REVIEW

The Origin of Species Revisited: The Theories of Evolution and of Abrupt Appearance (2 v.); by W. R. Bird. New York, 1989 (Philosophical Library, $65.00)—Shortly after I published an essay on *Darwin's Three Mistakes* in Geology, I received a thick package of manuscript and a letter from Mr. W. R. Bird. He asked me to make comments on volume 1 of his opus, which was aimed at advancing the creed of "Creation science." I was probably one of the many contacted by Mr. Bird, and he was able to obtain favorable comments from several "evolutionists" to be cited on the back cover of his two volumes. Mr. Bird is a lawyer, and he argued the case on this issue before the U.S. Supreme Court. I was chosen, because Mr. Bird recognized my anti-Darwinian pronouncement. Assuming two alternatives only, all scientists who presented "data that involved weaknesses of the theory of evolution" (p. I–475) were cited as supporters of the alternative "Theory of Abrupt Appearance." I looked over the manuscript and found it apparently a revision of a brief Mr. Bird may have prepared for his appearance before the Supreme Court. Not wishing to get involved in an issue with which I am not familiar, I did not write the comments requested by him. After the book was published, I was sent the two volumes by the publisher with a request to write a review for their newsletter or for a journal which I could select. I hesitated but decided that a review would be useful in order to clarify the muddied situation created by a very clever author.

Volume I has been advertised as an assessment of "scientific claims of the two chief views concerning the origins of the universe, the first life, and plants and animals." It is not a scientific assessment. As Gareth Nelson of the American Museum of Natural History wrote, Mr. Bird's criticism of evolutionary theory "is loaded like the proverbial pair of dice. Indeed, when Mr. Bird rolls for evolutionary theory, who would expect anything but snake eyes to come up?" One cannot expect a defense lawyer to discuss evidence detrimental to the case of his defendant; we scientists do things differently. Science progresses through falsification: Unfavorable evidence has to be considered, discussed, and the theory is improved when it is modified to such an extent that it cannot be falsified by the originally disturbing data. A lawyer argues for a case, whereas scientists search for truth: they have no defendants.

What is good legal practice is often bad science. A legal document could be written in such a way that it has a flexibility in order to respond to any unforeseeable circumstances. Good science, of course, is a synonym of clarity. Mr. Bird's opus argues for "The Theory of Abrupt Appearance," but I cannot find out what this theory is. In his definition, Bird stated: "The Theory of Abrupt Appearance is defined as scientific interpretation of scientific data postulating origin through discontinuous abrupt appearance in complex form." What is meant by "scientific?" By "discontinuous?" By "abrupt?" By "appearance?" Bird did discuss the definition of science in volume II by criticizing existing definitions, especially the one given by the McLean opinion of a 1982 trial (p. I–20). He took the so-called anti-definitional approach and stated that science

"is best delineated by 'logical inferences from empirical observations'." It is delineated, not defined, and we are left with the loophole "logical inference." Is the inference of a creationist more logical than that of a geochemist? Creationists believe that it is more logical to believe that the world was made in six days, because the words of God are more believable than the words of geochemists who, as humans, are all too likely to have made mistakes on their radiometric dating of rocks. It is such logical inferences that make creationism a "science."

Avoiding the stigmas that have been scientifically falsified, Bird tried to rescue creationism by stating the theory of abrupt appearance is not creationism. "It does not necessitate reference to a creator" (p. I–25). "The theory . . . does not essentially involve appearance 'from nothing' " (p. I–25). "The theory of abrupt appearance does not involve 'kinds' of plants or animals . . . It instead involves 'natural groups' (p. I–26). "The theory . . . does not essentially involve 'catastrophism' or a 'worldwide flood' " (p. I–26). "The theory . . . does not essentially involve a 'young age' of the universe" (p. I–26). By using the fuzzy expressions "necessarily" or "essentially," Mr. Bird cleverly defends the theory against all the facts that falsify the creed of creationism, yet still leave him the leverage of using arguments, such as "sudden appearance of kinds," "catastrophism," et cetera, to support his so-called "theory."

What does the theory "involve" then? (The meaning of the word "involve" is difficult for me to understand.) "The theory . . . involves a concept of discontinuity that the theory of evolution excludes" (p. I–27). "The theory . . . involves . . . the discontinuous abrupt appearance in complex form of the universe, . . . of the first life, . . . of plants and animals" (p. I–28). The theory involves "punctuated equilibria," "stasis" and "sudden appearance" (p. I–69). My friend Stephen Jay Gould, an unabashed defender of Charles Darwin, would find it ironic indeed to find that his one major research contribution to the theory of evolution is now the pillar of the strength holding up the "theory of abrupt appearance?" How could that come about? Mr. Gould is well known both for his sharp wit and his clarity in thinking. How did he miss the "logic inferences" that his "empirical observations" did not support "the theory of evolution" but an alternative theory.

This is lawyer's logic. Using a creationist's argument that there is no such thing as species, there are only "natural groups," one would have to substitute the latter for the former, when he reads Gould, so that: "Most 'natural groups' appear suddenly, and they exhibit no directional change during their tenure on earth. They appear in the fossil record looking much the same as when they disappear." But when Mr. Gould wrote *species,* he meant species. He did not mean that the "natural group" of trilobites appears in the fossil record looking much the same as when they disappear. He did not mean the first "natural group" of ammonites looks very much the same as the last. By denying that existing differences between the first species and last species of a "natural group," Mr. Bird manages to convey the misleading impression that the

trilobites stayed what they were, and that the ammonites stayed what they were. There were no changes, no evolution.

A second familiar trick in debate is to set up a strawman as the only alternative to your own. Charles Darwin was guilty of that. In his recapitulation, he set up creationism, or the Linnaean dogma of the immutability of species, as the strawman, on the side of the only other alternative, which is "the origin of species by means of natural selection, or the preservation of the favoured races in the struggle for life."

Darwinian theory of evolution has two themes: common descent and natural selection. Darwin marshalled evidence for mutability in favor of his postulates of common descent. His arguments have demolished the creationism. However, geological evidence, of his time and since then, has always argued against his central theme of natural selection through biotic interactions. Yet Darwin won his followers because he misled them into the belief that there was no alternative to natural selection other than creationism.

Mr. Bird is using this Darwinian trick: The candidates of the two-party system are the Darwinian Theory of Evolution and the "Theory of Abrupt Appearance." A vote against Darwin is a vote for "Abrupt Appearance." Mr. Bird had more than 2000 quotations, mostly from scientists presenting data or evidence, not against the general concept of species evolution, but against the Darwinian version of the theory. Using the strawman tactic, all those prominent scientists, including many Nobel laureates and leading biologists, were paraded as witnesses in support of "The Theory of Abrupt Appearance."

The book is not entirely without redeeming values. I feel sympathetic with his chapters (in v. 2) on the current educational bias, on establishment discrimination against minority opinions, on academic freedom. I do think the "Theory of Abrupt Appearance" should be shown to be what it is. One learns what good science, good logic is by studying case histories of bad science, bad logic. This can be and is done by biologists teaching today, as the majority opinion of the Supreme Court stated. Meanwhile, academic freedom is no license for "equal time." Biology teachers should not be forced to give equal time to good science and bad science.

To summarize, I regret that I spent time writing this review. My time has not been put to productive use. If my friends would like to amuse themselves in their spare time, they might want to borrow a copy of Mr. Bird's book from the library to see the degradation of science into a game of legal debate. I shall never feel the urge to own such a volume, although creationists may want to do so.

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