Later on the same page, Winnick writes (in a footnote), “The word ‘theory’ when used in science is different from its ordinary use. A scientific theory is considered virtually the same as fact.” While the first sentence is correct, one can only stare open-mouthed at the ignorance of the second. A theory is not the same as a fact; otherwise how could one speak of competing scientific theories? Rather, a theory in the scientific sense is a coherent system of explanation for natural phenomena, testable by experiments, that makes predictions and explains observations. Some theories are better supported than others; only the really well-supported theories, such as gravity and evolution, can be considered as similar to facts, keeping in mind that in science every explanation is provisional.

Winnick also claims that “Darwin’s theory was inspired not by science, but by the politics of his time” (p 111). Although it is true that Darwin hit on natural selection by an analogy with Malthus, it is misrepresentation to suggest that his theory was inspired by politics alone. Has Winnick never read the Origin of Species? If so, she would have known that Darwin patiently built his scientific case for evolution on a host of supporting facts, not politics. And her history is wrong, too, since Darwin began his transmutation notebook (the “B” notebook) in 1837, but did not make the connection with Malthus’s essay until 1838.

But then, Winnick is no stranger to misrepresentations. In 2001, she claimed, “I am, however, writing a book about the subject showing how the media and scientific elite has stifled meaningful debate on the subject. In doing so, I am indeed supported ($25 000) by the Phillips Foundation, an organization which takes absolutely no position on the subject of evolution, but which seeks to promote fair and balanced reporting in all subject areas.” However, Wesley Elsberry took a look at the Phillips Foundation web page and found that Winnick’s fellowship was then described as follows: “Project: ‘Examination of How Media and Established Scientists Treat the Subject of Evolution,’ analyzing why there seems to be little tolerance for teaching creationism in America.” (See <http://www.anti-evolution.org/events/pbsevo/wre_prw_20011129.html> for details.) Since then, the Phillips Foundation has altered its web page and the description of Winnick’s project.

Another creationist trick that Winnick uses is credential inflation. Phillip Johnson, a law professor with no biological training, is described as “brilliant.” Ironically, on page 195, Winnick asks, “how likely was it that Alec Baldwin or Kim Basinger or any of the many other glitzy Hollywood stars had ever seriously studied biology or understood Darwin’s theory of evolution by natural selection or ever read anything on the subject other than PFAW press releases?” Offhand, I’d say it is about the same likelihood that Phillip Johnson or William Dembski or David Berlinski has seriously studied biology, but Winnick does not hesitate to tout them as experts.

No creationist saw is too unreliable for Winnick to repeat. Here are a few examples:

A nameless Chinese paleontologist is quoted on page 198 as saying, “in China we can criticize Darwin, but not the government; in America, you can criticize the government, but not Darwin.” Neither Winnick nor others who have used the quote, including Phillip Johnson and Jonathan Wells, have ever identified the paleontologist or provided any corroboration for the anecdote.

On page 122, two brief quotes from mathematicians expressing skepticism about the mathematical feasibility of neo-Darwinism are presented as representing the consensus of the 1966 Wistar Institute Symposium. Winnick says that their dissent was ignored and their objections “faded into oblivion” because of ideological resistance, not considering the possibility that they were mistaken.

Fred Hoyle’s “tornado in a junkyard” objection to current theories of abiogenesis is mentioned on page 172 as if it represented a scientific result rather than his own expression of incredulity and as if no progress had occurred in origins-of-life research in the 25 years between Hoyle’s comment (in his 1983 book The Intelligent Universe) and Winnick’s book.

Liberal Democrat or not, this book cements Pamela Winnick’s reputation as a flack for the Christian right. It is not a fair, reliable, or objective look at the battles between science and religion. It appears to me that Winnick has a bad case of science envy.

T here is no shortage of dinosaur books for children, and this is reflected by Tom Holtz’s admonition on the inside flap that “the world doesn’t need another A-to-Z list of dinosaurs.” Typically, dinosaur books are organized by name, vague groupings of creatures, or by time period, rather than any evolutionary or biological theme. Many of these volumes have passable to excellent art, but are light on scientific content, and more informative books are generally inappropriate for children. What, then, does this new book offer over other popular dinosaur books?

The major strength of Dinosaurs is that Holtz has done an excellent job explaining dinosaur science as a process; that is, how paleontologists understand the biology of dinosaurs through inferences from the fossil record.

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Dinosaurs: The Most Complete, Up-to-Date Encyclopedia for Dinosaur Lovers of All Ages

by Thomas R Holtz Jr, illustrated by Luis V Rey

Reviewed by Randall B Irmis
There are four basic sections of the book: basic principles of dinosaur science; the relationships and major groups of dinosaurs; the evolution of Mesozoic faunas through time; and dinosaur paleobiology; and each is infused with explanations of how science is done. Complex topics are clearly explained in a way that both children and adults will understand. Particularly impressive is that Holtz spends an entire chapter explaining the principles of cladistics, the method by which scientists reconstruct the evolutionary relationships of organisms. Although cladistics is fundamental to modern organismal biology, few popular books (and perhaps no children’s books) tackle the subject in any detail, and Holtz should be applauded for taking the plunge. This explanation is also practical for the reader, because Holtz often refers to cladistics in other sections of the book when explaining the relationships of dinosaurs and how scientists make conclusions about dinosaur paleobiology.

Another advantage of this book over others is the inclusion of sidebars written by a variety of dinosaur experts. These short articles cover topics that are not directly discussed in the main text, including dinosaur growth, diseases, and feeding. Not only do these sidebars broaden the topics discussed in the book, but also they introduce a diversity of opinions and information that wouldn’t be possible with a single author. The quality of these contributions varies (some are more informative than others), but they are superb overall and put the book on a level above most other children’s dinosaur books.

*Dinosaurs* may not be the first book that I’d reach for to teach children about evolution, but it does an excellent job integrating the principles of evolution and natural selection into the discussion of dinosaur topics. Evolution is used to explain how we know the relationships of dinosaurs, provide hypotheses about dinosaur behavior, and explain why different growth strategies might be beneficial. Holtz’s introductory chapter on evolution is short, but it effectively communicates the basic principles of natural selection and concepts like the evolutionary tree of life.

This is one of the best popular dinosaur books I’ve read. Although focused for children, it will also be informative for students and adults. The book is packed with up-to-date and clearly explained information, and the author maintains a website for future updates (<http://www.geol.umd.edu/~tholtz/dinoappendix/>). Given the information content, clear explanations, full-color semi-glossy printing, and hardback binding, this book is an excellent value at the list price of $34.99.

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### The Voyage of the Beetle: A Journey Around the World with Charles Darwin and the Search for the Solution to the Mystery of Mysteries, as Narrated by Rosie, an Articulate Beetle

by Anne H Weaver
illustrated by George Lawrence
Albuquerque (NM): University of New Mexico Press, 2007. 80 pages

**Reviewed by Jason R Wiles**

Its title easily recognizable as a play on that of Darwin’s own volume, Anne Weaver’s *The Voyage of the Beetle* is a fanciful account of the historic circumnavigation from the perspective of Rosie, another passenger on the *Beagle* who happens to be a rose chafer beetle (*Cetonia aurata*).

Those acquainted with books on evolution for young readers will probably, and fondly, recall *The Sandwalk Adventures* (2003), Jay Hosler’s delightful graphic novel in which Darwin is similarly associated with a storytelling arthropod. And while the subject matter and the intended age level may overlap, there are marked differences between these two works. For example, in *Sandwalk*, Mara, a young follicle mite and resident of Darwin’s left eyebrow, is unfailingly respectful to Darwin, calling him “sir” while she wrestles with his insistence that he is not, as she has always believed, an all-powerful god called “Flycatcher”, an allusion to his moniker among the *Beagle*’s crew. Mara listens raptly as Darwin explains his theory of natural selection and debunks misconceptions about evolution such as, for example, that individuals (rather than populations) evolve — a misconception retained in Weaver’s definition of adaptation in *Beetle*’s glossary, which suggests, erroneously, that adaptation in animals is achieved “by learning”.

Rosie contrasts starkly with Hosler’s reverent Mara. She has been a constant, though independent, companion of Darwin since the young naturalist discovered her under a rock, and she rather familiarly calls him Charles — which she prefers over his “silly nickname of Gas.” Fortunately, Rosie followed a most un-beetle-like whim in her decision to forsake a comfortable life among England’s rosebuds to join Darwin in his travels. Otherwise he might never have discovered his solution — descent with modification via natural selection — to “the mystery of mysteries”, the origin of new species.

Darwin is already pondering questions about the diversity of life as the story begins, sometime before the *Beagle*’s embarkation. Even at this point, Rosie hints that she was aware of the workings of evolution, since “beetles have been around for more than 200 million years” and thus “have an ancient and unique vantage point when it comes to the mysteries of nature.”

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