complexity of the automated systems needed to assemble the nano-scale structures and machines found within living cells. Spire is likely to be an elaborate nano-scale alignment tool with some machine-like functions. This would make spire far superior to modern tools engineered by humans. All this attests to the work of an intelligent designer who engineered these structures and machines in an incredible intricate manner.

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More confirmation for dinosaur soft tissue and protein

Carl Wieland

A brief history

Creationists were fascinated, and evolutionists mostly skeptical, when evolutionist Mary Schweitzer claimed in the 1990s that an unfossilized piece of *T. rex* bone contained red blood cells. Further, that there was immunological and spectroscopic evidence of the presence of hemoglobin, the oxygen-carrying protein that gives red blood cells their colour.[1]

Then in 2005, Schweitzer announced a further sensational discovery in a different *T. rex* bone. After the mineral matrix was dissolved,[2] what remained were structures with all the appearance of soft tissue, still soft and stretchy. Some of these appeared to be transparent branching blood vessels, with a substance inside them containing further structures looking just like nucleated red blood cells, and able to be squeezed out of the vessels (figure 1). But how could such fragile structures survive for millions of years?

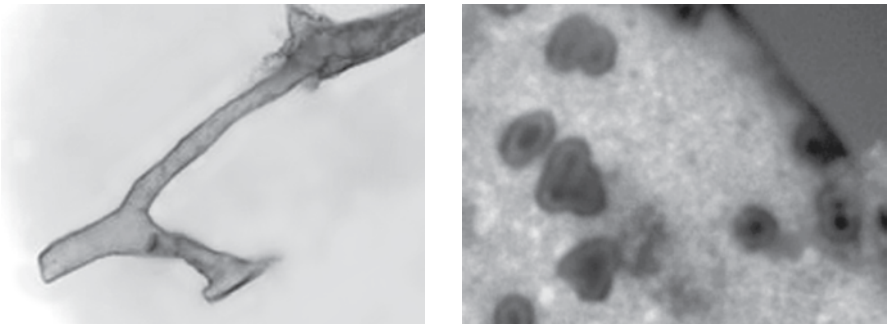
Gradually, further reports strengthened the case that Schweitzer had indeed discovered evidence of astonishing preservation of organic material in fossils. In 2007, Schweitzer and her team had performed careful tests to establish the presence of the protein collagen in the dino fossil—an important bone protein. They were even able to sequence stretches of it, which showed that it was 58% similar to collagen from a chicken, and 51% similar to that from a frog.[4]

It has been pointed out many times that fragile, complex molecules like proteins, even if hermetically sealed, should fall apart all by themselves from thermodynamic considerations alone in well under the 65 million years that evolutionists insist have passed since Schweitzer's *T. rex* specimen was entombed.[5,6] Furthermore, bones of an *Iguanodon* allegedly twice as old (dated to 120 Ma) contained enough of the protein osteocalcin to produce an immune reaction.[7]

In a seeming counter to the mounting evidence, in mid-2008 a paper claimed to have found that the transparent blood vessels, for instance, were the result of recent bacterial formation of biofilms, forming "endocasts" that followed the shape of where the original vessels lay, and that the red blood cells are actually iron-rich spheres called framboids. However, there were substantial reasons why not just creationists, but Schweitzer and other non-creationists were not at all convinced by these claims.[8]

The new findings

A recent announcement by Schweitzer and others, in the prestigious journal *Science*, has now added substantial evidence to bolster her previous findings.[9] The specimen



Photos by M. H. Schweitzer[3]

Figure 1. Left, The flexible branching structures in the *T. rex* bone were justifiably identified as "blood vessels". Right, These microscopic structures were able to be squeezed out of some of the blood vessels, and can be seen to "look like cells" in the researchers words.

on this occasion was a piece of fossil hadrosaur (duckbilled dinosaur) bone (*Brachylophosaurus canadensis*) regarded by evolutionary assumptions as being 80 million years old.

In short, the researchers found evidence of "the same fibrous matrix, transparent, flexible vessels, and preserved microstructures she had seen in the *T. rex* sample".[10] Only this time they went to exceptional lengths to silence critics.

Critics said that her claims, which given the millions of years perspective are indeed "extraordinary", required extraordinary evidence—but ample evidence has already been provided. Yet the critics demanded additional protein sequencing, super-careful handling to avoid claims of contamination, and confirmation from other laboratories.

Extraordinary measures were therefore taken by Schweitzer and her team to keep the sample away from contamination until it reached the lab. They used an even more sophisticated and newer mass spectrometer, and sent the samples to two other labs for confirmation. What they have reported finding is not just collagen, but evidence of two additional proteins—elastin and laminin. They also found structures uncannily resembling the cells found in both blood and bone, as well as cellular basement membrane matrix. And, once again, hints of hemoglobin, gleaned from applying hemoglobin-specific antibodies to the structures and seeing if the antibodies would bind to them.

Some scientists are still skeptical about the hemoglobin, which is "difficult to identify with current technology". Pavel Pevzner of the University of California, was quoted as saying that if it is not a contaminant, it would be "much bigger news [than the confirmed discoveries of blood vessels and other connective tissues in] this paper."[11]

Even leaving aside the hemoglobin, the Schweitzer *et al* paper is huge news. Pevzner had been critical of the technique used in Schweitzer's analysis of the *T. rex* protein, but now he says that her new study "was "done the right way", with more stringent controls to guard against contamination", for one thing.

There were eight collagen proteins alone discovered from the hadrosaur fossil, which revealed twice as many amino acids as the previous tyrannosaur specimen. These were compared with sequences from animals living today as well as from mastodon fossils and her *T. rex* sequences. The hadrosaur and tyrannosaur collagens were closer to each other than the others, and each were closer to chickens and ostriches than to crocodilians, for instance—results which would also confirm her previous identification of *T. rex* collagen.

The samples were identified as collagen by both sophisticated mass spectroscopy and binding antibody techniques. They were also examined via both light and electron microscopy, which confirmed that they had the appearance of collagen as well.

As Schweitzer says, "These data not only build upon what we got from the *T. rex*, they take the research even further."

Power of the paradigm

Philosophers of science have written much about the power of a paradigm, especially when it has worldview implications, such as long-age belief. Such a paradigm is seldom, if ever, overthrown simply because of observations that contradict its expectations. Even Schweitzer herself, despite professing to be an evangelical Christian, is extremely defensive about the old-age paradigm.

What happens is that auxiliary hypotheses and assumptions are constructed to preserve the intactness of the core hypothesis, in this case what is known "as deep time". In simple terms, proteins should simply not have been able to last for these tens of millions of years. So when they are found in specimens dated this old, the paradigm is under serious threat.

The most straightforward fit to the evidence is that the time of burial of these dinosaurs was not millions of years ago at all, but only thousands of years ago at most. As the evidence continues to mount that dinosaur fossils do indeed contain well-preserved soft tissue structures and identifiable proteins, the assumption that will increasingly be made is that "we now know that such tissue components *can* last that long, after all." Unfortunately, not many will see this as the paradigm-rescuing assumption that it is.

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