

Dinosaur Red Blood Cells Found in Fossils?

by Greg Moore

Some creationists claim scientists have found dinosaur blood—actual red blood cells—in the bone of a *Tyrannosaurus rex*. This, they say, is proof of a recent creation. They argue dinosaur bone should be completely fossilized if it is millions of years old, but the discovery of blood cells in “fresh” bone proves dinosaur remains are only a few thousand years old.

The dinosaur blood claim has gained wide acceptance in young-earth circles. It is stated in much of their printed materials and on many of their websites. It has even been presented to school boards as evidence of a young earth and reason for allowing creation “science” into the classroom.¹ Given its wide dispersal, it is important to assess the validity of the claim.

Origin of claim

The major source of dinosaur blood claim is a 1997 article by Carl Wieland titled, “Sensational dinosaur blood report!”² Wieland is a young-earth creationist and CEO of Answers in Genesis in Brisbane, Australia. The article states Montana State University researchers found “traces of real blood” in the leg bone of *Tyrannosaurus rex*.

Wieland reports the researchers noticed some parts deep inside the *T. rex* bone had not completely fossilized. Examining a thin section of the bone through a microscope, they noticed tiny round objects, translucent red with a dark center, in the blood vessel channels. When one their colleagues looked the objects, he shouted, “You’ve got red blood cells!” Mary Schweitzer, the lead researcher, was skeptical the objects could be blood cells and expressed her doubts to her boss, famous paleontologist Jack Horner. Horner suggested the researchers try to prove objects were not blood cells. According to Schweitzer, “So far, we haven’t been able to.”

Wieland describes several tests the researchers conducted that indicate the presence of hemoglobin—the protein in red blood cells that makes blood red and carries oxygen throughout the body. He then makes the following statement:

Evidence of hemoglobin, and the still-recognizable shapes of red blood cells, in unfossilized dinosaur bone is powerful testimony against the whole idea of dinosaurs living millions of years ago. It speaks volumes for the Bible’s account of a recent creation.

¹ Gary S. Hurd, “[Dino-blood and the Young Earth](http://home.austarnet.com/au/stear/YEC_and_dino_blood.htm),” January 2004, (http://home.austarnet.com/au/stear/YEC_and_dino_blood.htm)

² Carl Wieland, “[Sensational dinosaur blood report](http://www.answersingenesis.org/docs/4232cen_s1997.asp),” *Creation* 19(4), Sept-Nov 1997, pp.42-43. (www.answersingenesis.org/docs/4232cen_s1997.asp)

Wieland also states “to find unfossilized dinosaur bone is already an indication more consistent with a young age for the fossils.” And, in a sidebar titled, *More on fresh dino bone*, he states:

To claim that bone could remain intact for millions of year without being fossilized (mineralized) stretches credibility. The report here of red blood cells in an unfossilized section of dinosaur bone is not the first time such bone has been found.

Examining the source

Wieland’s article is based on a 1997 magazine account of the work of Montana State University researchers published in *Earth* magazine titled, “The Real Jurassic Park.”³ The *Earth* article focused on the possibility of finding dinosaur DNA, a popular topic at the time due to the release of Steven Spielberg’s film, “Jurassic Park.” Because *Earth* was written for the general public—not a scientific journal—the article was a journalistic blend of fact and hyperbole.

Wieland states the researchers found actual red blood cells. However, in reading the *Earth* article, it is apparent no actual blood cells were found—the objects merely resembled blood cells. (Note: real red blood cells appear as translucent red objects with a *lighter* center and dark, refractive outer membrane.) The researchers describe the objects as “mysterious structures at best derived from blood” and “unknown structures...[perhaps] derived from red blood cells.”^{4,5} Mary Schweitzer also clearly states she did not believe the objects were red blood cells:

So I showed these microscopic bone slices to my boss, paleontologist Jack Horner, renowned for his work on dinosaur nesting sites. He took a long look and then asked, “So you think these are red blood cells?” I said, “No.”⁶

Wieland states the *T. rex* bone contained traces of hemoglobin. However, in the *Earth* article, the researchers do not make this claim:

By now, we felt fairly comfortable claiming that these dinosaurs tissues contained heme. But heme doesn’t quite equal hemoglobin. Some other proteins that contain absolutely no hemoglobin do contain a heme unit.⁷

In fact, in the concluding paragraphs, the researchers state they are not even certain if the objects in the *T. rex* bone are blood products:

So far, we think that all this evidence supports the notion that our slices of *T. rex* could contain preserved heme and hemoglobin fragments. But more work need to done before we

³ Mary Schweitzer, Tracey Staedter, “The Real Jurassic Park,” *Earth*, June 1997, pp.55-57.

⁴ Ibid., p.55.

⁵ Ibid., p. 56.

⁶ Ibid.

⁷ Ibid. p. 57.

are confident enough to come right out and say, “Yes, this *T. rex* has blood compounds left in its tissues.”⁸

Wieland states unfossilized dinosaur bone is an indication of a young age for the fossils. While the *Earth* article does not go into length about the fossilization process, it is clear the researchers were not troubled by the fact the bone was not completely fossilized. They explain:

Normally a bone becomes fossilized with the help of groundwater, which permeates it, washes away its organic components and replaces them with minerals. ...One possible explanation was that not much water had gotten into this *T. rex*. If that was true, then some biomolecules could remain.⁹

Wieland also states the presence hemoglobin in the bone casts doubt upon the millions-of-years idea. However, in the *Earth* article, the researchers state hemoglobin products are known to survive for a very long time:

We also thought hemoglobin could be in the tissue because at its core are structures that have a reputation for durability. Called heme units, these chemically stable structures consist of a ringlike organic compound called porphyrin bound to an iron atom. Porphyrins are an important part of many biological molecules, including chlorophyll, which plants need for photosynthesis. Porphyrins derived from chlorophyll have been found in sediments dating back to the Carboniferous, when vast forests blanketed the planet many millions of years before the dinosaurs existed. So we did not think it too far-fetched that heme units from hemoglobin might still exist in our *T. rex*.¹⁰

In comparing the two articles, it is apparent Wieland was very selective in the information he reported. The excitement he states the researchers were struggling to restrain was not that they had found red blood cells but the possibility they had found residual blood products that might contain dinosaur DNA—the focus of the *Earth* article. Wieland also states the researchers were unable to prove the objects were not red blood cells. This is true but they were also unable to prove they were red blood cells.

Additional facts

Since 1997, Answers in Genesis has also continued to claim the objects were actual red blood cells. For example, in their 1999 book, *Refuting Evolution*, Jonathan Sarfati states:

Red blood cells and hemoglobin have been found in some (unfossilized!) dinosaur bone. But these could not last more than a few thousand years...¹¹

⁸ Mary Schweitzer, Tracey Staedter, “The Real Jurassic Park,” *Earth*, June 1997, p. 57.

⁹ Ibid, p. 55.

¹⁰ Ibid., p. 56.

¹¹ Jonathan Sarfati, *Refuting Evolution*, (AK, Master Books, 1999), p. 112

In addition, their 2000, *The Revised and Expanded Answers Book*, states:

There is also physical evidence that dinosaur bones are not millions of years old. Scientists from the University of Montana found *T. rex* bones that were not totally fossilized. Sections of the bones were like fresh bone and contained what seems to be blood cells and hemoglobin. If these bones really were millions of years old, then the blood cells and hemoglobin would have totally disintegrated. Also, there should not be ‘fresh’ bone if it were really millions of years old.¹²

Wieland has also continued to stand behind the claim. In a 2002 exchange titled, “Evolutionist questions AIG report—Have red blood cells really been found in *T. rex* fossils,” Wieland responds to a critic’s statement that the objects are not blood cells by stating:

This seems rather disingenuous, since they saw what appeared to be red blood cells under the microscope. Obviously, this was stunning, and it was Jack Horner who, as we cited, suggested to Mary Schweitzer that she try to disprove that they were red blood cells that were being seen by these people under the microscope.¹³

And, elsewhere in the exchange Wieland states:

...there is no reason for a scrap of retreat from my earlier statements above that a) the evidence is consistent with morphologically intact red blood cells having been discovered...b) the evidence is overwhelmingly more consistent with the belief that the fossils are not millions of year old than with the converse.¹⁴

The problem is the dinosaur blood claim is derived from the *Earth* article, which was a popularization of the research conducted by Schweitzer and her colleagues. The actual research papers, on which the *Earth* article was based, do not indicate the presence of actual red blood cells. One paper published in the *Proceedings of the National Academy of Sciences of the United States* (PNAS), states:

The biochemical and biophysical data...provide powerful support for the hypothesis that some form of heme as well as fragments of hemoglobin proteins are preserved with the dinosaur tissues.¹⁵

¹² Ken Ham, Jonathan Sarfati, and Carl Wieland, Ed. Don Batten, *The Revised and Expanded Answers Book*, chapter 19, [What do the bones say?](http://www.answersingenesis.org/home/Area/AnswersBook/dinosaurs19.asp) (www.answersingenesis.org/home/Area/AnswersBook/dinosaurs19.asp)

¹³ Carl Wieland, “[Evolutionist questions AIG report—Have red blood cells really been found in *T. rex* fossils?](http://www.answersingenesis.org/docs2002/0325rbc.asp)” March 2002. (www.answersingenesis.org/docs2002/0325rbc.asp). See first CW statement.

¹⁴ Ibid. See third CW statement.

¹⁵ Mary H. Schweitzer, et al., “[Heme compounds in dinosaur trabecular bone](http://www.pnas.org/cgi/content/abstract/94/12/6291),” *PNAS*, Vol. 94, June 1997, p. 6295. (www.pnas.org/cgi/content/abstract/94/12/6291).

The other paper published in the *Journal of Vertebrate Paleontology* states:

Results indicate that the analyzed tissue contains numerous biomolecules. While some the biomolecules are most likely contaminants, the probable presence of collagen type I suggests that some molecules of dinosaurian origin in these tissues.¹⁶

After the *Earth* article, Schweitzer and her colleagues also published paper in the *Annales de Paléontologie*. Here the researchers are even more explicit that the structures in the *T. rex* bone were not red blood cells:

Clearly these structures are not functional cells. However, one possibility is that they represent diagenetic alteration of original blood remnants, such as complexes of hemoglobin breakdown products, a possibility supported by other data that demonstrate that organic components remain in these dinosaur tissues.¹⁷

Given the controversy created by Wieland's article, a number of people have contacted the researchers to determine if objects were red blood cells. In Jack Horner's response to a student at Indiana University Southeast, he states:

No cells have been found in any dinosaurs, but the remnants of red blood cells have been hypothesized on the basis of Heme (sic), a kind of iron produced biologically. The discovery of heme, by my graduate student Mary Schweitzer, in a skeleton of *T. rex* indicates that the remains of cells can be preserved.¹⁸

And, in his response to Jack DeBaun, the person debating Wieland in the 2002 exchange mentioned previously, Horner states:

What we found was heme, a form of iron that has a biological origin, but of course, not any soft tissue or any other component of a cell. It's preserved because it's iron.¹⁹

Conclusion

Were actual red blood cells found in the *T. rex* bone as young-earth creationists claim? The data says "no." The objects may be the remnants of blood cells—residual products resulting from cellular breakdown—but they clearly lack cell walls and other structures to claim they are red blood cells. Interestingly, Wieland seems to admit as much in his 2002 exchange with Jack DeBaun where he states:

¹⁶ Mary H Schweitzer, et al., "Preservation of biomolecules in cancellous bone of *Tyrannosaurus rex*," *Journal of Vertebrate Paleontology*, Vol. 17, No. 2, June 1997, p. 349.

¹⁷ Mary H Schweitzer, John R. Horner, "Intravascular microstructures in trabecular bone tissues of *Tyrannosaurus rex*," *Annales de Paléontologie*, Volume 85, Issue 3, July-Sept 1999, p. 189.

¹⁸ [Response to Adrian Crenshaw](http://homepages.ius.edu/ADRIAN/g180/jackhorner.txt), (<http://homepages.ius.edu/ADRIAN/g180/jackhorner.txt>)

¹⁹ [Response to Jack DeBaun](http://www.televar.com/~jnj/item6.htm), (<http://www.televar.com/~jnj/item6.htm>)

The immunological reaction was the factor that, coupled with the histological appearance, made it more reasonable to claim these were actual red blood cells (*i.e., their remains*) [emphasis added].²⁰

What is significant about this statement is, for the first time, Wieland seems to clarify that what he and other young-earth creationists are calling red blood cells are, in fact, cell remains. The problem is, regardless of the spin one puts on it, cell remains are not “real blood” and “morphologically intact red blood cells.”

Young earth creationists continue to cite the *Earth* article and ignore the other data, including the statements from Horner that no blood cells were found. They claim scientists have simply backpeddled from the original findings because admitting the objects were blood cells undermines the evolutionary dating scheme. However, the discovery of intact dinosaur blood cells would be an amazing find. What researcher would want to keep it quiet? At the same, what researcher would be able to keep it quiet? To suggest a broad conspiracy among researchers to hide such a discovery is simply ludicrous.

As Christians, we have a responsibility to pursue truth in all matters. When we are wrong, we need to admit it. If we are unwilling to admit our errors in matters of science, why should anyone believe our statements about matters of theology? Intentional or not, young-earth creationists have fostered the idea that actual dinosaur blood—intact red bloods with hemoglobin—was found by Schweitzer and her colleagues. Rather than digging in their heels, they should at the very least, provide full disclosure of the facts surrounding this discovery.

²⁰ Ibid. See first CW statement.