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Review

Reviewed Work(s): *Monkey Trials & Gorilla Sermons* by Peter J. Bowler

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endeavor will convince members of the opposite camp to change sides. If Smith and Sullivan had actually brought some modern developmental biology into their discussion, they probably still wouldn't have convinced any scientific creationists or intelligent designists, but they would have done a better job in informing their audience of what evolutionary science really is.

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PETER J. BOWLER, *Monkey Trials & Gorilla Sermons*, Cambridge, Massachusetts: Harvard University Press, 2007, 256 pp., \$24.95.

Ernest William Barnes, Canon of Westminster Abbey and later Bishop of Birmingham, preached from Westminster's pulpit in the early 1920s what the popular press called his "gorilla sermons". Barnes endorsed the Modernist view commonly held among the liberal branch of the Anglican Church, according to which evolution could be seen as the unfolding of the divine plan of creation. This, in turn, implied that humans had a crucial role to play, as contributors to the continued process of progressive evolution. However, Barnes complained in his sermons, Christians were paying lip-service to the idea of evolution without fully confronting its implications for their faith, particularly the rejection of the old idea of original sin. Human sinfulness was simply a relic of our animal ancestry: "man is not a being who has fallen from an ideal state of innocence, [but] an animal slowly gaining spiritual understanding and with the gain rising far above his distant ancestors" (Barnes, 1927; cited in *Monkey Trials*, p. 170). Barnes was scientifically knowledgeable; he had taught mathematics at Cambridge before being ordained as a priest. In 1933 he published an extensive treatise, *Scientific Theory and Religion*. According to Barnes, God governed the world solely through law, without miracles, which meant rejecting beliefs such as the virgin birth of Christ and the Resurrection. Thus, not all of his ideas fared well among his fellow Anglicans, much less among Roman Catholics or other Christians.

Peter J. Bowler, a professor of history of science at Queen's University in Belfast, is a distinguished historian of biology, who has written extensively, including several books, about the history of Darwinism and related topics. Bowler proclaims himself "a pretty hard-line skeptic on religious matters" (p. 3 and elsewhere), but seeks to present a balanced historical account of the perceived conflict between science and religion, and, more specifically, between the theory of evolution and the Christian faith. Creation fundamentalists and extreme Darwinists see only black and white alternatives, but the history of the engagement of Christianity with evolution shows that "a whole range of alternative positions have been explored, establishing a continuous spectrum of opinion" (p. 4). Indeed, as Bowler notes, many scientists are deeply religious and many religious thinkers accept evolution.

One early event in the history of the conflict between evolution and Christianity is the Oxford meeting of the British Association for the Advancement of Science in 1860 at which, according to a narrative frequently repeated among evolutionists, Thomas Henry Huxley thrashed Bishop Samuel Wilberforce. Bowler points out that it is far from clear that such narrative is accurate. Indeed, I will add, this matter has been best analyzed by Adrian Desmond in his authoritative *Huxley. From Devil's Disciple to Evolution's High Priest* (1994). Desmond shows that there are three versions of the events: Huxley's, who proclaimed his dramatic victory in a letter to Darwin and

elsewhere; the botanist Joseph Hooker's, whose father-in-law, J.S. Henslow presided over the meeting, and who claimed that his critical comments of Wilberforce were those that counted the most and greatly impacted the audience; and Wilberforce's, who was convinced he had smashed Huxley and bearing "no malice" versified a narrative of the events including Darwin's theory. According to Desmond, there were between seven hundred and one thousand spectators at the event. This fact is astonishing and tells how much social impact Darwin's *Origin of Species* had after its publication in 1859, and how fast this impact occurred. In contrast, only 35 or so people had been present when the theory of natural selection was presented at a meeting of the Linnaean Society of London one year earlier, in 1858, in a joint communication by Charles Darwin and Alfred Russel Wallace, and no questions were raised or comments made.

The apparent contradiction between a literal interpretation of the Bible and the theory of evolution has been a source of conflict between evolution and Christianity. James Ussher, archbishop of Armagh, famously calculated that the world was created over six days starting on October 23rd of the year 4004 B.C. But not all Christians take the narrative of creation literally, nor that Noah's flood was a universal event, during which all fossils were deposited. The "argument from design" is a second source of religious objections against evolution. William Paley in his *Natural Theology* of 1802 had said that the precise functional design of all organisms evinces that they have been designed by an omnipotent Creator. Paley's argument from design is two-tined. The first prong asserts that humans, as well as all sorts of organisms, in their wholes, in their parts, and in their relations to one another and to their environment, cannot have come about by chance, but rather manifest to have been designed for serving certain functions and for certain ways of life. The second prong of the argument is that only an omnipotent Creator could account for the perfection and functional design of organisms. For many people of faith, however, Darwin's natural selection provided a satisfactory scientific account of the "design" of organisms. A third area of concern for Christians relates to the human soul. If humans are distinct from other animals because they are endowed with an immortal soul, how could they have evolved from animals lacking a soul?

Bowler's analytical narrative notes the times and places when one or other or several of the three grounds of argument – young Earth, design, and soul – have played a major role in the opposition against evolution. By the late nineteenth century and into the early decades of the twentieth century, many religious authors had found an accommodation with the theory of evolution by accepting the old age of the Earth and the fact of evolution, but postulating God's special creation of the soul. However, some American evangelicals remained all along suspicious of the idea of evolution, and initiated a campaign to prevent evolution from being taught in the schools, which started in earnest in 1921. The "Monkey Trial" of 1925 in Dayton, Tennessee, saw a confrontation between William Jennings Bryan, a three-times unsuccessful candidate of the Democratic party for the presidency of the United States, and the noted self-confessed agnostic lawyer Clarence Darrow, representing the high school teacher John T. Scopes, whose defense was undertaken by the American Civil Liberties Union. Scopes acknowledged to have violated Tennessee's law prohibiting the teaching of evolution in the public schools. Other states passed similar laws. The Supreme Court of the United States, in 1968, declared unconstitutional any law banning the teaching of evolution in public schools. Thereafter, Christian fundamentalists introduced legislation in a number of state legislatures ordering that the teaching of "evolution science" be balanced by allocating equal time to "creation science", which proposes that all kinds of organisms abruptly came into existence when God created the universe, that the world is only a

few thousand years old, and that the biblical Flood was an actual event that only one pair of each animal species survived. In the 1980s, Arkansas and Louisiana passed statutes requiring the balanced treatment of evolution science and creation science in their schools. The Supreme Court of the United States in 1987 ruled such statutes unconstitutional because, by advancing the religious belief that a supernatural being created humankind, they impermissibly endorse religion.

The most recent confrontation between creationism and the theory of evolution in the courts of law involves the concept of intelligent design (ID). In the 1990s, several authors in the United States revived Paley's argument from design, but modified the second prong of the argument by referring to an unspecified "intelligent designer", thus avoiding explicit reference to God, so that the argument from design could be taught in the public schools as an alternative to evolution. On December 20, 2005, John E. Jones III, Federal Judge for the Middle District of Pennsylvania, issued a 130-page-long decision (*Kitzmiller v. Dover Area School District*) declaring that "The overwhelming evidence at trial established that ID is a religious view, a mere re-labeling of creationism, and not a scientific theory ... ID is not supported by any peer-reviewed research, data, or publications."

Bowler sees grounds for reconciliation between the Christian faith and evolution in the work of recent science-savvy religious scholars, such as Arthur Peacocke, John Polkinghorne, Holmes Rolston III, John F. Haught, and Keith Ward. These authors "see that the central role played by suffering in the world may be just what we should expect if God had relinquished His control over nature in order to give His creatures a degree of freedom within their world" (p. 226). He quotes Polkinghorne to this effect, and comments: "Powerful stuff, even for a nonbeliever like myself. Here is a totally different vision of the relationship between God, humanity, and nature to that offered by the fundamentalists ... It is a God who participates in the human drama and in the drama of creation, and if there is any kind of God who makes sense to the convinced Darwinian, this is probably it" (pp. 226-227).

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OLAF BREIDBACH, *Ernst Haeckel: Bildwelten der Natur*, München: Prestel Verlag, 2006, 304 pp., illus., € 78,00/*Visions of Nature: The Art and Science of Ernst Haeckel*, Munich: Prestel Verlag, 2006, 304 pp., illus., \$100.00.

When the young Ernst Haeckel (1834-1919) went to Italy in search of materials for his zoological research in 1859, he encountered the artist Hermann Allmers (1821-1902). Haeckel became seriously involved in landscape painting, to the point that he was tempted to give up science and become an artist himself. Nonetheless he proceeded from Naples to Messina and did the research on radiolarians that launched his academic career at Jena. The artistic aspect of Haeckel's life has by no means passed unnoticed. The artistic license that he took with some of his illustrations has been the topic of much discussion, rarely well-informed. In 1993 a collection of his Italian travel paintings was exhibited at Sassari, Milan, Padua and Naples.

Given that Haeckel was so important a scientist and popular writer it is about time that we had an in-depth study exploring the artistic aspect of his work. As director of the institute and museum housed in what was formerly Haeckel's house in Jena, Olaf Breidbach has been able to draw upon a wealth of materials. The result is an account of