



REVIEWS AND BRIEF NOTICES

History, Philosophy, and Ethics of Biology	373	Genetics	399
Paleontology	379	Microbiology	400
Ecology	381	Botany	401
Conservation Biology	386	Mycology	402
Evolution	390	Zoology	402
Behavior	391	Human Biology and Health	407
Neurobiology	396	Miscellaneous	410
Cell and Molecular Biology	399		

HISTORY, PHILOSOPHY, AND ETHICS OF BIOLOGY

DARWIN DELETED: IMAGINING A WORLD WITHOUT DARWIN.

By Peter J. Bowler. *Chicago (Illinois): University of Chicago Press.* \$30.00. ix + 318 p.; ill.; index. ISBN: 978-0-226-06867-1 (hc); 978-0-226-00984-1 (eb). 2013.

For Robert FitzRoy, captain of the HMS *Beagle*, Darwin's nose was that of a man who lacked the qualities necessary for coping with a difficult sea voyage. If FitzRoy had denied Darwin a position on the *Beagle* and, as a consequence, Darwin failed to write *On the Origin of Species*, how would this change the course of history?

In his book, *Darwin Deleted*, Peter Bowler presents a counterfactual history in which Darwin does not exist. He shows that, in a world without Darwin, an account of evolution by natural selection would likely not have emerged until around the turn of the century. Darwin was uniquely positioned among his contemporaries to develop such a theory as early as 1859. Given Darwin's special role in formulating evolution by natural selection, would a non-Darwinian world avoid the atrocities associated with social Darwinism? Bowler presents a range of historical evidence demonstrating that this would not be the case. By the mid-1900s, life scientists were developing various nonselectionist theories of evolution independently of Darwin and moving away from explaining natural phenomena by appealing to supernatural causes. In a world without Darwin, these evolutionary theories would

have served as the foundation for what came to be known as social Darwinism in our world.

Bowler presents this counterfactual history with the aim of challenging assumptions underlying contemporary controversies over evolution. He challenges the perceived incompatibility between science and religion by showing that although evolution by natural selection would have emerged in a world without Darwin, its delayed emergence would have made it less threatening to religious thinkers. He challenges the common Creationist claim that Darwinism has led to atrocities, such as the Nazis attempted extermination of the Jews, by showing that social Darwinism would have emerged in a non-Darwinian world. In such a world, scientists would have eventually adopted natural selection as the best account of the evolutionary development and diversification of species, but it would not be associated with a cruel political and social ideology.

One might be skeptical of the plausibility of a counterfactual history. Without the constraints imposed by our actual world, how can we say what the course of history would have been? Bowler draws on his extensive knowledge of 19th- and 20th-century evolutionary thought to carefully extract Darwin from history while leaving non-Darwinian factors intact. The result is a compelling counterfactual history that forces readers to re-examine his or her beliefs about the associations between Darwinism, social Darwinism, and religion. *Darwin Deleted* is an important contribution to the history of science and is essential reading for students and scholars interested in the biological sciences and

evolutionary thought. More importantly, however, it is an accessible book that will engage general readers and should be read by anyone who wants an informed view on the relationship between evolution and religion.

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THE CORRESPONDENCE OF CHARLES DARWIN. *Volume 21: 1873.*

Edited by Frederick Burkhardt et al. Cambridge and New York: Cambridge University Press. \$145.00. xl + 784 p. + 1 pl.; ill.; index. ISBN: 978-1-107-05214-7. 2014.

The consistently high-quality edition of the complete correspondence, to and from, Charles Darwin has now reached its 21st volume and the year 1873. The *Descent* had been published two years previously and the sixth and final edition of the *Origin* the year before. We are now steering into quieter waters as Darwin turned to topics like the nature of insectivorous plants, topics of personal interest rather than Earth-shattering importance.

What does come through strongly is the extent to which Darwin, as always, was embedded in family. Cared for by his wife. Trying to find jobs for his sons. Consulting his older brother Erasmus on financial and family matters. It is understandable and proper that of all of Darwin's close relatives it is his wife Emma who gets the most attention, but increasingly I think Erasmus deserves more of our interest. He was there running chemistry experiments in the back garden when Darwin was beginning life as a scientist, he was there in London after the *Beagle* voyage during the great creative years leading to evolution through natural selection, and it is clear that he was part of the story right on through the decades, listening and advising and simply being a good friend of the family.

What also come through strongly are the close bonds that Darwin had forged with his inner band of supporters, particularly Joseph Hooker and Thomas Henry Huxley. This is the year when Huxley moved toward another of his breakdowns and his friends rallied around and put money in his bank account to ease the family stresses. Then Hooker hauled him off for an extended vacation. It takes nothing from Darwin's genius to note that his skills as a scientific politician are up there with his skills as a creative thinker. Huxley was needed and so was cherished and helped.

There is also the rather amusing. Asked to become patron of a cat show, Darwin agrees although worrying that, with his name attached, no one will want to come to see "atheistical cats." Although as this volume shows, while the cats may have been at one with

Richard Dawkins and company, Charles Darwin took a much milder line on the subject of nonbelief. As always with these volumes, there is so much to find and so much to increase our understanding of this truly great scientist.

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BERGEN-BELSEN 1945: A MEDICAL STUDENT'S JOURNAL.

By Michael John Hargrave. London (United Kingdom): Imperial College Press. \$42.00 (hardcover); \$17.00 (paper). xx + 92 p. + 16 pl.; ill.; no index. ISBN: 978-1-78326-320-2 (hc); 978-1-78326-288-5 (pb). 2014.

This is a facsimile of a typescript prepared a few years after the handwritten copy of Michael Hargrave's diary written to his mother in case he did not survive the war. He volunteered (along with 94 other British medical students) to help treat victims in need of medical attention in northern Europe in the closing days of World War II in Europe. He thought he was going to Holland but his unit ended up at Bergen-Belsen in northern Germany. Bergen-Belsen was liberated by the British Army on April 15, 1945. The diary begins in London on April 28 and ends May 28 with Hargrave's return to England. After he completed his medical studies, he became a practicing physician, married, and had two children. He died relatively young at age 50 of a brain tumor. His children used the typescript as a contribution to a fundraising effort for polio eradication sponsored by Rotary International, which will be receiving royalties from the sale of this book. The 87-page typed diary includes hand-drawn sketches of the concentration camp layout, the rooms where the dead, dying, and sick were housed, and some of the patient's skin ulcers and other physical disorders from their ordeal. Hargrave was assigned to one of the women's units.

Assisting him (a form of punishment) were medical personnel from captured SS guards as well as Hungarians, Italians, and Poles who had served with the German army and who were housed in a unit just north of the concentration camp complex. Very quickly the medical staff assessed that a first priority was stopping the spread of typhus, which killed about one-third of the occupants. They sprayed each room, the camp grounds, and all of the inhabitants with DDT. The second priority was saving those with severe malnutrition. Most of the Jews (and a smaller number of political prisoners, gypsies, and homosexuals) were emaciated with their bones protruding into a film of skin and edema of the joints. They began