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An Interview with Dr. Russ Humphreys Part 1

by

Doug Sharp, Rich Geer, and John Goertzen

The Revolution Against Evolution is a weekly TV show, produced by Doug Sharp, for public access cable TV channels. This edited transcript is from an interview which was conducted in April, 2001 for one of these shows. See details at the end of the article for ordering the video tape. Those speaking are designated by the following initials: RH = Russ Humphreys, DS = Doug Sharp, and RG = Rich Geer.

DS: Welcome. ... I'm your host Doug Sharp, and we have [with us today] Rich Geer and ... our guest Dr. D. Russell Humphreys from [Albuquerque] New Mexico. And we're glad to have you with us on our show. We've been wanting to do an interview with you for a long time, and we're thankful that you have been able to do this ... One of the things we wanted to talk about was your involvement with the RATE group that is part of the Institute for Creation Research [and the Creation Research Society]. Can you tell us a little bit about your involvement with that group of people?

RH: [RATE stands for "Radioisotopes And The age of the Earth" and] it's [both] a book and a project. The book is a summary of a five-year research program that seven scientists, and others, too, are involved in. And the scientists are myself; Dr. Larry Vardiman, who's the chairman of the group ...; Dr. Gene Chaffin, editor of the Creation Research Society Quarterly and also a nuclear physicist; then there's Dr. John Baumgardner who's at Los Alamos National Laboratory, just about an hour and a half drive north of here; and then we've got Dr.

Mad Cow Disease and the Enormous Complexity of Protein Folding

by Jerry Bergman, Ph.D.

Recent research in molecular and cell biology has supported the work of William Dembski (1998) and Michael Behe (1996) in the areas of irreducible complexity and intelligent design. Generally, this work in molecular biology is not being undertaken to support some theory of biological origins, but rather to benefit humanity, such as by curing diseases, recycling wastes, and converting abundant materials like cellulose to ethanol.

Nonetheless, recent discoveries in this field have important implications for both irreducible complexity and intelligent design. To achieve their medical and industrial goals, researchers now realize that we must understand biological processes at the macromolecular lev-

el. One of the many essential differences between the chemistry of living and non-living things is the enormous structural complexity of biological macromolecules (Branden and Tooze, 1991, p. v).

The chemistry of life

Understanding the chemistry of life requires knowing the physical shape, at the molecular and atomic levels, of cellular structures such as hormone receptors, ribosomes, etc., which are composed of proteins and other molecules. This knowledge, in turn, requires an understanding of the chemical structure of these biological macromolecules, especially proteins, the basic structural and functional constituents of all living

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Andrew Snelling, a geologist from Australia, who works for ICR; then Dr. Steve Austin, who works for ICR; and Dr. Don DeYoung, who's [President of the Creation Research Society] an astronomer, and a physicist. So we have several physicists, several geologists, a geophysicist, and others working on the committee. And the committee is tackling one of the toughest problems in creation science ... — radioactive isotope dating. We've hit around the edges [of this problem] in creation science before this, but we haven't tackled the problem head on.

RG: You like to do that, don't you? You take the tough issues. We'll talk about something else a little later on, your cos-

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mology. You take the hard ones that seem to be the most difficult things for a straightforward reading from a creation standpoint. ... So, the idea of radiometric

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things.

We often try to illustrate the complexity of proteins by computing the probability of their viable assembly, by chance, from freely existing amino acids. However, there is an entirely different and higher level of complexity that results from the folding of the amino acid chain. The complexity of this process is illustrated by the computing power needed to understand the process of protein folding.

The human body is estimated to have 2 million or more distinct proteins and protein variations. The core structure of all proteins consists of 20 different amino acids, which bind in a consistent fashion to form long tube-like structures appropriately called chains. Each of the 20 amino acids has a unique chemical side chain called an "R" group, and proteins can be divided into several major families based on these "R" groups.

These amino acid side chains protrude from the protein chain like little pendants. When the protein takes on its three-dimensional shape, the side chains become locked into the other amino acid side groups as well as into the backbone of the protein. This process, called folding, produces the required precise, three-dimensional protein shapes and positive/negative charge patterns necessary for the proteins to function as parts in the cell.

In most cases, a compact globular-shaped protein results. Proper folding must occur because proteins function according to their shapes, like a house key works in a lock as a result of its specific shape. Just as filing off a notch on a key would likely cause it not to function, likewise even small changes in a protein often cause it to malfunction (as illustrated by sickle cell anemia disease). Such facts have clear implications for fields of irreducible complexity (Behe, 1996) and intelligent design (Dembski, 1998).

Protein folding

The folding of the amino acid chains into functional three-dimensional proteins occurs because of the specific arrangement

of the amino acid types, which in turn determines the placement of three types of bonds that form between the amino acid side chains. The major bond types are disulfide linkages, hydrogen bonds, and salt bridges (Feigl, Hill, and Boschmann, 1991).

These are all weak bonds, compared to the stronger covalent peptide bonds that hold the links of the chain together. This difference in bond strength is critical in regulating proteins, and also gives proteins great flexibility and mobility, without which life could not exist. The big question about protein folding is,

given a particular linear sequence of amino acid residues, what three-dimensional configuration will the sequence fold itself into? It is generally thought that the folded configuration of a protein is its lowest free-energy state, and

However, there is an entirely different and higher level of complexity that results from the folding of the amino acid chain.

in nature we see proteins composed of several thousand amino acids folding into their final configuration in just a second or so. Yet when we try to simulate this folding process on a computer, it has been estimated that it would take 10127 years of supercomputer time to find the final folded form for even a very short protein consisting of just 100 amino acids. (Casti and Karlquist, 1996)

If proteins do not fold quickly and efficiently, assuming the cell still could survive, an enormous amount of energy would be wasted synthesizing non-functional proteins. If the misfolded protein does not kill the cell, all misfolded and unfolded proteins are degraded rapidly.

A difficult task

Molecular biologists who have tried to design new proteins have found the task

extremely difficult because protein folding, although based on a simple set of rules, turns out to be enormously complex. Even with modern computers and only 20 amino acids, years of work have achieved only limited results so far (Langreth, 1995).

This simple folding process produces hundreds of thousands of different protein shapes, many of which are unique to a plant or animal type. The plant and animal kingdoms contain "literally billions" of protein species (Langreth, 1995, p. 32). All of these proteins are complex, intricately folded, and perfectly fitted to the life form for which they were designed. Virtually all structural proteins, enzymes, transport molecules, and hormones consist of properly folded and arranged amino acid strings. Efforts to predict the structure of a folded protein based on its amino acid chain data so far have:

not yielded a simple and all-embracing explanation of protein structure and hence function. Despite knowing today the three-dimensional structures of some 300 different proteins, we are still unable to formulate a set of general rules that allows us to predict a protein's three-dimensional structure from the amino acid sequence of its polypeptide chain. With hindsight it is

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perhaps not surprising that protein structures are so much more complex than that of DNA. Proteins are built up from twenty different amino acids compared with four nucleotides of DNA. Moreover, proteins fulfill a much wider range of biological functions than does DNA, and functional diversity has dictated structural diversity. (Branden and Tooze, 1991, p. v)

The complexity is so great that determining and understanding the complexity of protein folding requires the use of high-power computers because

a single protein is so complex that IBM plans to spend the next five years deciphering how just one particular protein forms its unique shape. To do that, the company will need to create a computer 500 times as powerful as any in existence today and 40 times as fast as today's 40 fastest machines working in concert. (Fischer, 2000, p. 47)

To help achieve this goal, Celera Genomics alone has raised almost \$1 billion to create a new proteomics center to understand protein folding. The government also is planning to create the Human Proteome Project to achieve the same task. Several pharmaceutical firms also have launched proteomics teams in search of making a fortune by creating novel protein-altering drugs (Stone, 2001).

Why spend all this time and money? Among the many exciting hopes of protein-folding research is that it is expected to yield breakthroughs in areas that now seem hopeless. For example, the most common type of muscular dystrophy is caused by the misfolding of a key muscle structure, a protein called dystrophin. If scientists could find a way to repair this protein, or to substitute a similar one, the disease could be cured, or at least tamed. In fact, Craig Venter of Celera Genomics "contends that all of today's medicine will seem medieval once protein studies begin yielding fruit, which he predicts will be in 10 years" (as quoted in Fischer, p. 47). The complexity of the folding process is a result of the information encoded in DNA, which specifies the amino acid composition of the proteins. Ultimately, un-

derstanding protein folding will at last lead to finally comprehending the DNA code.

Prion Diseases

If proper folding does not occur, the result can be lethal. Among the most publicized classes of emerging diseases are those degenerative brain diseases that are believed to be caused by prions. A prion (rhymes with freon) disease is unique in many ways. It involves, not a virus or microorganism, but a defective protein that causes a normal protein to unfold, and then refold into the abnormal shape that causes the disease. This misfolded form then causes other prion proteins to unfold and refold abnormally. The result is a progressive distortion of this class of proteins. In experimental studies, the normal protein is converted into an abnormal diseased protein, the details of which have now been confirmed in vitro.



Of the putative prion diseases, best known are those that affect the brain by filling it with holes like a sponge — the spongiform encephalopathies. The prion chain reaction described above eventually causes the brain to become filled with large numbers of prion proteins and, in time, large physical cavities form in the brain — a process that can take up to 30 years (Simon, 1999, p. 255). The name "spongy brain disease" is thus descriptive of the actual results of the disease. Different animals make slightly different prions and, consequently, when humans are infected with animal prions, it takes longer for them to distort human prions, which are normal proteins when folded correctly (Schardt and Schmidt, 2001).

Transfer to humans

The etiology of all transmissible spongiform encephalopathies (TSEs) is thought

to involve abnormal prion proteins that can "jump" across the species barrier. A prion disease, first diagnosed in cattle in the Northern United Kingdom in 1986, is believed to pose a real risk of spreading to humans in large numbers (Enserink, 2001, p. 1641). Often called "mad cow disease," the correct name is bovine spongiform encephalopathy, or BSE, and the presumed related disease in humans is variant Creutzfeldt-Jakob disease, or vCJD (Enserink, 2001).

The disease is purported to be transmitted to humans via the meat of infected cattle, especially meat which may be contaminated with infected nervous-system tissue. vCJD causes mood changes, including violent mood swings, depression, and even paranoia. Next, slurred speech develops, loss of the ability to walk and balance occurs, and victims see double and lose their memory (Brown et al., 2001). It is always lethal.

So far, an estimated 180,000 cases of mad cow disease have been identified worldwide, and a total of about 100 persons across Europe are known to have died from vCJD (Schardt and Schmidt, 2001). No one knows how many persons are actually infected at present, partly because it may take 5 to 10 years before clear symptoms emerge (Schardt and Schmidt, 2001). As a result, both export and import of cattle have been restricted by several nations. BSE has not been detected in native cattle in North America (USDA, 2001).

Spongiform encephalopathy in humans (classical as opposed to variant CJD) can arise spontaneously, and about one in a million persons develops it annually (USDA, 2001). Exactly how classical CJD develops is not fully understood yet, and it is possible that it arises spontaneously in cattle as well (Enserink, 2001).

Conclusion

Understanding the complexity of protein folding portends to be an expensive and time-consuming intellectual task, and aptly illustrates the Psalm that says we are "fearfully and wonderfully made." Misfolding not only puts a functional protein out of commission, but the misfolded protein itself can do much damage in the body, as illustrated by the various prion diseases. As each year passes, research shows that the chemistry of living organisms, includ-

ing humans, becomes more and more complex, and Darwinism becomes less and less tenable.

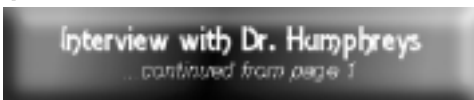
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dating — what are some of the things that we've done in the past, maybe as creationists, that you think are not very well done, or that you've got better solutions to?

RH: Well, the main thing that I and others on the committee felt was that we didn't tackle the problem head on. A lot of us, and most creationists for a long time, were tackling the problem by looking at small flaws in the way radiometric dating is done, assuming, for example, maybe if the system weren't closed, as the assumption usually is, we could get other isotopes in there.

RG: Contamination?

RH: Yes. What I've always felt is we weren't reckoning with the major part of the problem. That is, there's a very large amount of evidence, all kinds of different evidence in the earth and on the earth today, that a very large amount of radioactive decay has occurred. Yet we have other geo-science evidence that indicates that the earth hasn't been here that long. So, if you have a whole lot of nuclear decay occurring, how can you have all that happening in a short time?

RG: So, there are many things you've talked about before. Maybe you might want to list these; maybe you don't want to get into all these that indicate a young age for the earth, as well as the universe, and then explain how we can tackle these things head on. So what are some of the things that indicate we have a young earth?

RH: OK. One of them is the accumulation of mud on the ocean floor. It's accumulating much too rapidly, and the present slow plate tectonics subduction doesn't carry it out nearly as fast as it should. And another ... is the accumulation of sodium in the ocean, that accumulates too fast for the oceans to be 3 billion years old. So if the ocean really were billions of years old, it would be as salty as the Great Salt Lake, or the Dead Sea, with lots of salt on the bottom, and it would be choked with dozens of kilometers of mud.

DS: Well, I remember reading about the salt sea in the Imperial Valley forming in just a couple of years, and the salt in that is saltier than the ocean, isn't it?

RH: Yes.

RG: Well, I remember last year you had a radio interview back in our home town. ... And I was laughing so hard at the end of it, because you were saying that the most [the age of the ocean] could be, based on the salt content, was "such and such." And this person called in to say, "What if the salt contents were different?" And you said, "Yes, but I'm starting from zero content."

RH: Yes, he ... was inadvertently helping me. He was saying, "Suppose you didn't start off with some salt in it, suppose you started off with zero." And I said, "Yes; that's what I did to get the number." So he hadn't followed my argument very well.

RG: It was quite wonderful.

RH: There are a number of other, differ-

ent lines of evidence pointing to a very young world. In fact, there are probably hundreds of processes that one could point to. Some of the others are: If people have been around millions of years, as evolutionists like to say, for the length of the stone age you'd have billions of bodies in the earth. And you don't, you don't have that many stone age bodies in the earth. What's another one? The age of comets. Comets wear themselves out too quickly in the solar system, and the theory to explain that doesn't do a very good job. There [are also] lots of [geological] formations that point to very rapid formation, such as polystrate fossils, trees that go through several fossil strata at once. Or the evidence in the fossil strata themselves, that they have been laid down very rapidly.

RG: We've talked about how sedimentation [like] we've actually seen with Mt. St. Helens, how things like that can happen very quickly, and long ages are not needed. So, there are many evidences for a young earth. Still there's that bugaboo of radioactive dating that seems to indicate long ages, and your group has decided to attack this head on.

RH: We've found a lot of evidence that during the Genesis flood, and probably during creation week as well, the rates of radioactive decay were billions of times higher than they now are. One of the pieces of evidence for this is right here in New Mexico. There's a volcanic caldera in the Jemez mountains near Los Alamos, and deep hot rock has been taken out of

boreholes there, sent to Oak Ridge [National Laboratory], and examined. There are tiny radioactive crystals in this rock. ... These [microscopic] crystals, called zircons, are where most of the radioactivity is in granite-like rock. And when radioactive decay of uranium takes place, you produce helium — the alpha particles you've heard about, alpha radiation. Those are helium nuclei, and quickly those helium nuclei become helium atoms, and helium atoms are very slippery little things, and they can wiggle through the tiniest crystal lattice and escape. And the hotter the lattice, the faster they escape. Remember, this is from hot rock; it's from 100-300 degrees C, so it's very hot rock. So helium should diffuse out of these tiny little crystals very quickly, within thousands of years. And yet the crystals are supposed to be billions of years old on the evolutionary scheme — 1.5 billion years according to uranium-lead dating of those crystals.

DS: So have you measured this diffusion rate of helium?

RH: Well, we're in the process of doing that, but what put us on to that was Robert Gentry, [formerly] at Oak Ridge, [who] found that huge amounts of helium were still in the rock, up to 58 % of the helium that would have been emitted in 1.5 billion years was still there in these tiny zircons.

RG: Well, that sounds like a smoking gun.

RH: Right. What it's saying to us is that over a billion years' worth of radioactive decay took place from the amount of helium that is there. Yet, because of the fast rate of helium diffusion out of these zircons, we can say that it took place less than thousands of years ago, within thousands of years ago.

DS: So there's too much helium in the rocks, but not enough in the atmosphere?

RH: That's the other half of the thing. Up in the earth's atmosphere, and Dr. Larry Vardiman is talking about this, there's less than 1/2000th the amount of helium that should be there, if we've had 5 billion years' worth of nuclear decay.

RG: So helium would stay in the atmosphere, as opposed to being diffused out into the cosmic space, or something like that?

RH: Right, and a good thing, because all the other gases would have diffused out with it, too; because helium mixes with all the

other gases. People have this idea that helium would float up to the top of the atmosphere and be concentrated there. No, it would be mixed just like every other gas: carbon dioxide, oxygen, and nitrogen. So, the fact we haven't lost much of those gases should be a clue to people that we haven't lost much of the helium.

DS: So, if the radioactive decay rates took place for a long time, we should all be talking like this ...[high voice]?

RG: I was thinking about doing that, being the comedian. (laughs)

RH: So, ... it's easy to calculate what the leakage rate of helium should be out of the atmosphere and into space, and that's small compared to the amount of helium that should be leaving the surface of the earth and entering the atmosphere.

RG: You've published that in this

Some of the results are already coming in, and they're much, much closer to the creation model than to that of the evolutionist.

[RATE] book?

RH: Yes.

RG: Has there been any reaction from the secular scientists?

RH: Not a lot. I think they're still digesting the book. The book is pretty technical (it's nearly 700 pages of very technical stuff in the geosciences, in the nuclear sciences), ... so to me it seems like a lot of digestion's been going on. It's only been a few months. So I imagine after a while it will be more.

RG: Are you now in the process of building on top of this research?

RH: Yes, we're trying to go forward with this. It's a five-year research program. Just to give one example, nobody has ever measured the [helium] diffusion rates in several of the minerals.... So, we're doing this experimentally, ... and we have a prediction that's made by the creationist model, and we have a prediction by the

evolutionist model. Some of the results are already coming in, and they're much, much closer to the creation model than to that of the evolutionist.

DS: You seem to have a history of doing this.

RH: Yes, I've gone out on a limb now about a half-dozen times, and so far the limb hasn't been sawn off under me.

RG: Why don't you talk about some of those things, maybe we can sort of bridge into your cosmology.

DS: Your idea of magnetic fields was one.

RG: Talk a little bit about that. It is very fascinating to me. You first wrote something about this back in 1983?

RH: Yes. Back in 1984 I published a paper in the *Creation Research Society Quarterly*, I think it was the December issue of that year, "The Creation of the Earth's Magnetic Field."¹ My jumping off point was a verse in 2 Peter 3, where it says that the earth was formed out of water and by means of water. And that said to me that, since the earth is not water now, God must have transformed the water into all the other stuff we see around us: iron, silicon. But I thought of a way

that He could make the earth's magnetic field while it was still water. If He had lined up all the protons — you know the two hydrogen atoms, the two nuclei that are protons — if He created the water with the two protons all pointing in the same direction, and all the water molecules, [with] all its protons, all pointing in the same direction, then you would get a magnetic field which is just about the right amount you needed if the earth is 6,000 years old, and some decay has taken place. So that struck me as kind of interesting. If you're God, and you're going to make a magnetic field, here's a real easy way to do it. When you create the water molecules, create the protons all pointing in the same direction.

RG: Real easy for God, not for us, to do.

RH: Yes, sort of thinking God's thoughts after Him.

DS: Then there's the decay of the magnetic field that could get out of alignment,

so you actually have that as a measurable rate.

RH: Right. The earth's magnetic field is decaying at a certain rate right now. It would take about 1,400 years to decay down to half its present strength, and we know from archaeomagnetic data that it has been decaying at that rate for about 1,000 years.

RG: Wow, I didn't know that.

RH: Historically, it has been measured for the past 150 years, actually 170 years. It's followed that nice decay path, K curve, right on down. But before that it did complicated things, and we think the complicated things are the result of reversals of the earth's magnetic field that happened during the Genesis flood. There's a lot of roiling and boiling in the earth's core, and during the 1980's I thought that this would produce the magnetic reversals rapidly within a matter of weeks. In other words, one week, during the Genesis flood, the magnetic field was pointing north, and the next week the magnetic field was pointing south.

RG: Because of that turmoil?

RH: Because of that turmoil that was going on in the core, so that would be a result of the flood. Because of the flood events, it actually has a very nice tie-in with John Baumgardner's catastrophic plate tectonics [theory]. The catastrophic plate tectonics would produce the rapid roiling and boiling in the core. If you get the roiling and boiling, you get the rapid reversals.

DS: So what was the position, the "going out on the limb" prediction, that you made in this paper?

RH: Getting back to the origins of the field, I thought if the earth's field had this neat explanation — it fit the data pretty nicely — well, maybe God made the fields of all the other planets and parts of our solar system the same way. So, I just said, well, I'll apply the same theory to the Sun, Moon, Mars, Venus, Jupiter, Saturn, Uranus, Neptune. And what would the fields be there? At that time space probes had measured some of those fields, but not all of them; so for the ones the space probes had measured, it fit the theory very nicely.

When I published that in December, 1984, for the two planets that had not been measured, Uranus and Neptune, I made a prediction that, if the theory's any good, then the strength of the [magnetic] field for those two planets should be such and such. My prediction for the planet Uranus was about 100,000 times larger than what evolutionary predictions were. This is a good test. Let's see where the chips fall. Then Voyager 2, I think it was, went by the planet Uranus in 1986 and it was right smack in the middle of the range of my predictions.

RG: That's amazing.

RH: I broadened the range a little bit because we didn't know too much about the core of that planet. So then it [Voyager] went by Neptune during 1989, and again [my prediction was] right in the

... if the earth's field had this neat explanation ... maybe God made the fields of all the other planets and parts of our solar system the same way.

middle of the range for that planet.

RG: How have the evolutionary scientists, the NASA scientists, that went for the other predictions, how have they been able to modify their opinions to fit those data?

RH: Well, they modified their opinions a little bit, when Uranus came out so badly wrong, they said that Neptune is sort of a sister planet to Uranus, so we'll modify our prediction for Neptune, so it's also going to be a strong field.

RG: That doesn't help for the Uranus prediction in the first place.

RH: No, it didn't. It was sort of a hand waving theory they had in the first place, so it wasn't very quantitative.

DS: Now does this also hold true for the moons of Jupiter?

RH: Yes, the moons of Jupiter came out very nicely. I didn't even think of including them in the paper, but just apply the

same formulas that are in the paper, and they fit the moons of Jupiter that were measured much more recently, by another space probe, Galileo. It fits those moons pretty nicely, too. So, I'm happy about that.

RG: You're batting a thousand here, it looks like.

RH: That one I didn't actually make a prediction, but there's no difference from [what] the prediction [would have been from the model].

DS: I have a question about your *Starlight and Time*² cosmology from [someone who] asked a question. If you start from a ball of water, he's wondering how this ball of water does not collapse upon itself, down to a small condensed black hole?

RH: It would fall and collapse upon itself like a black hole — that's what my book talks about. I don't know why he's asking about it. Are you sure that's what the question was? My book says, if God created all the matter of the universe as a ball of water, ... [there would be] a ball about one or two light years in diameter. That ball would immediately start collapsing. It would make a black hole. My theory then suggests that it bounced and became a white hole — it expanded out. Then the event

horizon shrank, and as it shrunk to the central part, God had already made a planet there — the one we're on. And time would be dilated when the event horizon reached the earth's area. I'm not sure if he's read that part of my book that talks about that. There are three different parts that talk about that.

DS: Maybe your theory sometimes just goes over the head of most of the readers.

RH: That book has a lot of information in it, and I don't think most people are used to going through a book very carefully and seeing all the information that is there. Unfortunately, the average book that's about that size, which is paper back, has one idea per chapter. I try to pack about one idea per sentence into it. So, there's a lot in it, and I don't blame anyone for not digesting it.

DS: And your wife puts up with all this abstraction?

RH: Very easily. She just doesn't pay too much attention — she enjoys this, too.

Reference:

- 1 Humphreys, D.R. 1983. The creation of planetary magnetic fields. *Creation Research Society Quarterly* 21(3):140-149. See also, Humphreys, D.R., 1999. Mars global surveyor

- confirms creation! *Creation Matters* 4(3):8.
- 2 Humphreys, D.R. 1994. *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*. Master Books, Green Forest, AR.

Part 2 of this interview, in which Dr. Humphreys discusses in more detail his cosmology explaining “old” starlight in a young universe, will appear in the next issue.

For information about the TV show, and about ordering the video tape of this interview, write to: The Revolution Against Evolution, P.O. BOX 80664, Lansing, MI 48908-0664. You can also visit the website at www.rae.org.

Speaking of Science

Commentaries on recent news from science

New Method for Studying Evolution Found

The Stanford press release begins: “Evolutionary biology has always faced a major hurdle — how to test a process that takes place over thousands, if not millions, of years. Researchers at Stanford University may have come up with a solution.” And what is it? Studying stickleback fish. David Kingsley wanted two populations that had diverged recently, yet could still cross-breed, so he could map their genetics and determine whether evolution occurs through small or large jumps. In a paper in *Nature*, Kingsley begins by saying, “The genetic and molecular basis of morphological evolution is poorly understood, particularly in vertebrates.” Then he proposes the stickleback as a good field-testing candidate.

Dr. Kingsley, they are just fish. Variation in the size and color of scales and fins signifies nothing. Call me back when you evolve them into giraffes. Did you catch the admission that after all these years they still don't understand the mechanism of evolution? It shouldn't take millions of years to figure it out; they've been breeding thousands of generations of fruit flies and bacteria in the lab for decades (with no new kind of organism coming out of the test tube). If evolution is supposed to be such a universal life principle, the same mechanism should work for vertebrates.

This paper sounds like another empty promise. Darwin did his wishful thinking in 1859, and here we are, in 2001, with evolution still poorly understood (but you students had better believe it!).

Anonymous. 2001. Stanford researchers develop system for field testing mechanisms of evolution. Office of News and Public Affairs, Stan-

ford Univ. Medical Center. 20 Dec 2001. http://mednews.stanford.edu/news_releases_html/2001/decreleases/kingsley.html

Peichel, C.L., K.S. Nereng, K.A. Ohgi, B.L.E. Cole, P.F. Colosimo, C.A. Buerkle, D. Schluter, and D.M. Kingsley. 2001. The genetic architecture of divergence between threespine stickleback species. *Nature* 414:901-905.

Horses' “Vestigial Muscles” Are Really Dampers

Horses and camels have tiny muscles in their legs, as short as 6 mm, attached to very long tendons (almost as long as the leg itself). Evolutionists have thought these muscles must be vestigial; i.e., useless leftovers from earlier ancestors. But now, writing in *Nature*, Alan M. Wilson and colleagues think there's a reason for these unusual muscles.

Modeling the forces, tensions and vibrations involved in galloping, the researchers demonstrated that the muscles serve as dampers, to reduce damage to bones and tissues from vibrations caused by the foot striking the ground.

A layman's summary of the paper on *Nature Science Update* is well worth reading. It explains that tendons are like elastic springs, giving the horses' legs the bounce of a pogo stick. But the 93% recoil of the tendons causes a problem: “Spring heels are all very well, but they could shake horses and other runners, such as camels, to bits.” These small muscles, being more “squashy,” act like rubber washers to damp out the otherwise damaging vibrations.

The *Update* continues: “As it is, race-horses run at their limits. Fatigue damage is a leading cause of injury, and the spring system can fail in as little as 10,000 strides when galloping. Without the muscle fibres, this rate would be even worse.” The summary also explains that “These fibres may be costly to develop and maintain but they are ideally suited to absorbing the shock-waves that accompany each stride. They are not mere evolutionary vestiges, as some had suspected.”

The argument for evolution based on vestigial organs has been dying a slow death for a long time. Evolutionists sometimes accuse creationists of taking the lazy way out, failing to explain something by giving up and saying, “God did it.” But

in the sorry history of vestigial organ theory, isn't the shoe on the other foot?

Instead of finding the function of an unknown organ, evolutionists have tended to give up and say, “It's just an evolutionary leftover.” A belief in creation, on the other hand, has often been the stimulus for outstanding scientific research, because of the conviction that nature is intelligible, follows intelligently-formulated laws, and possesses an underlying plan and design that can be discovered and utilized.

For “Stupid Evolution Quote of the Week,” let's enter this line from Henry Gee's *Update* article: “Why use muscle as the damping material, when practically any squashy material would do? One answer is that muscle just happens to be available



The Pseudoscientific Nature of Darwinism

by Arthur L. Manning

In Charles Darwin's book, *The Origin of Species*, in chapter six, "Difficulties on Theory," he states that, "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." On the surface this sounds as if Darwin is telling us exactly what we need to do in order to disprove his theory.

Proving a negative

However, this statement is highly deceptive for at least two major reasons. First, it requires the would-be disprover of evolution to do the impossible, *viz.*, to demonstrate how something could not happen. Demonstrations, by nature, show how things do happen; not how they do not happen. If someone were to set up a set of circumstances (*i.e.*, an experiment) and observe that evolution of a particular complex organ *did not* happen, does that mean that it *could not* have happened? Of course not. That evolution of such an organ could not happen can be demonstrated only if every possible set of experimental conditions were set up and observed. Even if every conceivable set of circumstances were investigated, and no evolution was observed, this would

not disprove Darwin's theory. Darwin could argue that there must be another set of circumstances, not thought of, that would produce such an organ, since we know the organ exist.

The bombardier beetle's defense mechanism is often set forth as an instance of a complex organ which could not have come about by "numerous, successive, slight modifications." It seems impossible for such an organ to develop in this way because the insect would likely fail to reproduce if the mechanism were present in an incomplete form (he would likely blow himself up!). However, just because we cannot imagine a scenario that would gradually produce such a mechanism does not mean that there is no such scenario. So, even this amazing mechanism fails to meet the impossible demands of Darwin's theory. His theory is unfalsifiable, and therefore is not scientific.

Darwin escapes

The second reason that Darwin's challenge is deceptive is that it diverts the would-be disprover's attention to looking for the impossible (*viz.*, how Darwin's mechanism could not work), while Darwin is allowed to escape without having himself offered any demonstration of its working (a com-

plex organ being formed by "numerous, successive, slight modifications"). To this day no one has demonstrated any complex organ coming into being by observing "numerous, successive, slight modifications" over many generations. If demonstrating how this could not have happened would disprove his theory, then certainly demonstrating how this could happen would have to be considered evidence for the theory.

Conversely, even if there were many such demonstrations of evolution happening in the lab, this would never conclusively prove Darwin's theory. Just because an organ could be produced in such a way does not necessarily mean that it was produced that way in history. But many such actual demonstrations would certainly offer support for his theory. However, there has not been even one such demonstration. Therefore, Darwin's theory is utterly without any empirical evidence; and those who claim that it has been proven as well as any law of science are greatly mistaken.

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— evolution didn't equip horses with rubber washers." No, Henry, the infinite-personal Creator gave them something far more wonderful: self-healing, self-regenerating, living dampers, filled with DNA code and molecular machines.

In our day of cars and freeways, we should still consider the marvel of the horse and camel. Horses are sleek, handsome, versatile, loveable animals, and now we find they are equipped with hi-tech shock absorbers, too. Get a horse.

Gee, H. 2001. Muscles damp bad vibrations. *Nature Science Update* 21 Dec 2001.
www.nature.com/nsu/011227/011227-5.html
Wilson, A.M., M.P. McGuigan, A. Su and

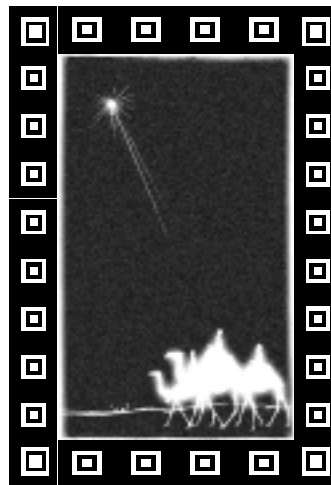
A.J. van den Bogert. 2001. Horses damp the spring in their step. *Nature* 414:895-899.

Christmas Star an Astrology Cover-Up?

Michael Molnar, an American astronomer, thinks early Christians covered up the astrological roots of the Christmas star story because it seemed pagan, reports *EurekAlert*, based on a story in *New Scientist*. He bases his conspiracy theory on a fourth-century manuscript by a converted Roman astrologer named Firmicus Maternus, who described

a double eclipse of Jupiter in 6 BC as a sign of the birth of a great king. Molnar believes Maternus did not mention Jesus' name for fear of angering Christian leaders at a time when they despised pagan beliefs.

Conspiracy theories make for good press, but this one is pretty weak. Matthew was much closer to the events than Maternus, and walked with Jesus for three years as a disciple. Why shouldn't his clear account, written within a few decades of the actual event, be given more credence than a



TO THOSE WHO SAY IN THEIR HEARTS "THERE IS NO GOD."

(Psalm 14:1) by William Hodges

This is for those who think the rose
just got here on its own
and didn't need a helping hand
to glorify its native land
with beauty unsurpassed.

This is for those who take the line
that honeysuckle on its vine
just gets here anyway it can
with no help from above.

An acorn rests upon our fertile earth
and seeks that earth
and soon gives birth
to what will be a mighty tree.
How can this be?

Did Someone wave a magic wand
and make that little seed respond
to elements within the earth
and dampness to begin the birth
of that great tree?



And what about the seed of corn
that's planted in that fertile soil?
Comes sun and rain and once again
a seed's reborn and ears of corn
appear as if by magic.
Who is the Magician?

And what about that magic force
that keeps us firmly on the earth?
The force that keeps us in our place
instead of flying off in space.
What is the Source of this great force?

The oak, the corn and gravity,
the soil, the rain, the sun
and countless other gifts bestowed
all suffer by comparison
when we consider life itself.
Who formed our hearts, our souls, our minds?

Our hearts that beat away from birth
until we all return to earth
a soul that always harbors love
to those who have a knowledge of
the One from whom these gifts all flow,
the One who sent His only Son
to do what needed to be done
to keep us from eternal loss
by seeking death upon a cross.

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veiled reference by an obscure astrologer hundreds of years after the events took place?

Besides, it is not improbable that the Magi, living in a culture that accepted astrology as a given, would have been products of their time to some degree. Seeing an unusual star (possibly foretold by the prophet Daniel), they could have come without completely understanding the significance of the Christ child. If even the disciples, following Jesus around for three years, did not grasp the nature of His kingdom, we cannot expect the Magi to have fully understood what He would do as they presented to Him their royal gifts. But they "rejoiced with exceeding great

joy" when they saw the star, having at least a profound sense that something momentous was happening. Matthew's description does not fit a conjunction, comet, supernova, meteor, or any other known natural phenomenon, though planetarium directors this time of year like to speculate. It was a one-time sign from God.

The Star of Bethlehem in no way promotes astrology; pagans were looking at the stars anyway, so the Creator of the stars upset their expectations by giving them a star like no other, that moved and stood over where the child lay, as if to say, "You want a sign? Here's a sign— my beloved Son: learn from Him!" God led them from general revelation (the star) to special revelation, messages from angels and the sight of His own Son. This is the message of the gospel, leading people of

all nations from darkness to light, and from the power of Satan to God (Acts 26:18). "For, behold, I bring you good tidings of great joy, which shall be to all people. For unto you is born this day in the city of David a Savior, who is Christ the Lord" (Luke 2:10-11).

Anonymous. 2001. Christmas star cover-up. *EurekaAlert* 19 Dec 2001. www.eurekaalert.org/pub_releases/2001-12/ns-csc121901.php

Chown, M. 2001. Early Christians hid the origins of the Bethlehem star. *New Scientist* 22 Dec 2001.

Editor's note: All S.O.S. (Speaking of Science) items in this issue are kindly provided by David Coppedge. Additional commentaries and reviews of news items by David can be seen at: www.creationsafaris.com/crevnews.htm.

Creation Calendar

Note: Items in "Creation Calendar" are for information only; the listing of an event does not necessarily imply endorsement by the Creation Research Society.

February 23

Critical Thinking to Detect Flaws in Evolution Arguments
by David Coppedge
South Bay Creation Science Association
7:00 pm, Cornerstone Community Church, Torrance, CA
Contact: Garth Guessman (310)952-0424

March 6

What did Jesus mean by "At the Beginning He made them Male and Female"? — by Mark Armitage, M.S.
Azusa Pacific University, Common Day of Learning, Azusa, CA
Contact: Mark Armitage (626)815-6000, X5519

April 19 - 20

Scriptural and Scientific Reality — A seminar featuring
Dr. Andrew Snelling, Frank Sherwin, M.A.,
Mark Armitage, M.S. and others.
Grace Church of Glendora, Glendora, CA
Contact: Mark Armitage (626)815-6000, X5519

June 30 - July 5

Twin Peaks Family Science Adventure
Fun-filled vacation for families
Alpha Omega Institute, Grand Junction, CO
Contact: Andrea Korow (970)523-9943, www.discovercreation.org

July 28 - August 2

Redcloud Family Adventure #1 — Fun-filled vacation for families with
teens and upper elementary aged children
Alpha Omega Institute, Grand Junction, CO
Contact: Andrea Korow (970)523-9943, www.discovercreation.org

August 4 - 9

Redcloud Family Adventure #2 — Fun-filled vacation for families with
children of any age
Alpha Omega Institute, Grand Junction, CO
Contact: Andrea Korow (970)523-9943, www.discovercreation.org

August 18 - 24

Grand Canyon Raft Trip (7 day, 187 river miles)
Sponsored by Canyon Ministries (Phoenix) and
Design Science Association (Portland).
A creationist view of the canyon's geology / biology will be provided
Contact: Keith Swenson (503)665-9563, kswenson@mindspring.com

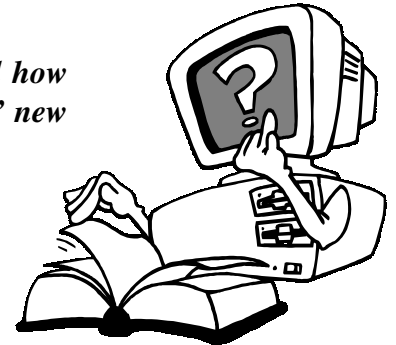
What Are Creationists Thinking about ...?

As new scientific discoveries make the headlines, have you ever wondered how your fellow creationists are reacting? Have you ever thought of a "crazy" new idea about origins and wanted to bounce it off another creationist?

Now you can keep in contact daily with creationists from all around the world. The Creation Research Society sponsors **CRSnet**, an online community of CRS members who have e-mail access to the Internet. Not only do participants discuss the latest scientific findings related to origins, but they also receive news about the CRS — its research, publications, and activities — and other creation-related news.

For more information, send an e-mail message to Glen Wolfrom at contact@creationresearch.org.

Participation is limited to CRS members in good standing.



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