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THE COUNTER-CREATIONISM HANDBOOK

by Mark Isaak
Westport (CT): Greenwood Press,
2005. 330 pages

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Anti-evolutionists have taken aid and comfort from the political resurgence of the religious right as reflected in the 2004 election. "Intelligent design" creationists are aggressively pushing their agenda in nearly every state and hope to foist nothing less than a redefinition of science upon an unsuspecting public. The scientific illiteracy of the American public allows obfuscation of scientific topics such as global warming, embryonic stem-cell research, and evolution by the current administration. Within this context, Mark Isaak has produced a very useful "baloney detector".

The book rebuts over 400 creationist claims that range from clever to silly in straightforward explanations complete with print

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and on-line scientific references. The usual creationist chestnuts are all there, but so are hundreds of other weird ideas that are lesser known. The claims are divided into nine topics: philosophy and theology (33 pages), biology (60 pages), paleontology (40 pages), geology (32 pages), astronomy and cosmology (16 pages), physics and mathematics (10 pages), miscellaneous anti-evolution (4 pages), biblical creationism (44 pages), "intelligent design" (18 pages), and other creationism (2 pages). It is amazing that one person can be knowledgeable over all these diverse fields. The author, a computer programmer with a MS in biology from San Jose State University, is extremely well read on a wide range of topics. He has put a great deal of information at the reader's fingertips. Isaak is editor of the "Index of Creationist Claims" on the website <<http://www.talkorigins.org>>, and this book is an outgrowth of that activity.

The format presents a creationist claim in bold type, then expands it to cite a reference to the claim. This is followed by an eye-catching five-diamond design below which is the scientific rebuttal. Some replies are only a few sentences long; others require several pages. The following is a truncated exchange. Question: "If we are descended from apes, why are there still apes around?" Answer: "Humans and other apes are descended from a common ancestor whose population split to become two (and more) lineages. The question is rather like asking, 'If many Americans and Australians are descended from Europeans, why are there still Europeans around?'" Most topics are easy to follow; however, the explanations of geological dating methods are very technical.

Because the categories are so diverse, even professional scientists will benefit by reading the areas outside their specialties. Did you know that there are several localities where strata from all geological eras exist? Examples given are the Bonaparte Basin of Australia and the Williston Basin of North Dakota. The book also serves as a ready reference to articles you may have read recently, but have



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forgotten where to find them. For example, a computer simulation experiment that showed the evolution of complex organismal features was published in *Nature* in 2003. A check of the index under complexity will lead you to this paper by Lenski and others. Counterarguments to recent news items disparaging peppered moth evolution, Haeckel's embryo drawings, and fraudulent Chinese dinosaur/bird fossils are very usefully included. The book has four photos and four line drawings. The skull photographs on p 107 and the aerial views of flood- and non-flood-shaped terrain on p 239 are particularly effective.

Especially in light of recent endorsements of teaching "intelligent design" by prominent public figures such as President Bush and Senate Majority Leader Frist, the section on "intelligent design" creationism bears special mention. Isaak has some training in bioinformatics and his responses to "intelligent design" creationism are well done and most timely, if a bit repetitive and tedious. This section is most helpful for ideas when composing letters to the editor for local newspapers or for defusing creationist arguments to local school boards.

I have a few quibbles, but they are minor. On page 11, Isaak writes, "Biology without evolution is natural history, not biology." I would point out that it was observations in natural history that led Darwin to the possibility of evolution and that natural history is the study of nature, of which biology is a part. In response to the creationist claim "Evolution says you are descended from a monkey," Isaak does not take the opportunity to point out that no biologist says such a thing. Rather, great apes and humans share a common ancestor. On pages 5 and 205, Isaak calls creationism a theory. It is a religious idea, not a scientific theory. Although there is a section devoted to the scientific method, the steps of that method are not spelled out. No type of creationism utilizes the scientific method, and it is the stated goal of the "intelligent design" creationists to redefine science by allowing supernatural explanations. This would turn science on its head. In the discussion of homology on

page 86, the author should have mentioned that homologous structures come from the same embryonic germ layer and have the same relationship of parts. In refutation of the creationist fabrication of a deathbed conversion by Darwin, the author does not mention a book devoted to tracking down that lie by one of Darwin's biographers, historian James Moore (*The Darwin Legend*, Grand Rapids [MI]: Baker Books, 1994). In a section on the age of the universe, Isaak gives the age of the earth but does not mention that cosmologists are homing in on 13-14 billion years as the age of the universe. These are small matters, and I suspect that a reviewer with a different background might pick up other omissions, but they do not detract from the merits of the book.

This is a very good and useful book, but at \$65 it is much too expensive for the widespread dispersal that it deserves. I encourage the publisher to release an inexpensive paperback version immediately so teachers and concerned parents can own their own copies and will be willing to present them as gifts to school board members. Meanwhile, make sure your local public and school library orders a copy.

The cumulative effect of reading these anti-evolution arguments emphasizes how scientifically ignorant and/or dishonest many creationists are. Unfortunately, since this is a political struggle, not a scientific one, lack of knowledge is not necessarily an impediment in an anti-intellectual culture. It will be interesting to see if science can prevail at the political level in the culture wars with the religious right. Those of us who prefer research to revelation can arm ourselves with the information presented here by Isaak. But we must speak out to influence public opinion, school boards, and politicians. To paraphrase Edmund Burke, the only thing necessary for the triumph of ignorance is for knowledgeable people to do nothing.

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