial selection, which Darwin deployed with such effectiveness at the beginning of the 'long argument' that was *Origin*, was an insight that Wallace completely overlooked (p. 31). But it was precisely that analogy, developed some twenty years prior to any correspondence with Wallace, that made Darwin's vision of the workings of evolution both new and unique, argues Bowler. It may be worth noting here that in his chapter in the *Encyclopedia* focusing specifically on this analogy, the historian Bert Theunissen claims

3 Peter J. Bowler, 'Darwin's originality', *Science* (2009) **9**, pp. 223–226.
4 Bowler, op. cit. (3), p. 223.

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that the flow of information between Darwin's understandings of natural selection and of animal breeding worked in both directions. Also completely unique about Darwin's ideas, according to Bowler, were the conceptions of the tree of life and common descent (divergent evolution), the latter idea dubbed by biologist Ernst Mayr the 'Darwinian Revolution'. Where others might have conceived of natural selection, Bowler argues that without the broader framework provided by Darwin's 'theoretical program' they wouldn't have known what to do with it (p. 36).

One common theme that runs through both Bowler's book and his essay 'Darwinism in Britain' in the *Encyclopedia* is the contrast between the importance given to natural selection in Darwin's time and in our own. Natural selection is generally regarded by most scientists today as Darwin's most significant contribution to evolutionary theory, but Bowler claims in his chapter (p. 218), and Ruse reiterates in his introduction (p. 11), that selection was not at all successful in the early days following the publication of *Origin*. Other ideas such as the lack of fixity in species and the characterization of evolution as a branching tree and not a ladder carried more immediate currency. In fact, as Mark A. Largent recounts, at the time it was proposed, the theory of natural selection received a 'cool response' from naturalists in the Americas, where science was 'pursued for its economic potential' in contrast to Europe: 'Darwinism in the United States was put to explicitly practical uses' (p. 226) rather than valued for its implications for a paradigm shift within biology. Largent further goes on to posit that its benefits to science became the issue taken up by its defenders during the 1920s, when it became a target for critics who saw it as a threat to various social, political and cultural values. And in France, offers the philosopher Jean Gayon, the domination of the positivist view of science at the time Darwin put forth his ideas made the scientific community 'explicitly antagonistic to any biological research that aimed at explaining the phenomena of life in terms of origins' (p. 247).

Despite such early reservations, natural selection garnered its share of proponents right from the time of its formulation, as detailed by Robert J. Richards in his essay on the German reception of Darwin's theory. Indeed, Richards states that the idea was received very warmly by German intellectuals such as Ernst Haeckel, who 'plowed through the yielding turf to plant the seed of Darwinism deep into the intellectual soil of Germany' (p. 235). Richards's essay goes on to trace the German–Darwinian relationship well into the twentieth century, grappling with modern-day contentions by members of the Discovery Institute in Seattle that Darwin's theories were intimately and intricately related to Nazi ideology and the kind of biology it promoted. In reaction to the philosopher David Berlinski's assertion in the film *Expelled* that 'if you open *Mein Kampf* and read it … the correspondence between Darwinian ideas and Nazi ideas just leaps from the page' (quoted on p. 241), Richards counters that 'only the most dogmatically robotic' would find anything resembling Darwin's evolutionary theory in Hitler's works (p. 242). While he concedes that Darwin and Haeckel showed evidence of believing in a hierarchy of races and that the racial views expressed in Hitler's famous *Mein Kampf* might indicate the influence of Darwin – whose name incidentally does not appear in any of Hitler's writings – Richards argues that both Hitler's notions of racial homogeneity and his drive to racial purity are in direct conflict with biological processes such as variation and transmutation, which form the cornerstone of Darwinian theory.

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Most of the essays mentioned thus far deal with the issue of the reception of Darwin's ideas when or immediately after he published them, but I would be remiss if I were not to mention the fact that the sixty-three essays of the *Encyclopedia* cover far wider territory in terms of both time and subject area. There is something in it for virtually everyone, be their interest in ethics, DNA, language or botany. It is, of course, impossible to even mention all of the essays, let alone give each one due justice, but perhaps the only way to really do the latter is to read them. Like other encyclopedias, the book is not a one-sit read, but rather a volume that is handy to have at hand to look up a favourite or famous scholar on Darwin at a moment's notice. Familiar issues to intersect with the history and philosophy of evolution and Darwinism take their bows certainly: religion, ecology and the environment, finches, sociobiology, to name but a few. But what makes the volume particularly valuable in my opinion is the essays about the outliers and the unfamiliar. This, of course, will be different for different readers; as someone who is fascinated by, but completely unschooled in, linguistics, I was particularly taken by Stephen G. Alter's piece on 'Darwin and language'. Another draw, for entirely different reasons, was Gowan Dawson's essay on Darwin and literature. Ever interested in the ways that science makes its ways into fiction and literature, I opened the volume to this essay only to discover new ways to read old favourites such as Dickens's *Great Expectations* and George Eliot's *Middlemarch*.

What of Darwin and evolutionary theory today? Are they simply part of the canon, to learn about, admire, accept and move on? Not so, implies this volume, and I will end my essay with reference to two contributions that I felt exemplified particularly well the ongoing relevance of talking about Darwin's ideas. Steven Hecht Orzack makes an eloquent case for the need to continue to test evolutionary phenomena, to honour the 'multiplicity of hypotheses that arise from the fact of natural selection' (p. 335) and not treat the ideas of Darwin and Wallace as static. The final essay in the volume, by Tatjana Buklijas and Peter Gluckman on evolutionary medicine, opens new vistas for the application of Darwinian theory, even as it shows that, far from being associated only with negative aspects such as eugenics, or serving as a poster child for warning against the dangers of overprescribing antibiotics, evolutionary knowledge has informed a wide range of medical disciplines in history, including infectious diseases and microbial pathogenesis, medical genetics and immunology. As a historian of the work of Frank Macfarlane Burnet, I was naturally gratified to note due credit given to his clonal selection theory, which was explicitly Darwinian. What remains a challenge, Buklijas and Gluckman point out, is the development of a coherent programme to test the workings of evolution in disease and medicine. As in the case of all scientific disciplines in the making, they envision that 'as the rigor is applied, the discipline will strengthen and its value to clinical medicine in providing an essential core medical competency may be accepted' (p. 513).

So, as the two titles reviewed herein attest, many times and in many ways, well into the twenty-first century Darwin remains undeleted and thus far, as I have claimed in my title to this essay, far from depleted. And I, for one, am thoroughly delighted.

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