

Evolutionary cladograms and malevolent, straw-men creationists

A review of
Evolution: What the Fossils Say and Why it Matters
by Donald R. Prothero
Columbia University Press,
New York, 2007

John Woodmorappe

This book is so jam-packed with information (and disinformation!) that it would take a separate book to address it. Predictably, Prothero dismisses rejection of evolution as the product of the fear of loss of God, morality, and human uniqueness. This ignores those (myself included) who once reconciled their religion with belief in evolution, but eventually came to realize that the scientific evidence doesn't require acceptance of evolution. He considers creationism claustrophobic (p. 358). Having found it a fascinating intellectual adventure, I couldn't disagree more.

We hear the usual mantra about most religious leaders accepting evolution. This ignores the fact that it is much easier to conform to the pressures of modern thinking than to be out of step with them, and that this is especially true in our age of spineless political and religious leaders. Also, his fellow misotheists Richard Dawkins¹ and Jerry Coyne² have nothing but contempt for such spinelessness.

Same old, same old ...

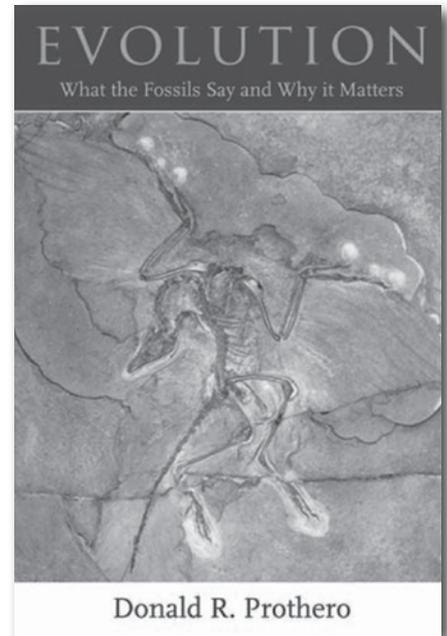
Prothero relies primarily on the decades-old hatchet jobs by anti-creationists. His conception of the creationist exposé of evolution is fixated at old writings of Duane Gish,

and *The Genesis Flood* by Whitcomb and Morris (1961) (p. 64). Gish has refuted these hatchet-job arguments long ago.³ Yet, throughout this book, Prothero whines about creationists being woefully out of date!

To him, the “Omphalos-like” starlight-in-transit theory is the be-all and end-all of creationist thinking on this matter (p. 10), totally ignoring the creationist cosmologies of Ph.D. physicists Russell Humphreys and John Hartnett.⁴ “Created-kind” thinking is just a device to hide evolutionary changes and the “impossibility” of Noah's Ark (pp. 19, 74, 189). (This, among other things, completely ignores all of the evidence that the created kind is broader than the species, and all of the extensive work done in creationist baraminology. It's actually the reverse: taxonomic “splitting” in the hands of anti-creationists is a device to overload the Ark.⁵) Believe it or not, he actually dusts off the old open-system canard about the Second Law of Thermodynamics (pp. 47–48), as if this explains the origin of informational biopolymers.⁶

He tells creationists that they must propose something better. Why? Is a disbeliever in astrology required to propose alternative mechanisms by which celestial bodies determine human fates?

The facts bend according to Prothero's needs. Thus, creationism is both non-falsifiable (p. 9), as well as falsified (p. 11). The fossil record is excellent insofar as it supports evolution (p. xx) and poor insofar as it falls short of evolutionary expectations (p. 52). (Studies on the completeness of the fossil record, which he cites and which I have read, do not change the *post hoc* nature of invoking an incomplete fossil record to “explain” a lack of desired fossil evidence.)



Rejecting medical advances (operational science, which is based on observation and experimentation) is supposed to be the same as rejecting evolution in the fossil record (historical science, which is based on inference—not to mention speculation and story-telling). In like manner, rapid, recent speciation is falsely equated with molecules-to-man evolution (p. 113 ff.).

Prothero makes Glenn Morton out to be a hero-martyr for having once professed creationism, and for being “abused and harassed” by creationists after “seeing the light” (p. 350). In actuality, when Morton's ideation was always strongly pro-evolutionary-uniformitarian, even while claiming to be a creationist, as is obvious from most of his writings. I was an eyewitness at the First International Conference on Creationism in 1986. Morton did nothing but berate creationism, yet he never received anything from creationists except polite disagreement. Persecution is going on all right, but it is directed at Darwin doubters of all stripes, as extensively documented by Bergman.⁷

Creationist scientists aren't the only ones bad-mouthed and belittled by Prothero. So are those of his fellow evolutionists with whom he disagrees (pp. 259, 262, 335).

Out-of-context and “quote-mining” red herrings

When all else fails, dissemble against an unwelcome fact by calling it “quote mining”, or out of context. Evolutionists try to muddy the waters by making these accusations regularly, and Prothero plays the same game.

For example, creationists have long quoted evolutionists who say that fossil ancestors do not usually exist, or cannot be recognized as such in the fossil record. Prothero objects to this—all because “even the most hard-core cladists do not doubt that ancestors existed!” (p. 135). Furthermore, all cladists continue to believe in evolution. He is clearly trying to confuse the issue by bait-and-switch tactics and by playing semantic games. The issue is not whether cladists continue to believe in evolution (Who ever said that they didn’t? The whole point of citing them is that they *do*—they are hostile witnesses). Rather, it’s whether they believe in evolution because of the evidence or in spite of it. Also, what difference does it make if an evolutionist believes that ancestors existed if, by his own admission, they (usually) cannot be known?

Design misrepresented and hand-waved off

Prothero trots out the standard examples of poor design (e. g. the panda’s thumb⁸) and invents some of his own. He complains that the mammalian laryngeal nerve follows a roundabout route in the human thorax (pp. 37–38), and that the fins of land-crossing and sea-bottom-sweeping fish are jury rigged (pp. 222–224). Apart from the presumption of judging of what a Creator would (not) make, it is unclear why good design necessarily entails the shortest possible nerve, or why a usually water-supported body should have elaborate or specialized appendages just to skirt the sea bottom or to amble briefly on land. In any case, poor design arguments are a red herring, designed to confuse the issue, which is not the (opined) quality of the design, but the *origin* of the design.

We hear the hoary and bogus stadium-filling argument, or cheating with chance.⁹ That is, a 20,000-seat stadium can be filled 20,000 factorial different ways, each of which is as improbable as the other, but ANY of which would qualify to fill the stadium. The constituents of a medium-sized would-be biomolecule can be arranged in far more than 20,000 different ways, but only a small fraction of these would be compatible with any role in an eventual living thing (specified complexity).

Apparently realizing this, Prothero resurfaces the monkeys-typing-while-edited argument, which ignores the irreducible nature of biological complexity. It would be valid only if, for example, a molecular entity that had 1/10,000 of the essential characteristics of a living thing happened to experience strong favorable natural selection for some reason unrelated to its eventual potential (since evolution doesn’t have foresight), and thus it became common on Earth. A subsequent variant, which happened to be a 2/10,000-of-life molecule, would then similarly have to somehow be strongly favored by natural selection, causing it to largely replace its ancestor, and to become common on Earth. Then repeat this, 9,998 more times.

When all else fails, we again hear the party line about no designer being necessary because there are yet-undiscovered naturalistic processes that will explain everything, no matter how complex. Using this reasoning, why insist that a watch found on the beach was necessarily made by a designer? After all, yet-not-understood processes may exist that make watches out of waves and sand (and watches are far less complex than living things).

Cambrian explosion nonexistence semantics

Prothero makes more straw men when he implies that creationists don’t know about Precambrian microfossils or the Ediacaran fauna, and that they somehow believe that the extant phyla appeared at exactly the same position in the Cambrian. But the microfossils and Ediacaran fauna are irrelevant

because, by Prothero’s own admission, they were obviously not ancestral to the major phyla.

What’s more, Prothero’s own graph (p. 168) shows major jumps in the number of appearing genera, starting at 543 million years ago, and including a precipitous increase at 520 million years ago. Obviously, this time interval is trivial in comparison with the assumed 4.5 Ga age of the earth. If this is not an explosive appearance, then what is? Finally, far from being an outdated myth, Cambrian explosion is recognized by evolutionists, in concept and language, to this day.¹⁰

Prothero takes isolated, enigmatic, chimeric fossils that seem to combine characteristics of extant phyla (e.g. the mollusk-annelid *Neopilina*, p. 192), and tries to pass them off as transitions between those phyla. In fact, many evolutionists had long been unimpressed by *Neopilini*, and some of them have considered its annelid-like metamerism to be superficial.¹¹

Cladistics and transitional forms

Prothero provides a detailed analysis of cladistic thinking (wherein presumed evolutionary relationships are portrayed in terms of branching patterns), and chides creationists (p. 124 ff.) for fostering ancestor-descendant, ladder of life, and missing link conceptions of evolution. He barely acknowledges the fact that evolutionists (not to mention textbooks and media) have long promoted these concepts, and that not a few of them do so to this very day. Besides, more recent creationist research, which he ignores, includes cladistic concepts (for example Remine,¹² published only 16 years ago).

He surveys numerous fossil groups in terms of cladistics, and insists that evolutionary transitions are abundant. He comments:

“Another part of the problem was conceptual: early work on many groups of ungulates focused too much on trying to find primitive ancestors and link them to descendants, ignoring shared derived characters” (p. 300).

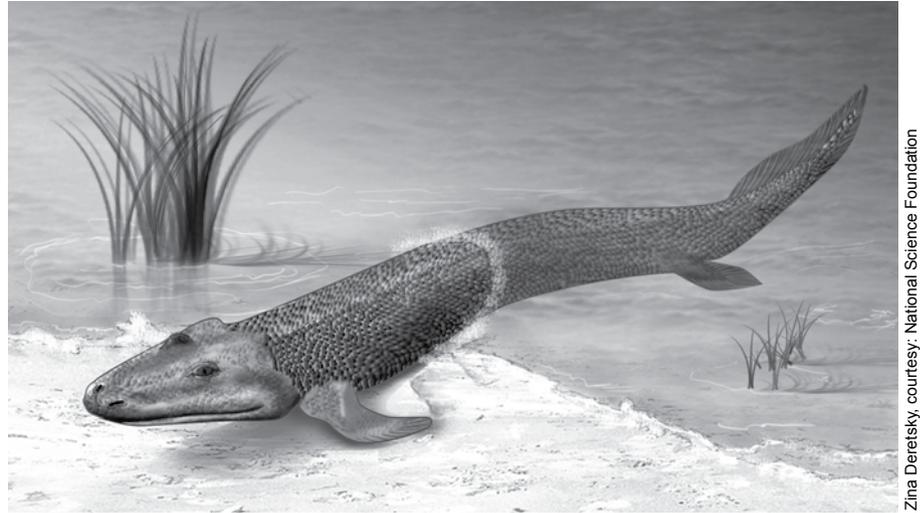
It is obvious that evolutionists have redefined “transition” to a lower standard for the word.

I have surveyed the cladistic analyses of major fossil vertebrate groups in detail elsewhere.¹³ It is obvious that use of cladistic methodology as proof of transition-filled evolutionary change rests upon special pleading. Claimed transitional organisms are almost-always mosaics or chimeras—an assortment of primitive and derived traits. What’s more, when ALL morphological traits are considered (not only the ones used to define the polarity states within the cladogram), it is evident that a large fraction (sometimes majority) of traits goes from primitive to derived and back to primitive again, at least once each, as one proceeds crownward along the cladogram. Finally, traits that don’t fit cladograms at all are covered by “evolspeak” (e.g. specializations, homoplasy¹⁴).

But doesn’t the fact that organisms lend themselves to being arranged in nested hierarchies of polarized traits (that is, cladograms) itself prove that they evolved that way (or at all)? Hardly. Assuming evolution *a priori*, one could construct a cladogram that has an 18-wheel truck as its crown group, and which shows a clearly transition-filled, incremental appearance of “truckness”, beginning with the stem-group unicycle.¹⁵ Note also that the human, elephant, and bat is each a highly-derived fish, just as an 18-wheel truck is a highly-derived unicycle. Such is the *reductio ad absurdum* of cladistic methodology.

Evolutionary ancestors: admittedly virtually non existent

Prothero notes that cladists tend to avoid the concept of direct ancestry because it is not testable, or they use it nowadays as shorthand for potential ancestors. He defines potential evolutionary ancestry, in a cladistic sense, as follows: “To be a true ancestor, the fossil must have nothing but shared primitive characters relative to its descendants. If it has any derived feature not found in a descendant,



Zina Deretsky, courtesy: National Science Foundation

Figure 1. Artist’s conception of the “fishibian” Tiktaalik. Caution, its mode of life is subject to varying interpretations.

it cannot be an ancestor.” (p. 134). Prothero has just given away the store! With some supposed exceptions (such as planktonic microfossils; see below), truly ancestral fossils, as Prothero defines them, are virtually nonexistent! (Bear in mind the usual—if not virtually universal—large assortments of primitive, derived, and specialized features found within each of the fossil organisms that are contained in cladograms).

Invertebrate “transition-filled” evolution

In what appears to be an attempt to impress the unsuspecting reader, Prothero reproduces some figures that he claims show continuous evolution. They do nothing of the sort. Many of these examples are merely within-species evolution (variation) (pp. 180–181, 184–188). Close examination of the figures shows various trait discontinuities and reversals in such things as radiolarians (p. 182), trilobites (p. 188), sand dollars (p. 190), and horseshoe crabs (p. 191).

He cites his own study¹⁶ which supposedly shows unambiguous ancestor-descendant relationships, based on the claim that ocean-bottom sediments are complete. However, even if all this is true, the evolution is only *within one species* (the radiolarian *Eucyrtidium*¹⁷). Otherwise, he admits that microfossils have

poorly-understood biology (including the extent of biologically-determined constraint in skeletal shape during life), problems with homoplasy, and hybridization (pp. 174–175). In fact, the so-called homoplasy in some foraminifers is so great that essentially the same forms re-occur at different stratigraphic horizons, supposedly evolving repeatedly.¹⁸ Homoplasy is a huge problem for evolution but is powerfully consistent with Creation, being part of the *biotic message* (Remine¹⁹) that living things show features that point to a single designer but also thwart naturalistic explanation of the design (i.e. evolution).

Fish to amphibian evolution

This subject is notorious for its evolutionistic triumphalism and propaganda. In actuality, ostensibly amphibian traits appear (and disappear) in fits and starts.²⁰ Ironically, using only the information provided by Prothero (p. 226), it is clear that the much-ballyhooed *Tiktaalik* is millions of uniformitarian years older than its less-derived (that is, more fish-like) cladistic precursors. However, other accounts have given different uniformitarian dates for *Tiktaalik*. (In any case, Prothero elsewhere dismisses the “wrong age” of transitional forms (p. 263)—an act of convenient special pleading.)

Tiktaalik's morphology is itself amenable to various interpretations.²¹ Instead of being a "fishapod", *Tiktaalik* may have been an unusual fish whose adaptations served to resist strong currents on the sea bottom.²²

Prothero supposes that embryological development can be used to trace the course of evolutionary history, and he cites the pharyngeal pouches in human embryos (pp. 108–111). (This is clearly special pleading: supposedly fish-like traits matter, but absent fish-like traits apparently don't matter.) While discussing the fish-amphibian transition, he mentions (p. 229) the mystery of forms with 7–8 digits (instead of 5), and contends that the puzzle was solved by an embryological study²³ which allows for development to shut down when 5 digits are produced. Not so fast. The cited study makes it obvious that embryological information has been interpreted in many different ways in reference to the tetrapod limb, and there are evolutionists who point out that embryological stages can only be interpreted *post hoc* in reference to previously-inferred evolutionary change.²⁴ Some evolutionists even reject the premise that embryological development provides any substantive information about the course of tetrapod-limb evolution.²⁵

Ironic to Prothero's supercilious dismissal of a gap-filler creating two new gaps per creationist contentions (p. 126), this is a very legitimate consideration whenever the two resulting gaps are significant.²⁶ In fact, the evolutionist Clack verbalizes exactly the same reasoning with reference to the constituents of the fish-amphibian transition.²⁷

Human evolution and "almost human" chimps

Prothero's treatment of this subject is exceptionally naïve. He engages in straw-man-burning tactics by ignoring detailed recent creationist research on this subject, and instead bashes decades-old semi-popular materials. He glosses over practically all of the ambiguities and controversies in human evolution. Prothero makes

humans out to be the third ape, and greatly exaggerates the significance of such things as chimp sign language. (The latter may or may not signify even rudimentary linguistic reasoning in chimps.). He repeats the hackneyed 97.6% human-chimp DNA identity myth (p. 346). Predictably, he spins the Piltdown Man hoax as an example of the self-corrective properties of evolutionary science—omitting the fact that it took only 40 years to expose, despite the amateurish forgery.

The malevolent, dangerous creationist?

There is an increasing tendency for Christophobes to smear those who disagree with them as bigots and threats. In like manner, many evolutionists are now demonizing creationists and ID members as malevolent and dangerous. Prothero also parrots this line (Ch. 16)—even, believe it or not, making the amazing assertion that creationists are out to abolish many fields of science (pp. 352–353), ignoring that most fields were *founded* by creationists, thanks to their plain interpretation of Scripture.²⁸ Yet he finds the audacity to accuse creationists of lying (even citing Proverbs 12:22; p. 349)!

The notion that creationists—who are a small minority—could possibly be a threat to anyone is beyond laughable—considering such facts as the control of academia by leftists, humanists, and evolutionists, and the unmistakably evolution-cheerleading character of the mass media. As noted by the cited book by Bergman, the shoe is on the other foot.

Placed in a broader context, the real danger to free expression and free inquiry comes from the political left, with its activist judges who invent and dis-invent human rights by judicial *fiat*, and the chilling effect of its campus speech codes and criminalization of "hate speech" (guess who defines it) and "thought crimes" (sometimes even the questioning of dangerous man-made global warming), etc.

Conclusion

Prothero's work, notwithstanding its detail, is nothing new. Will we ever live to see the day that evolutionists stop being so narrow-minded and arrogant, and at least recognize the intellectual legitimacy of those who disagree with them?

References

1. E.g. in Dawkins' TV diatribe against theistic religion called, "The root of all evil?" (broadcast on Channel 4, 16 January 2006), he said, "Oh but of course the story of Adam and Eve was only ever symbolic, wasn't it? Symbolic?! Jesus had himself tortured and executed for a symbolic sin by a non-existent individual. Nobody not brought up in the faith could reach any verdict other than barking mad!"
2. E.g. see Coyne's derogatory treatment of theistic anticreationists Kenneth Miller and Karl Gibertson, *Seeing and Believing: The never-ending attempt to reconcile science and religion, and why it is doomed to fail*, *The New Republic*, 4 February 2009.
3. Gish, D.T., *Creation Scientists Answer Their Critics*, Institute for Creation Research, El Cajon, CA, 1993.
4. See for example the introductory *Creation Answers Book*, ch. 5.
5. Woodmorappe, J., *Noah's Ark: A Feasibility Study*, ch. 1, Institute for Creation Research, El Cajon, CA, 1996.
6. Thaxton, C.B., Bradley, W.L. and Olsen, R.L., *The Mystery of Life's Origin*, Philosophical Library Inc., New York, 1984, ch. 8; available online <www.ldolphin.org/mystery/index.html>.
7. Bergman, J., *Slaughter of the Dissidents*, Leafcutter Press, WA, 2008; see review by To, L., *J. Creation* **23**(2):37–40, 2009.
8. Long ago refuted—see Woodmorappe, J., *The Panda thumbs its nose at the dysteleological arguments of the atheist Stephen Jay Gould*, *J. Creation* **13**(1):45–48, 1999; after Endo, H. *et al.*, Role of the giant panda's "pseudo-thumb", *Nature* **397**(6717):309–310, 1999.
9. Batten, D., Cheating with chance, *Creation* **17**(2):14–15, 1995; <creation.com/chance>
10. Dzik, J., Behavioral and anatomical unity of the earliest burrowing animals and the case of the "Cambrian explosion", *Paleobiology* **31**(3):503–521, 2005.
11. Woodmorappe, J. *Studies in Flood Geology*, p. 181, Institute for Creation Research, El Cajon, CA, 1999.
12. Remine, W.J., *The Biotic Message*, St. Paul Science, MN, 1993.

13. Woodmorappe, J., Bird evolution: discontinuities and reversals, *TJ (J. Creation)* 17(1):88–94, 2003. From there, check the references to my earlier works on the cladistics of major vertebrate groups.
14. “Homoplasy” is the occurrence of similar features/traits in organisms that are not related by common ancestry such as to “explain” the sharing of the common trait. For example, the incredible similarities of placental and marsupial moles, anteaters, rats, etc.
15. Woodmorappe, J., Walking whales, nested hierarchies, and chimeras: do they exist? *TJ (J. Creation)* 16(1):111–119, 2002.
16. Prothero, D.R. and Lazarus, D.B., Planktonic microfossils and the recognition of ancestors, *Stemmatic Zoology* 29(2):119–129, 1980.
17. Prothero, ref. 16, pp. 125–128.
18. Lazarus, D. B. and Prothero, D.R., The role of stratigraphic and morphologic data in phylogeny, *J. Paleontology* 58(1):163–172, 1984.
19. Remine, ref. 12, p. 529. See convergence.
20. Lamb, A., *Livoniana*—have they (finally) found a missing link? *TJ (J. Creation)* 16(1):4–6, 2002. See also Garner, P., The fossil record of “early” tetrapods, *TJ* 17(2):111–117, 2003. Shubin and Alberch, ref. 23.
21. Mitchell, C., Is the fish really our ancestor? *J. Creation* 23(1):29–32, 2009.
22. Holmes, B., Meet your ancestor, *New Scientist* 191(2586):35–39, 2006.
23. Shubin, N.H. and Alberch, P., A morphogenetic approach to the origin and basic organization of the tetrapod limb, *Evolutionary Biology* 20:319–387, 1986.
24. Shubin and Alberch, ref. 23, pp. 374, 379.
25. Shubin and Alberch, ref. 23, pp. 324–327, 328.
26. Woodmorappe, J., Does a “transitional form” replace one gap with two gaps? *TJ (J. Creation)* 14(2):5–6, 2000. In addition, a fossil discovery can create new gaps instead of filling a gap.
27. Sarfati, J., *Tiktaalik roseae*—a fishy “missing link”, *J. Creation* 21(1):53–57, 2007; <creation.com/tiktaalik>. Clack notes the sharp discontinuity between *Acanthostega* and *Tiktaalik*.
28. Harrison, P., *The Bible, Protestantism, and the Rise of Natural Science*, Cambridge University Press, Cambridge, MA, 1998; see review by Weinberger, L., *J. Creation* 23(3):35–38, 2009.

Errata

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Herrmann, R.A., The two meanings for modern intelligent design. On p. 65, second column, line 7, the superscript 28–30 should read 26–28. On p. 67, first column, line 5, the superscript 39 should read 36.

Spencer, W., Ganymede: the surprisingly magnetic moon. On p. 8, second column, second paragraph, line 5, “16.7 Earth days” should read “7.2 Earth days”.

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Roth, A.A., “Flat gaps” in sedimentary rock layers challenge long geologic ages, pp. 76–81. The paraconformities in figures 4, 7 and 11 should be indicated as shown below.



Figure 4.



Figure 7.



Figure 11.