Investigating Origins

Soft Dinosaur Tissue

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The scientific world was rocked in 2005 when paleontologist Mary Schweitzer announced that she had discovered soft tissue in the fossilized skeleton of a *Tyrannosaurus rex*, dated by conventional methods to 68 million years ago. One of the creature's legs was broken, so Schweitzer took it to her laboratory at North Carolina State University in Raleigh and dissolved the bone fragments in acid. When she examined the result, she noticed soft tissue consisting of blood vessels and structures that looked to be whole, intact cells, something impossible under the reigning theory of fossilization (Fields 2006: 50). According to the May 2006 issue of the journal *Smithsonian*,

> The finding amazed [Schweitzer's] colleagues, who had never imagined that even a trace of still-soft dinosaur tissue could survive. After all, as any textbook will tell you, when an animal dies, soft tissues such as blood vessels, muscle and skin decay and disappear over time, while hard tissues like bone may gradually acquire minerals from the environment and become fossils. Schweitzer, one of the first scientists to use the tools of modern cell biology to study dinosaurs, has upended the conventional wisdom by showing that some rock-hard fossils tens of millions of years old may have remnants of soft tissues hidden away in their interiors (ibid.)

Schweitzer found evidence of heme in the T. rex bones. Heme is a component of hemoglobin, the protein that makes red blood cells red. "If particles of that one dinosaur were able to hang around for 65 million years," comments *Smithsonian*, "maybe the textbooks were wrong about fossilization" (ibid. 53).

The journal further reported that additional discoveries by Schweitzer and her lab technician, Jennifer Wittneyer, "have shown that the discovery of soft tissue in [T.] rex wasn't just a fluke" (ibid. 55). Similar findings have been made in another T. rex, in a theropod dinosaur unearthed in Argentina, and in a woolly mammoth dated by conventional methods to 300,000 years ago (ibid.). According to Thomas Holtz Jr., a dinosaur paleontologist at the University of Maryland, these discoveries demonstrate that "we really don't understand decay. There's a lot of really basic stuff in nature that people just make assumptions about" (ibid.).

The discovery of soft tissue in fossilized remains, as Holtz pointed out, demonstrates the unreliability of many assumptions that govern the field of paleontology. What is taught as irrefutable scientific dogma one decade is eventually replaced by another, which, in turn may ultimately be replaced by yet another. Schweitzer's discovery has created a new reigning paradigm, and nobody knows how long it will be before this one, too, is replaced.

Reference

Fields, H. 2006. "Dinosaur Shocker!" *Smithsonian* 37, no. 2.

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