Evolution and Belief: Confessions of a Religious Paleontologist

Robert J. Asher
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Robert J. Asher is a believer; he is religious. But Asher is also a Senior Lecturer and Curator, University Museum of Zoology at the University of Cambridge, and a practicing paleontologist. How do we reconcile these two apparent disparities? Does not a convictional touting of one necessarily belie the other? In other words, in this day and age, can one in fact be a both a paleontologist, focusing on evolutionary biology, while concurrently holding to a belief in God? Asher's answer is an emphatic yes (and mine, as an evolutionary biologist, is similarly indeed). However, according to Asher, one must ever recognize the difference between *agency* and *cause* in order to accomplish this view. Cause refers to the *how* of event, its most proximal cause (or *efficient* cause), whereas agency refers to the *why* of an event, its ultimate cause (or *final* cause).

As a paleontologist, Asher is intently devoted to the fossil record as a way of vindication for Darwin's thesis that all of life is connected via common descent. At no time, however, has this led Asher to simply declare that God and Darwin are antagonistic. Whether you are an atheist or a fundamentalist, wherein lies the disparity Asher notes, he hopes that by reading onward in his text, you will change your mind and see that, similar to him and I, there is no disparity at all. Indeed, Asher spends time in this book sharing with us in a straightforward manner a few of the well-documented cases that make Darwinian evolution so compelling. These cases concern facts that every teacher in every school should know, and that we should thereby know do not have fatal implications for a principled religious worldview.

This does not mean that Asher is a friend of the creationists, for he is not. Nor does this mean that he capitulates his science to the tenets of religious faith, which he also does not do. Rather, he acknowledges that in order to arrive at peace between the two camps, those of a religious bent must be flexible in their beliefs, by for example, not insisting on dogmatic literalism in their reading of scripture. On the opposite side, scientific atheists must not be dogmatic that a belief in a scientific tenet necessarily entails atheism. Indeed, it is not only possible to portray science as lacking fatal consequences for religions that concern things we cannot empirically count or measure or see, but this is exactly what scientists must make clear in order for them to make inroads to the religious public. Throughout these pages, Asher tries to make clear two points: first, that *evolution is true* as a mechanism that seeks to explain how living things have been derived from other living things on this planet; and, two, that understanding *how* evolution works does not address the *who* or *why* behind it.

Indeed, in Chapter 1, Asher describes how Darwinian evolution does not address questions of ultimate meaning and purpose in existence—nor does it have to—but it does in fact explain a lot of the how pertaining to biological diversity *once* it began. With evolutionary biology freed from its misappropriated religious implications in Chapter 1, in Chapter 2, Asher introduces how natural selection logically leads to a variety of specific predictions concerning common descent, the fossil record, geological time, the development of organisms, and molecular biology (topics which are expounded in later chapters). Truly, it is easier to see how the evidence in favor of evolution by natural selection in biology is remarkably abundant in Chapter 2. In Chapter 3, Asher makes a compelling case for biological evolution without reference to data from extinct life. Indeed, he looks at numerous examples of how living organisms exhibit intermediate morphologies between other modern groups, such as the tarsier, bandicoot, platypus, and the coqui frog.

However, he does make reference to extinct life in Chapters 4-8, and thereby the case for evolution by natural selection becomes even stronger. In Chapter 5, for example, Asher documents the evolution of mammalian hearing bones and the mosaic features now found in all mammals. In Chapter 6, he basically outlines the fossil record of elephants, and in Chapter 7, the terrestrial and baleen whales. Chapter 8 makes clear that these two examples document how extinct life has been has been constrained by the same natural mechanisms of development and morphology as extant life (note in particular Table 8.1 which documents many of the fossils known to be related to extant life, but that also exhibit mosaics of anatomical features present in modern relatives).

Chapters 9 and 10 detail some of the molecular arguments that agree with specific predictions made by the theory of evolution by natural selection. Indeed, in Chapter 9, Asher notes some of the archaic similarities present in DNA sequences in living organisms. Chapter 10 expresses some examples of natural molecular change such as point mutations, gene duplication, and other sorts of variation that can lead to the generation of such animal attributes as color vision, skeletal shape, and hearing. Chapters 11 and 12 conclude the book with a discussion of probability and how claims of "irreducible complexity" (cf. ID theorists) are now, as they have always been, inadequate for understanding the mechanisms for the emergence of biological

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diversity. In Chapter 11, for example, Asher describes how evolution is not a random process, but is biased instead. Not only is evolution not a random process, but also evolution works through co-option of previous structures for new and innovative uses. In a thoroughly damning asseveration, Asher notes how Intelligent Design theorists are fundamentally mistaken in their endeavors.

Now that I have introduced Asher himself, as well as delineated the components of the book's argument, I would now like to make some general comments about the book itself, as well as a couple of conclusions regarding it. I find that Asher has a distinct affinity toward Stephen Jay Gould, as this book is littered with references to Gould and his 30+ year output (which I find most agreeable). From Punctuated Equilibrium's ability to inform the modern reconstruction of Darwin's theory, to the notion of NOMA (i.e., science and religion existing as NonOverlapping MagisteriA), to Exaptation as a mechanism of acquiring new functions in biology, Gould's influence can be seen throughout this volume. All in all, I could foresee this book being used as a companion text to introductory paleontology courses, as well as in introductory courses in philosophy of science. The perspective of Asher could be used for stimulating discussion groups within such contexts.