LITERATURE REVIEWS

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CAN SCIENCE REFUTE DESIGN?

Why Intelligent Design Fails: A Scientific Critique of the New Creationism. Matt Young & Taner Edis, editors. 2004. New Brunswick, NJ: Rutgers University Press. 238 p. Paper, $39.95.

*Reviewed by Cornelius G. Hunter, Ph.D.**

Intelligent design (ID) theory is not often given a scientific hearing, but in this edited volume the thirteen authors take on the scientific claims of ID from a variety of perspectives. Editors Taner Edis and Matt Young and the other authors marshal arguments from molecular biology, paleontology, information theory, cosmology, archaeology, and forensics in this frontal assault against ID.

The unanimous conclusion is that ID is fundamentally flawed. Much of the criticism, however, does not seem fatal to ID. Niall Shanks and Istvan Karsai argue that complexity can arise from purely local mechanisms. But their examples of Benard cells and wasp nests require a clever apparatus. Wasp nests require wasps and Benard cells require the right conditions. Do these really resolve the question of how complexity can arise?

Likewise, Gary Hurd argues that applying ID theory does not work as advertised in forensics and archaeology. Hurd's conclusion that "The real world is a hard place to sort out" (p 119) seems fair, but again, this does not seem fatal for ID.

Other authors, however, aim directly at the core of ID. Alan Gishlick makes a good argument that the avian wing defies ID. He argues that the fossil record provides good evidence for intermediate designs. ID theorists can argue that the avian wing is not irreducibly complex, or

*Author, *Darwin's God: Evolution and the Problem of Evil*

that the fossils leave out a wealth of detail. But they will need to justify those claims to rebut Gishlick's worthy contribution.

Even more direct is Ian Musgrave's attack on the poster child of ID, the bacteria flagellum. Musgrave agrees the flagellum is irreducibly complex and therefore did not evolve gradually, but he argues it could have evolved indirectly. This means that its components were pre-existing in other bacterial mechanisms, and that they came together to form the flagellum.

But does this really explain the flagellum's origin? First, the evolution of those spare parts, itself, is a mystery. But in addition to this, these spare parts, having evolved for different purposes, now must fit together sufficiently well enough to provide for a new function. It appears that Musgrave has merely shifted the complexity problem upstream.

Musgrave's, Gishlick's and Hurd's contributions are noteworthy. Many of the other authors seem to have stretched the evidence beyond its breaking point. Jeffrey Shallit and Wesley Elsberry, for example, contend that ID is confused in its view that complex biological structures (such as long DNA segments) are improbable. For instance, ID's probability calculations require an estimate of the set of possible structures. But how can we know what that set is? Or again, how can we judge the probability of one-time events?

Here Shallit and Elsberry argue against the obvious. True, these probabilities are difficult to calculate, but we do have substantial scientific knowledge to work from. Certainly, we do not know precisely the bounds of the biological design space or the probabilities of one-time events, but there is little question of what science is telling us. This is something akin to a flat-earther calling for more details after Magellan sailed around the world.

Problems also arise when Gert Korthof appeals to ambiguous data as powerful evidences for evolution. He cites mouse-human chromosome correspondence as "impressive evidence for their common descent" (p 42). But common descent does not require such chromosome correspondence. Likewise, Korthof believes that minor variations of the DNA code "follow the pattern of descent with modification" (p 46). Actually the pattern is ambiguous.

Despite this volume's contention that ID is flawed, there are some points in ID's favor that are hard to deny. Taner Edis writes that "it appears incredible that mere chance and necessity could give rise to intelligence; common sense suggests that intelligence must be a separate

principle in the world" (p 141). And Matt Young admits that the evolution of complexity on earth "is no doubt improbable" (p 27). Victor Stenger writes that "I do not dispute that life *as we know it* would not exist if any one of several of the constants of physics were just slightly different" (p 180, emphasis in original).

Their solution to this problem of improbability is that there could be many worlds in which to run the evolution experiment. As Matt Young points out, "we cannot rule out the possibility that there are other universes besides our own; and these, too, must be included in [ID's probability] calculation" (p 27).

Likewise, Victor Stenger argues that the universe's fine-tuning could simply be due to the luck of the draw. Instead of a universe, there may be a multiverse, and we are here only because this particular universe happened to support the evolution of carbon-based life.

Here the ID critics have finally defeated ID, but at what cost? To dispose of the problems that ID grapples with, they call for faith in unknown, unprovable, and unfalsifiable conjectures of other worlds. Given all the potential universes, with all their galaxies, anything becomes probable.

No longer do we need theories that are likely, they merely need to be not physically impossible.

In the hands of ID critics, science becomes a tool to argue for the unknowable. No longer do we use science to investigate what is likely. We need not constrain ourselves to what we can observe and what current science indicates. Design might be the obvious conclusion, but these critics would replace it with speculations that are neither verifiable nor falsifiable.