Redeeming Darwin: The Intelligent Design Controversy

Dr. Bohlin, as a Christian scientist, looks at the unwarranted opposition to intelligent design and sees a group of neo-Darwinists struggling to maintain the orthodoxy of their position as the evidence stacks up against them. In this article, he summarizes what's happening in academia and the lack of sound scientific basis for their attacks agains intelligent design proponents.

What's All the Fuss?

There's a strange phenomenon popping up around the country. Scientists are stepping out of their laboratories and speaking to the media about something that has them quite concerned. It's not the threat of a new flu pandemic; it's not the threat of nuclear weapons proliferation, or even the possible threat of global warming. It's something called Intelligent Design.

In this article we will explore what has so many people upset about Intelligent Design. To do that we will need to establish just what ID is and what the major complaints are about evolution that may be answered by a theory like ID. We will take a closer look at some of the most common examples of ID from astronomy and biology. Then we will take a closer look at the cultural confusion and reaction to this rather simple hypothesis.

So what are scientists and journalists saying? A *Baltimore Sun* reporter put it this way: "In the border war between science and faith, the doctrine of 'intelligent design' is a sly subterfuge—a marzipan confection of an idea presented in the shape of something more substantial."{1}

In other words, Intelligent Design is little more than a sugar cookie promising more than it can deliver.

A science journal editorial said this: "The attack on Darwinism by supporters of Intelligent Design is a straightforward attack on science itself. Intelligent Design is not science because it proposes a supernatural designer as explanation for evolutionary change."{2}

Uh-oh! Science and the supernatural indeed rarely go well together, at least over the last 150 years. But is that what ID actually says? We'll explore that a little later but for now let's find out what's really at stake in this debate over evolution and Intelligent Design.

One college textbook said this: "Evolution is a scientific fact. That is, the descent of all species, with modification, from common ancestors is a hypothesis that in the last 150 years or so has been supported by so much evidence, and has so successfully resisted all challenges, that it has become a fact."{3}

Let's look at a few reasons why some scientists are skeptical of the confidence shown by so many other scientists about Darwinian evolution.{4}

Is There Scientific Proof for Evolution?

Evolution is always portrayed as a slow gradual process. Organisms are portrayed as so well adapted to their environment that they could only afford to change very slowly. But one of the most dramatic events in earth history is something called the Cambrian explosion. The Cambrian is a period of earth history that many earth scientists and paleontologists estimate to have begun over 540 million years ago.{5}

Instead of slow steady evolutionary change, we see a sudden burst of change. The subtitle to a *Time* magazine article put

it this way: “New discoveries show that life as we know it began in an amazing biological frenzy that changed the planet almost overnight.”{6}

For most of the previous 3 billion years of earth history only single-celled organisms were found. “For billions of years, simple creatures like plankton, bacteria and algae ruled the earth. Then, suddenly, life got very complicated.”{7}

So the appearance of most of the major categories of animals happened in a very short period of time, some say less than five million years, when it should have taken tens and maybe even hundreds of millions of years. One geologist who helped pinpoint the very short time frame of the Cambrian explosion expressed this challenge: “We now know how fast fast is. And what I like to ask my biologist friends is, how fast can evolution get before they start feeling uncomfortable?”{8}

The evolutionary process that biologists study in nature today is far slower than what is found in the Cambrian explosion. This is evidence that doesn’t fit the theory. Yet the Cambrian explosion is left out of most textbooks.

Another problem for evolution is its dependence on mutations to bring about major changes in organisms. But for all our studies of mutations we haven’t seen much change. The late French evolutionist, Pierre Paul Grasse, said, “What is the use of their unceasing mutations? . . . a swing to the right, a swing to the left, but no final evolutionary effect.”{9}

Mutations only produce alternate forms of what already exists. New functions don’t suddenly arise by mutations.

Evidence for Intelligent Design, Part One

Intelligent Design is an intellectual movement that challenges Darwinism and its dependence on random/chaotic processes coupled with selection. If people are not alerted to the fact that Darwinism is less than sufficient, then other theories

are wasting their time. They will never get a fair hearing.

Intelligent Design is also a scientific research program that investigates the effects of intelligent causes, which are effects of high specificity coupled with extremely small probabilities.

Now that was a mouthful. What do I mean by high specificity coupled with small probability? Think of the lottery. Someone always wins the lottery despite the long odds. So improbable things do indeed happen.

But let's make this specific. Let's say your sister wins the lottery. Now that is someone you specifically know; but again someone always wins the lottery so the fact that it's your sister doesn't warrant any special attention.

Now let's make things a bit *less* probable and much *more* specific. Let's say your sister wins the lottery not once but three weeks in a row. Now what are you thinking? Like most people you're thinking something is not right. The same person doesn't win the lottery three weeks in a row.

You suspect cheating. You suspect Intelligent Design. Someone with a clever mind is somehow manipulating the lottery.

In astronomy, it has been assumed for several decades that our earth is not likely to be very special. As huge as the universe is, with billions of galaxies, each with billions of stars, surely there are thousands if not millions of planets like ours that are suitable for life.

But lately, more and more planetary astronomers, astrophysicists, cosmologists, and philosophers are realizing that earth is actually quite unique. The recipe for earth is more than just a planet plus mild temperatures plus water.

Our earth is 93,000,000 miles from the sun. Five percent closer and we would be a hothouse like Venus with no chance

for life. If we were twenty percent farther away, we would be a frozen wasteland like Mars. We're just right. Liquid water is necessary for life and our earth has an abundance all year long.

Evidence for Intelligent Design, Part Two

It's really quite amazing to realize that biologists universally recognize the design of living things. Oxford biologist and atheist Richard Dawkins said on page one of his book *The Blind Watchmaker*: "Biology is the study of complicated things that give the appearance of having been designed for a purpose."{10}

Now notice he said, "give the appearance of having been designed for a purpose." Living things certainly look designed, but according to Dawkins, it's an illusion. He spends the rest of his book trying to show how mutation and natural selection, the "blind watchmaker," has created this illusion.

But he does admit things look designed. Well, if it looks designed, maybe it is.

Michael Behe introduced the concept of irreducible complexity in his book *Darwin's Black Box*. Something is irreducibly complex if it is composed of two or more *necessary* parts. Remove one part and function is not just impaired but destroyed. His well-known example is a mousetrap.

A mousetrap is composed of five integral parts: the platform to which everything is attached, the hammer which does the dirty work, the spring which provides the force, the holding bar to keep the hammer in tension, and finally the catch to keep the holding bar in tenuous position. Remove any one of these parts and the mousetrap is not just less efficient; it ceases to function at all. All five parts are necessary. You can't build a mousetrap by natural selection by adding one

piece at a time because it has no function to select until all five parts are together.

Behe showed that the cell, Darwin's "Black Box," is filled with irreducibly complex molecular machines that could not be built by natural selection. In Darwin's time, scientists could only see the cell under very low power microscopes that told little about what was going on inside. It was a black box. Over the last fifty to sixty years, the cell has been revealing its secrets. We have discovered a maze of complexity and information.

If it looks designed, maybe it is!

ID, Science, Education, and Creation

The legitimacy of Intelligent Design as science was at the heart of a recent federal court case, pitting a group of parents and students against the school board from Dover, Pennsylvania. The Dover School Board adopted a policy that mandated a statement be read before all biology classes, indicating that evolution was a theory that needed critical evaluation and that intelligent design was a rival theory that students could seek information about from the library.

Judge Jones not only struck down the policy as unconstitutional, he went further to declare that ID is not science and was motivated purely by religion since it was just a repackaged creationism. His written opinion was scathing. This of course delighted proponents of evolution and many have declared that ID now is dead.

Judge Jones claimed that ID simply is not science and is religiously motivated; therefore it should not even be mentioned in a high school science classroom.

The first question that should occur to you is, Why does a federal judge with no training in science use his courtroom as a means of determining what is and is not science? This

problem has been referred to as the demarcation problem. How do we demarcate science from non-science? People putting down ID often refer to it as "pseudo-science" or simply "unscientific." But philosopher of science Larry Laudan writes, "If we would stand up and be counted on the side of reason, we ought to drop terms like 'pseudo-science' and 'unscientific' from our vocabulary; they are just hollow phrases which do only emotive work for us."{11}

Judge Jones claims that ID has been refuted by mainstream scientists. He cites the work of Kenneth Miller in particular. This is rather strange indeed. For ID to be refuted means that it has been tested by science and found wanting. If it is testable scientifically to the degree that it can be refuted, then it is science after all. This logical contradiction does not seem to occur to Judge Jones.

ID uses empirical data to demonstrate the plausibility of a design inference. It's as scientific as Darwinism.

Notes

1. Baltimore *Sun*, August 13, 2006.
2. *Cell*, January 13, 2006.
3. Douglas Futuyma, *Evolution* (Sinauer Assoc., Sunderland, Mass., 2005), xv.
4. To learn more about Intelligent Design and Evolution visit our website, probe.org, or call us at 1-800-899-PROB, for information about our new DVD based small group curriculum, "Redeeming Darwin: The Intelligent Design Controversy." Once again we have teemed up with EvanTell to produce a small group curriculum designed to inform the church about Intelligent Design and how to use a conversation about this controversial topic to share the gospel.
5. Meyer, Stephen C., Marcus Ross, Paul Nelson and Paul Chien, 2003, *The Cambrian explosion: Biology's Big Bang in Darwinism, Design, and Public Education*, John Angus Campbell and Stephen C. Meyer, eds., East Lansing, Michigan: Michigan State

University Press, pp. 323-402.
6. *Time*, December 4, 1995 (cover).
7. Ibid., 67.
8. Samuel Bowring, *Time*, 1995, 70.
9. Pierre-Paul Grassé quoted in *The Natural Limits to Biological Change*, Lane P. Lester and Raymond G. Bohlin, Richardson, Texas: Probe Books 1984., p. 88.
10. Dawkins, Richard, *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design*, Nerw York, New York: Norton, 1986.
11. Larry Laudan, (1983) "The demise of the demarcation problem," in Michael Ruse (ed.) *But Is It Science?*, Amherst, Prometheus, 337-350.

© 2007 Probe Ministries

"The Creation/Evolution Controversy is Keeping Me From Believing"

Dear Ray Bohlin,

I read your article Christian Views of Science and Earth History, and at the end it said about how you have been researching about this for twenty years, but still haven't come to a conclusion about it. If (macro)evolution isn't proved true, then why would people involved in science treat it as a fact? Two people who come to my mind are Michael Behe and Phillip Johnson. I guess Behe believes in macroevolution and Johnson doesn't, but they still both support Intelligent Design theory. Does Johnson just not know enough about science, or is Behe perhaps wrong? Maybe I've just become way

too skeptical. I don't like being like this, but it's hard not to be! How can I not let this controversy about evolution keep me from believing? How do you do it? Maybe you just have more faith than I do. I don't know.

Basically, my only question is concerning the age of the earth and universe. I do not consider this the critical issue so I am willing to live with a certain amount of tension here. There are many good Christians, both theologians and scientists who disagree on the time frame of Genesis, so you are not alone.

Macroevolution is treated as fact primarily because it is necessary for a naturalistic world view. If there is no God then some form of evolution must be true. This is why so many evolutionists are not troubled by evolution's problems. They are firmly convinced that some form of evolution has occurred and the problems will be solved some day. Here their faith is in their world view and not necessarily science. Phil Johnson does a good job of talking about this in his first two books, *Darwin on Trial* and *Reason in the Balance*.

Being skeptical is OK. If Christianity is really true, then it can stand up to the scrutiny. I encourage you to continue to ask your questions and seek for answers. I have never been disappointed when I have felt the need to dig a little deper. The Lord won't disappoint you either.

An excellent book you may want to pick up is by Lee Strobel called *The Case for Faith* (Harper Collins/Zondervan). It's a series of interviews with top Christian scholars looking for answers to the toughest challenges to faith. One of the interviews is with Dr. Walter Bradley from Texas A & M about evolution and the origin of life. Because each chapter is a retelling of an interview it's not overly technical but extremely helpful and honest.

I certainly don't feel I have all the answers about the

evolution question either. I am convinced however, that evolution certainly doesn't have all the answers and some of the missing answers are to the most crucial questions such as a workable and observable mechanism of change.

In the past when I was feeling threatened as you are I would frequently need to return to the basics which I knew were true. The facts of Jesus historical existence, the reliability of the New Testament, the historical reliability of his resurrection, and God's clear direction and presence in my life. Then I would combine this with Jesus own confirmation of the historicity of Genesis (see Matt. 19:3-6, Matt. 23: 29-37, and Matt. 24:37-39 and "Why We Believe in Creation") and Paul's clear statement of the creation exhibiting his character in Romans 1:18-20 and it was obvious that something was very wrong with evolution and somehow God's creative fingerprints are evident in the natural world. That would keep me going. Now the more I have studied and probed, the more bankrupt evolution has become and the reasonableness and scientific integrity of design becomes more and more self-evident.

Hope this helps.

Respectfully,

Ray Bohlin

Probe Ministries

"Can You Recommend Good Books

on Intelligent Design?”

Grace and peace to you, Dr. Bohlin:

I am a returning college student and a home-schooling parent. In my classes I find myself facing animosity toward those of us who reject evolution. I want to be able to defend myself in class as well as prepare my children to do the same. I want to be able to say to my children and in class, “I believe [THIS], because [of THIS]; and here’s the difference.” I know there is good information available on Intelligent Design and Creationism, but I simply do not have the ammunition of knowledge and information that I desire.

Unfortunately, with so many works available, I am at a loss as to where to begin. Thus, could you recommend a few? Are there any that force evolutionists to base their critical examinations mainly (or exclusively) upon emotional arguments? (I.e., points that naturalistic “science” cannot honestly ignore or refute.) Alternatively, could you recommend an assortment that, when combined, thwart the mass of evolutionist droning? (And a good order in which to read/study the works.)

I honor you for your desire to become more knowledgeable in this important arena. I wish there were more Christians like you.

Below is a brief annotated bibliography in the order I feel they should be read by someone just starting out.

> *1. For an overview of the many issues and publishing events surrounding this question, you can start with the Probe book Creation, Evolution, and Modern Science, (Kregel, 2000) which I edited. This will introduce you to several topics without going into too much depth. This link will give you some more information.*

2. Darwin On Trial by Phillip Johnson (IVP 1991). Phil Johnson has emerged as the leader of the Intelligent Design movement and here lays out in logical manner some of the important evidential problems with evolution as well as the all important academic and educational problems. See this related article.

3. Reason in the Balance by Phillip Johnson (IVP 1995). Here Johnson lays out just what is at stake in this naturalism vs. theism clash within the culture in law, science, and education. Not his most popular book, but by his own admission, his most important book. See this related article.

4. Icons of Evolution by Jonathan Wells (Regnery, 2000). A superb expose' of the ten most popular evidences for evolution in high school biology textbooks. The evolutionary and educational communities are falling all over themselves trying to explain or discredit this book. They are looking more and more foolish as time goes on. See this related article.

5. Darwin's Black Box By Michael Behe (Free Press, 1996). This is a narrower work explaining the necessity of intelligent design in understanding the molecular workings of the cell. Not as technical as you think. I have a good review of it in Creation, Evolution and Modern Science. See this related article.

6. Intelligent Design by William Dembski (IVP, 2000). Dembski shows how important Design is within a broad perspective across disciplines while also demonstrating the academic rigor of a design hypothesis. See this related article.

7. Defeating Darwinism by Phillip Johnson (IVP, 1997). A short book for students, parents and teachers highlighting the critical thinking skills needed to weave through the mine fields of the creation/evolution controversy. See this related article.

8. The Wedge of Truth by Phillip Johnson (IVP, 2000). Johnson's latest book, providing an update and analysis of the current controversy and an explanation of overall strategy (The Wedge). Insightful and quotable as always.

There are other books to help you in specific areas and anthologies to offer more technical perspectives of important aspects of the controversy, but these should get you started.

There are reviews of books 2-7 on our website in the science section. URLs listed at the end of each description.

Respectfully,

Ray Bohlin
Probe Ministries

Darwin's Black Box

Michael Behe's book Darwin's Black Box *was hailed by Christianity Today as 1996's Book of the Year, with good reason. This is the first book suggesting Intelligent Design that has received such serious attention from the scientific community. Dr. Ray Bohlin, with a background in molecular biology, reviews this book from a perspective as a creationist and scientist.*

 *This article is also available in Spanish.*

Darwin's Black Box: The Biochemistry of the Cell

What do mouse traps, molecular biology, blood clotting, Rube Goldberg machines, and irreducible complexity have to do with

each other? At first glance they seem to have little if anything to do with each other. However, they are all part of a recent book by Free Press titled, *Darwin's Black Box: The Biochemical Challenge to Evolution* by Michael Behe. Michael Behe is a biophysics professor at Lehigh University in Pennsylvania and his book, released last summer, has been causing a firestorm of activity in academic circles ever since.

The stranglehold that Darwinism has had in the biological sciences for decades has already been weakened over the last 30 years due to the new creationist movement and more recently by the push from intelligent design theorists. But Behe's new book may end up being the straw that broke the camel's back. Usually books like these are released by Christian publishers or at least a secular press that is small and willing to take a chance. Also, creationist books are rarely sold in secular bookstores or reviewed in secular publications. *Darwin's Black Box* has gained the attention of evolutionists not normally accustomed to responding to anti- evolutionary ideas in the academic arena. People like Niles Eldredge from the American Museum of Natural History, Daniel Dennett, author of *Darwin's Dangerous Idea*, Richard Dawkins of Oxford University and author of *The Blind Watchmaker*, Jerry Robison of Harvard University, and David Hull from the University of Chicago have all been forced to respond to Behe either in print or in person.

In summary, the reason for all this attention is that they readily admit that Behe is clearly a reputable scientist from a reputable institution and his argument is therefore more sophisticated than they are accustomed to hearing from creationists. Mild, backhanded compliments aside, they unreservedly say he is flat wrong, but they have gone to much greater lengths in the literature, from the podium, and in the electronic media to explain precisely why they think he is wrong. Creationists and intelligent design theorists are

usually dismissed out of hand, but not Behe's *Darwin's Black Box.*

Behe's simple claim is that when Darwin wrote *The Origin of Species*, the cell was a mysterious black box. We could see the outside of it, but we had no idea of how it worked. In *Origin*, Darwin stated,

> *If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down. But I can find no such case.*

Simply put, Behe has found such a case. Behe claims that with the opening of the black box of the cell through the last 40 years of research in molecular and cell biology, there are now numerous examples of complex molecular machines that absolutely break down the theory of natural selection as an all-encompassing explanation of living systems. The power and logic of his examples prompted *Christianity Today* to name *Darwin's Black Box* as their 1996 Book of the Year. Quite a distinction for a book on science published by a secular publisher!

In this essay I will be examining a few of Behe's examples and detailing further just how the scientific community has been reacting to this highly readable and influential book.

Irreducible Complexity and Mousetraps

Behe claims the data of biochemistry argues strongly that many of the molecular machines in the cell could not have arisen through a step-by-step process of natural selection. In contrast, Behe claims that much of the molecular machinery in the cell is irreducibly complex.

Let me first address this concept of irreducible complexity. It's really a quite simple concept to grasp. Something is

irreducibly complex if it’s composed of several parts and each part is absolutely necessary for the structure to function. The implication is that such irreducibly complex structures or machines cannot be built by natural selection because in natural selection, each component must be useful to the organism as the molecular machine is built. Behe uses the example of a mousetrap. A mousetrap has five parts that are absolutely necessary for the mousetrap to function. Take any one of these parts away and the mousetrap can no longer catch mice.

The mousetrap must contain a solid base to attach the four other parts to, a hammer that clamps down on the mouse, a spring which gives the hammer the necessary power, a holding bar which holds the now energized hammer in position, and a catch to which the holding bar is secured, holding the hammer in coiled tension. Eventually, the jiggling action of a mouse, lured to the catch by a tasty morsel of peanut butter, causes the holding bar to slip away from the catch, releasing the hammer to spring down upon the unsuspecting mouse.

It’s fairly easy to imagine the complete breakdown of functionality if you take away any of these five parts. Without the base, the other parts can’t maintain the proper stability and distance from each other to be functional; without the spring or hammer, there is no way to actually catch the mouse; and without both the catch and holding bar, there is no way to set the trap. All the parts must be present and accounted for in order for a mouse to be caught and the machine to function at all.

You can’t build a mousetrap by Darwinian natural selection. Let’s say you have a factory that produces all five parts of a mousetrap but uses them for different purposes. Over the years as the production lines change, leftover parts of no-longer-made contraptions are put aside on shelves in a storage room. One summer, the factory is overrun with mice. If someone were to put his mind to it, he might run by the storage room and

begin to play around with these leftover parts and just might construct a mousetrap. But those pieces, left to themselves, are never going to spontaneously self-assemble into a mousetrap. A hammer-like part may accidentally fall from its box into a box of springs, but it’s useless until all five parts are assembled so they can function together. Nature would select against the continued production of the miscellaneous parts if they are not producing an immediate benefit to the organism.

Michael Behe simply claims that we have learned that several of the molecular machines in the cell are just as irreducibly complex as a mousetrap and, therefore, just as unable to be constructed by natural selection.

The Mighty Cilium

One of Behe’s examples is the cilium. Cilia are tiny hair-like structures on the outside of cells that either help move fluid over a stationary cell, such as the cells in your lungs, or serve as a means of propelling a cell through water, as in the single-celled paramecium. There are often many cilia on the surface of a cell, and you can watch them beat in unison the way a stadium crowd performs the wave at a ball game.

A cilium operates like paddles in a row boat; however, since it is a hair-like structure, it can bend. There are two parts to the operation of a cilium, the power stroke and the recovery stroke. The power stroke starts with the cilium essentially parallel to the surface of the cell. With the cilium held rigid, it lifts up, anchored at its base in the cell membrane, and pushes liquid backwards until it has moved nearly 180 degrees from its previous position. For the recovery stroke, the cilium bends near the base, and the bend moves down the length of the cilium as it hugs the surface of the cell until it reaches its previous stretched out position, again having moved 180 degrees back to its original position. How does this microscopic hair-like structure do this? Studies

have shown that three primary proteins are necessary, though over 200 others are utilized.

If you made a cross-section of a cilium and made a photograph of it with an electron microscope, you would see that the internal structure of the cilium is composed of a central pair of fibers surrounded by an additional 9 pairs of these same fibers arranged in a circle. These fibers or microtubules are long hollow sticks made by stacking the protein tubulin. The bending action of cilia depends on the vertical shifts made by these microtubules.

The bending is caused by another protein that is stretched between the pairs of tubules called nexin. Nexin acts as a sort of rubber band connector between the tubules. As the microtubules shift vertically, the rubber band is stretched taut, the microtubules continue to shift if they bend. Whew! I know this is getting complicated, but hang with me a little longer. The microtubules slide past each other by the action of a motor protein called dynein. The dynein protein also connects two microtubules together. One end of the dynein remains stationary on one microtubule, while the other end releases its hold on the neighboring microtubule and reattaches a little higher and pulls the other microtubule down.

Without the motor protein, the microtubules don’t slide and the cilium simply stands rigid. Without nexin, the tubules will slide against each other until they completely move past each other and the cilium disintegrates. Without the tubulin, there are no microtubules and no motion. The cilium is irreducibly complex. Like the mousetrap, it has all the properties of design and none of the properties of natural selection.

Rube Goldberg Blood Clotting

Rube Goldberg was a cartoonist in the earlier part of this

century. He became famous for drawing weird contraptions that must go through many seemingly unnecessary steps in order to accomplish a rather simple purpose. Over the years, some evolutionists have alluded to living systems as Rube Goldberg machines as evidence of their construction by natural selection as opposed to being designed by a Creator. Things such as the Panda's thumb and the intricate workings of the many varieties of orchids are said to be contrived structures that an intelligent creator surely would have found a better way of doing.

If you have never seen a cartoon of a Rube Goldberg machine, let me describe one for you from Mike Behe's book, *Darwin's Black Box*. This one is titled the "Mosquito Bite Scratcher." Water falling off a roof migrates into a drain pipe and collects into a flask. In the flask is a cork that floats up as the glass fills. Inserted in the cork is a needle that eventually rises high enough to puncture a suspended paper cup filled with beer. The beer then sprinkles onto a nearby bird that becomes intoxicated and falls off its platform and onto a spring. The spring propels the inebriated bird onto another platform where the bird pulls a string (no doubt mistaking it for a worm in its intoxicated state). The pulled string fires a cannon underneath a small dog, frightening him and causing him to flip over on his back. His rapid breathing raises and lowers a disk above his stomach which is attached to a needle positioned next to a mosquito bite on a man's neck allowing the bite to be scratched, causing no embarrassment to the man while he talks to a lady.

Well, this machine is obviously more complicated than it needs to be. But the machine is still designed and as Behe claims, it is also irreducibly complex. In other words, if one of the steps fails or is absent, the machine doesn't work. The whole contraption is useless. Well, there are a few molecular mechanisms in our bodies that are very similar to Rube Goldberg machines and therefore irreducibly complex. One is

the blood-clotting cascade. When you cut your finger an amazing thing happens. Initially, it begins to bleed, but if you just leave it alone, after a few minutes, the flow of blood stops. A clot has formed, providing a protein mesh that initially catches the blood cells and eventually closes up the wound entirely, preventing the plasma from escaping as well.

This seemingly straightforward process involves over a dozen different proteins with names like thrombin, fibrinogen, Christmas, Stuart, and accelerin. Some of these proteins are involved in forming the clot. Others are responsible for regulating clot formation. Regulating proteins are needed because you only want clots forming at the site of a wound not in the middle of flowing arteries. Yet other proteins have the job of removing the clot once it is no longer needed. The body also needs to eliminate the clot when it has outlived its usefulness, but not before.

Now it’s easy to see why some, when considering the blood-clotting cascade, wonder if a Creator could have devised something simpler. But that assumes we fully understand the system. Perhaps it absolutely needs to be this way. Besides, this doesn’t in any way diminish the fact that even a Rube Goldberg machine is designed just as the blood clotting system seems to be.

Silence of Molecular Evolution and the Reaction

Clearly, the irreducible complexity inherent in many biochemical systems not only precludes the possibility that they evolved by Darwinian natural selection, but actually suggests the strong conclusion that some kind of intelligent design is necessary. Behe makes a very significant point by recognizing that the data that implies intelligent design doesn’t necessarily mean one knows who the designer is. Inferring that intelligent design is present is a reasonable

scientific conclusion. Planetary astronomers, for example, claim that we will be able distinguish a radio signal from space that was sent by an intelligent civilization from the surrounding radio noise even though we won't initially understand it and won't know who sent it.

Yet the astounding complexity of the cell has gone largely unnoticed and greatly unreported to the general public. There is an embarrassed silence. Behe speculates as to why; he says,

> *Why does the scientific community not greedily embrace its startling discovery? Why is the observation of design handled with intellectual gloves? The dilemma is that while one side of the elephant is labeled intelligent design, the other side might be labeled God (p.233).*

This may also help to account for another curious omission that Behe highlights, the almost total lack of scientific literature attempting to describe how complex molecular systems could have arisen by Darwinian natural selection. The *Journal of Molecular Evolution* was established in 1971, dedicated to explaining how life at the molecular level came to be. One would hope to find studies exploring the origin of complex biochemical systems in this journal. But, in fact, none of the papers published in *JME* over the entire course of its life as a journal has ever proposed the origin of a single complex biochemical system in a gradual step-by-step Darwinian process.

Furthermore, Behe adds,

> *The search can be extended, but the results are the same. There has never been a meeting, or a book or a paper on details of the evolution of complex biochemical systems (p. 179).*

Behe's sophisticated argument has garnered the attention of

many within the scientific community. His book has been reviewed in the pages of *Nature*, *Boston Review*, *Wall Street Journal*, and on many sites on the Internet. While some have genuinely engaged the ideas and offered serious rebuttal, most have sat back on Darwinian authority and claimed that Behe is just lazy or hasn't given the evolutionary establishment enough time. Jerry Coyne in *Nature* (19 September 1996, pp. 227-28) put it this way:

> *There is no doubt that the pathways described by Behe are dauntingly complex, and their evolution will be hard to unravel. Unlike anatomical structures, the evolution of which can be traced with fossils, biochemical evolution must be reconstructed from highly evolved living organisms, and we may forever be unable to envisage the first proto-pathways. It is not valid, however, to assume that, because one man cannot imagine such pathways, they could not have existed.*

But that's precisely the point; it is not one man but the entire biochemical community that has failed to elucidate a specific pathway leading to a complex biochemical system.

I highly recommend Behe's book. Its impact will be felt for many years to come.

©1997 Probe Ministries