



Home

Topics

Events

Articles

About Us

Contact

Like 1k

Send

Tweet

EMAIL

PRINT

ENLARGE

DNA and bone cells found in dinosaur bone

by [Dr Jonathan D Sarfati](#)

Published: 11 December 2012 (GMT+10)

For the last 15 years, Dr Mary Schweitzer has been rocking the evolutionary/uniformitarian world with discoveries of soft tissue in dinosaur bones.¹ These discoveries have included blood cells, blood vessels, and proteins like collagen. But under *measured* rates of decomposition, they could not have lasted for the presumed 65 million years (Ma) since dino extinction, even if they had been kept at freezing point (never mind the much warmer climate proposed for the dinosaurs).² As she said in a popular TV show:

When you think about it, the laws of chemistry and biology and everything else that we know say that it should be gone, it should be degraded completely.³

... as well as the following in a scientific paper:

The presence of original molecular components is not predicted for fossils older than a million years, and the discovery of collagen in this well-preserved dinosaur supports the use of actualistic conditions to formulate molecular degradation rates and models, rather than relying on theoretical or experimental extrapolations derived from conditions that do not occur in nature.⁴

As a careful scientist, after Dr Schweitzer found elastic blood vessels and other soft tissue, she rechecked her data thoroughly. A report quoted her as follows:

"It was totally shocking," Schweitzer says. "I didn't believe it until we'd done it 17 times."⁵

Other evolutionists saw the baneful implications to their long-age dogma, and claimed that the blood vessels were really bacterial biofilms, and the blood cells were iron-rich spheres called framboids.⁶ Yet this ignores the wide range of evidence Schweitzer adduced, and she has answered this claim in detail.^{7,8} However, Schweitzer herself maintains her faith in the long-age paradigm.⁹

Dino bone cells and proteins

Schweitzer's more recent research makes long ages even harder to believe. Here, she analyzed bone from two dinosaurs, the famous *Tyrannosaurus rex* (MOR 1125¹⁰) and a large duck-billed dinosaur called *Brachylophosaurus canadensis* (MOR 2598).¹¹ Bone is an amazing structure with the ability to re-work in response to stress,¹² and uses the finely designed protein osteocalcin,¹³ which has been found in the best known duck-billed dinosaur, *Iguanodon*, 'dated' to 120 Ma.¹⁴ The most plentiful cells in bones are *osteocytes*. These have a distinctive branching structure that connects to other osteocytes, and have a "vital role" in "immediate responses to changing stresses."¹⁰

James D. San Antonio, Mary H. Schweitzer, Shane T. Jensen, Raghu Kalluri, Michael Buckley, Joseph P. R. O. Orgel. (2011). Dinosaur Peptides Suggest Mechanisms of Protein Survival. *PLoS ONE* 6(6): e20381. doi:10.1371/journal.pone.0020381

Schweitzer's team again removed the hard bony mineral with the chelating agent EDTA. They found "transparent cell-like microstructures with dendritic [branching, just the shape expected for osteocytes] processes, some containing internal contents," from both dinos.

They also used antibodies to detect the globular proteins actin and tubulin, used to make filaments and tubes in *vertebrates*. The proteins from both dinos had similar binding patterns to the same proteins from ostrich and alligator. They are not found in



free EMAIL NEWS

SEND



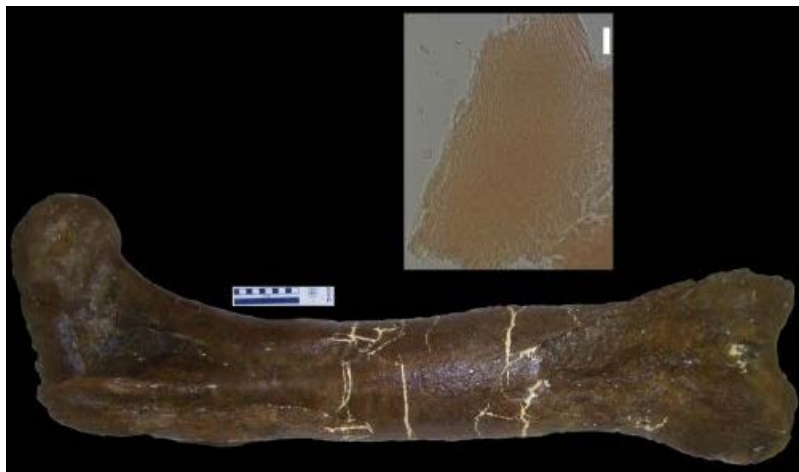
View Item US \$12.00



View Item US \$19.00



View Item US \$19.00



bacteria, so this *rules out contamination*. In particular, these antibodies did not bind to the type of bacteria that forms biofilms, “thus a biofilm origin for these structures is not supported.”¹⁰ Furthermore, they tested for collagen, a fibrous *animal* protein, and it was found in these bones—but *not* in surrounding sediments.

Furthermore, because actin, tubulin, and collagen are not unique to bone, they tested for a very distinctive osteocyte protein called PHEX. This stands for **Phosphate-regulating endopeptidase, X-linked**, which is vital in depositing the hard bone mineral. And indeed, antibodies specific to PHEX detected this unique bone protein.¹⁵ *Detecting a distinctive bone protein is very strong support for osteocyte identification.*

The problem for long ages is as they ask:

Cells are usually completely degraded soon after the death of the organism, so how could ‘bone cells’ and the molecules that comprise them persist in Mesozoic [evolutionary dino-age] bone?¹⁰

They try to solve this problem by proposing that bone protects the cells from bacteria that cause degradation. Bone would hinder the cells from swelling that comes before cells self-destruct (autolysis) as well. They also propose that the surfaces of the mineral crystals attract and destroy enzymes that would otherwise speed up degradation. They propose that iron may play a vital role too, both by helping to cross-link and stabilize the proteins, as well as by acting as an anti-oxidant.

Actually, this is all reasonable from a biblical creationist perspective, up to a point. Measured decay rates of some proteins are compatible with an age of about 4,500 years (since the Flood), but not with many millions of years. However, seeing not only proteins but even cell microstructures after 4,500 years is *still* surprising, considering how easily bacteria can normally attack them. These ideas could help explain survival over thousands of years. But they seem totally implausible for millions of years, since the above preservation proposals could not stop ordinary breakdown by water (hydrolysis) over vast eons.¹⁶

Dino DNA

The problem for long-agers is even *more* acute with their discovery of DNA. Estimates of DNA stability put its upper limit of survival at 125,000 years at 0°C, 17,500 years at 10°C and 2,500 years at 20°C.² One recent report said:

“There is a general belief that DNA is ‘rock solid’—extremely stable,” says Brandt Eichman, associate professor of biological sciences at Vanderbilt, who directed the project. “Actually DNA is highly reactive.”

On a good day about one million bases in the DNA in a human cell are damaged. These lesions are caused by a combination of normal chemical activity within the cell and exposure to radiation and toxins coming from environmental sources including cigarette smoke, grilled foods and industrial wastes.¹⁷

A recent paper on DNA shows that it might be able to last as much as 400 times longer in bone.¹⁸ But even there, there is no way that DNA could last the evolutionary time since dino extinction. Their figures of the time till complete disintegration of DNA (“no intact bonds”) is 22,000 years at 25°C, 131,000 years at 15°C, 882,000 years at 5°C; and even if it could somehow be kept continually below freezing point at –5°C, it could survive only 6.83 Ma—only about a tenth of the assumed evolutionary age. The researchers state:

“However, even under the best preservation conditions at –5°C, our model predicts that no intact bonds (average

length = 1 bp [base pair]) will remain in the DNA ‘strand’ after 6.8 Myr. This displays the extreme improbability of being able to amplify a 174 bp DNA fragment from an 80–85 Myr old Cretaceous bone.¹⁸

Yet Schweitzer’s team detected DNA in three independent ways. Indeed, one of these chemical tests and specific antibodies specifically detect DNA in its double-stranded form. This shows that it was quite well preserved, since short strands of DNA less than about 10 bp don’t form stable duplexes. The stain DAPI¹⁹ lodges in a groove of a stable double *helix*, which requires even more bp.

“

Cells are usually completely degraded soon after the death of the organism, so how could ‘bone cells’ and the molecules that comprise them persist in Mesozoic [evolutionary dino-age] bone?—Mary Schweitzer et al.

”

*length = 1 bp [base pair])
will remain in the DNA
'strand' after 6.8 Myr.—
M.E. Allentoft et al.*

Again, the first possible response by long-agers is “contamination”. But the DNA was not found everywhere, but only in certain internal regions of the ‘cells’. This pattern was just like in ostrich cells, but nothing like biofilm taken from other sources and exposed to the same DNA-detecting pattern. This is enough to rule out bacteria, because in more complex cells (such as ours and dinos), the DNA is stored in a small part of the cell—the *nucleus*.



Furthermore, Schweitzer’s team detected a special protein called *histone H4*. Not only is yet another protein a big problem for millions of years, but this is a specific protein for DNA. (DNA is Deoxy-riboNucleic Acid, so is negatively charged, while histones are alkaline so positively charged, so they

attract DNA). In more complex organisms, the histones are tiny spools around which the DNA is wrapped.²⁰ But histones are not found in bacteria. So, as Schweitzer *et al.* say, “These data support the presence of non-microbial DNA in these dinosaur cells.”¹¹

Conclusion

It’s hard to improve on one of Mary Schweitzer’s early quotes:

It was exactly like looking at a slice of modern bone. But of course, I couldn’t believe it. I said to the lab technician: “The bones are, after all, 65 million years old. How could blood cells survive that long?”²¹

But this just shows the grip of the long-age paradigm. A more reasonable and indeed scientific question would be:

This looks like modern bone; I have seen blood cells [and blood vessels] and detected hemoglobin [and now actin, tubulin, collagen, histones, and DNA], and real chemistry shows they can’t survive for 65 million years. What I don’t see is the claimed millions of years. So we should abandon this doctrine.

Related Articles

- ▶ [Radiocarbon in dino bones](#)
- ▶ [‘Schweitzer’s Dangerous Discovery’](#)
- ▶ [Still soft and stretchy](#)
- ▶ [Squirming at the Squishosaur](#)
- ▶ [“Ostrich-osaurus” discovery?](#)
- ▶ [Squishosaur scepticism squashed](#)
- ▶ [Dinosaur soft tissue and protein—even more confirmation!](#)
- ▶ [Dino proteins and blood vessels: are they a big deal?](#)

Further Reading

- ▶ [Dinosaur Questions and Answers](#)
- ▶ [Genetics Questions and Answers](#)

Related Media

- ▶ [T-rex red blood cells](#)

References

1. Schweitzer, M.H. *et al.*, Heme compounds in dinosaur trabecular bone, *PNAS* **94**:6291–6296, June 1997. See also Wieland, C., [Sensational dinosaur blood report!](#) *Creation* **19**(4):42–43, 1997; [creation.com/dino_blood](#). [Return to text.](#)
2. Nielsen-Marsh, C., Biomolecules in fossil remains: Multidisciplinary approach to endurance, *The Biochemist*, pp. 12–14, June 2002. See also Doyle, S., [The Real Jurassic Park](#), *Creation* **30**(3):12–15, 2008; [creation.com/real-jurassic-park](#) and Thomas, B., Original animal protein in fossils, *Creation* **35**(1):14–16, 2013. [Return to text.](#)
3. Schweitzer, M., Nova Science Now, May 2009, [cross.tv/21726](#). See also Wieland, C. And Sarfati, J., [Dino proteins and blood vessels: are they a big deal?](#) [creation.com/dino-proteins](#), 9 May 2009. [Return to text.](#)
4. Schweitzer, M.H., *et al.*, Analyses of soft tissue from *Tyrannosaurus rex* suggest the presence of protein, *Science* **316**(5822):277–280, 2007. [Return to text.](#)
5. Schweitzer, cited in *Science* **307**:1852, 25 March 2005. [Return to text.](#)
6. Kaye, T.G. *et al.*, Dinosaurian soft tissues interpreted as bacterial biofilms, *PLoS ONE* **3**(7):e2808, 2008 | doi:10.1371/journal.pone.0002808. [Return to text.](#)
7. Researchers debate: Is it preserved dinosaur tissue, or bacterial slime? [blogs.discovermagazine.com](#), 30 July 2008. [Return to text.](#)
8. Wieland, C., [Doubting doubts about the Squishosaur](#), [creation.com/squishosaur-doubts](#), 2 August 2008. [Return to text.](#)
9. Yeoman, B., Schweitzer’s dangerous discovery, *Discover* **27**(4):37–41, 77, April 2006. See also Catchpoole, D. and Sarfati, J., [Schweitzer’s Dangerous Discovery](#), [creation.com/schweit](#), 19 July 2006. [Return to text.](#)
10. Classification code—Museum of the Rockies. [Return to text.](#)
11. Schweitzer, M. H. *et al.* Molecular analyses of dinosaur osteocytes support the presence of endogenous molecules, *Bone*, 17 October 2012 | doi:10.1016/j.bone.2012.10.010. See also Thomas, B., Did scientists find *T. Rex* DNA? [icr.org/article/7093/](#), 7 November 2012. [Return to text.](#)
12. Wieland, C., [Bridges and bones, girders and groans](#), *Creation* **12**(2):20–24, 1990; [creation.com/bones](#). [Return to text.](#)
13. Sarfati, J., [Bone building: perfect protein](#), *J. Creation* **18**(1):11–12, 2004; [creation.com/bone](#). [Return to text.](#)
14. Embery G., Milner A.C., Waddington R.J., Hall R.C., Langley M.S., Milan A.M., Identification of proteinaceous material in the bone of the dinosaur *Iguanodon*, *Connect Tissue Res.* 44 Suppl **1**:41–6, 2003. The abstract says: “an early eluting fraction was immunoreactive with an antibody against osteocalcin.” [Return to text.](#)
15. Antibodies developed from chicken bound to the dino PHEX, but not those of alligators. Schweitzer has long used her data to push the dino-to-bird dogma, but for a response to earlier claims, see Menton, D., [Ostrich-osaurus discovery?](#) [creation.com/ostrich-dino](#), 28 March 2005. See also Sarfati, J., [Bird breathing](#)

[anatomy breaks dino-to-bird dogma](#), creation.com/dino-thigh, 16 June 2009. [Return to text.](#)

16. Compare Sarfati, J., [Origin of life: the polymerization problem](#), *J. Creation* **12**(3):281–284, 1998; creation.com/polymer. [Return to text.](#)
17. Newly discovered DNA repair mechanism, *Science News*, sciencedaily.com, 5 October 2010; see also Sarfati, J., [New DNA repair enzyme discovered](#), creation.com/DNA-repair-enzyme, 13 January 2010. [Return to text.](#)
18. Allentoft, M.E. *et al.*, The half-life of DNA in bone: measuring decay kinetics in 158 dated fossils, *Proc. Royal Society B* **279**(1748):4724-4733, 7 December 2012 | doi:10.1098/rspb.2012.1745. [Return to text.](#)
19. 4',6-diamidino-2-phenylindole, a fluorescent stain. [Return to text.](#)
20. Segal, E. *et al.*, A genomic code for nucleosome positioning, *Nature* **442**(7104):772–778, 17 August 2006; DOI: 10.1038/nature04979. See also White, D., [The Genetic Puppeteer](#), *Creation* **30**(2):42–44, 2008; creation.com/puppet. [Return to text.](#)
21. Schweitzer, M.H., Montana State University Museum of the Rockies; cited on p. 160 of Morell, V., Dino DNA: The hunt and the hype, *Science* **261**(5118):160–162, 9 July 1993. [Return to text.](#)

6,000 years of earth history. That's a long time in our opinion! Over 8,000 free web articles on creation.com. That's a lot of information! Take advantage of this free information but please support CMI as God provides. Thank you. [Support this site](#)

Comments closed



Readers' comments

Israel S., Philippines, 11 December 2012

Once again, science, real science, adds credence to how our God is a great God, who created the world in six days just as he claimed, and did not need to use a long and extremely inefficient process. This article is a great challenge to the compromiser, and indeed, the long-age paradigm itself.

First blood cells and blood vessels, now DNA! This is quite the update! Bless you, CMI, for your continued work!

Konstantinos -., Cyprus, 11 December 2012

So, what are the chances to recreate the complete genome of a dinosaur (using these and other sources of DNA from assumed relative species), plant it in a living cell and get a living, genetically sick dinosaur?

Not that I would ever be happy to see one of these gigantic monsters around but it's worth trying, right?

Can these DNA fragments be sequenced efficiently somehow? Perhaps if MANY small fragments get found, filed, processed and compared to existing species?

Jonathan Sarfati responds

It seems most unlikely, because the DNA is extremely fragmented. See [Could we clone a mammoth?](#) in [Mammoth—riddle of the Ice Age](#) for the arguments. They problems would be exacerbated for dino fossils, because dino fossils were the result of the Flood, while mammoth fossils are centuries younger, near the close of the Ice Age.

John L., United States, 11 December 2012

Thank you for the interesting article on preservation of proteins and DNA in dinosaur bone. It is a confirmation of previous studies. I have worked with both DNA and collagen and both are very susceptible to enzyme degradation once tissue integrity is broken down and all sorts of proteolytic enzymes and endo/exonucleases are released into the organism's body. DNA in particular is very unstable. As well, secondary degradation processes such as acids/moisture in the soils and heating/cooling should further eliminate any residual material—especially over long periods of time. These results strongly argue for a more recent deposition of dinosaur tissue than the supposed millions of years.

John L. Ph.D., M.D., Ph.D.

Alex K., Croatia, 11 December 2012

Even if they found a living *T. Rex*, they would undoubtedly call it a marvel of evolution. It's hopeless.

Patrick D., Canada, 11 December 2012

It feels like if God would be saying something like: "Ok, they really do not want to get it. Even with a living *T. Rex*, they probably would still stick to their lies and reject the data and the truth anyway."

I mean, what proof they need more than this? The next step would be God bringing a living *T. Rex* right in their lab and even there. ...

→ **Jonathan Sarfati responds**

Jesus on the rich man and Lazarus in [Luke 16:27–31](#):

And [the rich man] said, "Then I beg you, father, to send [Lazarus] to my father's house—for I have five brothers—so that he may warn them, lest they also come into this place of torment." But Abraham said, "They have Moses and the Prophets; let them hear them." And he said, "No, father Abraham, but if someone goes to them from the dead, they will repent." He said to him, "If they do not hear Moses and the Prophets, neither will they be convinced if someone should rise from the dead."

Josef L., United States, 11 December 2012

This is excellent. Because I recently read an article from *New Scientist* which claimed that the longest possibility that DNA could survive is 6.8 million years, and even that was a very generous estimate. So it would be very unlikely that it could survive for over 65 million years, but of course, it fits perfectly with a 4500–6000 year time frame.

→ **Jonathan Sarfati responds**

Thank you. The [New Scientist article](#) was reporting and commenting on the Allentoft paper in Ref. 18.

Dennis H., United States, 11 December 2012

Over the last few years I have become most intrigued with the discovery of Dr. Mary Schweitzer and "et al." For me it was an answer to one of my prayers. Their work is an amazing study of blind disbelief in what their research and the hand of God is trying to teach them. In a CBS *60 Minutes* report, one of the helpers in this find is hoping to create a dinosaur from a chicken. WOW! A Dino-Fli-A sandwich coming up. Yet this is not the only skeleton in their dinosaur closet that God is rattling for their attention. One can only wonder what will happen to Dr. Schweitzer if she keeps this up. Sooner or later she may be blackballed by her fellow "open minded" "et al." Still, truth can not be silenced for long. Keep up the great reporting CMI. Thanks.

Alan D., United States, 11 December 2012

A thought on the chemical stability of DNA that makes Schweitzer's discoveries even more interesting: Some have commented on the 'rock solid' stability of DNA, and others on the lability of that molecule. Truth is, it's both isn't it?

DNA is highly stable under certain conditions, namely in the tightly controlled milieu of the living cell. But its fragility is evident once death removes the stabilizing environment and it is exposed to the degrading forces of enzymes, oxygen, light, etc.

This dual character of DNA is typical of biomolecules, and that's one of the many remarkable features of the beautiful engineering of life.

All praise to the Lord, our God and Maker!

→ **Jonathan Sarfati responds**

Actually, DNA is unstable in our cell too, as explained in the article, because of all that water and the resulting hydrolysis (see [Origin of life: the polymerization problem](#)). The reason that we are not a mutated mess is all the repair systems in our cells (see [New DNA repair enzyme discovered](#)).

Ian H., Australia, 12 December 2012

If everyone who reads this article would pray for this courageous lady—who knows? I have immense admiration for her going

against the establishment doctrine, the pressure she must have endured to 'fudge' her results must have been tremendous.

➔ **Jonathan Sarfati responds**

Especially pray that she finally breaks free of the uniformitarian millions-of-years paradigm that still holds her in its grip. See '[Schweitzer's Dangerous Discovery](#)'.

● **John T.**, Canada, 12 December 2012

"...supports the use of actualistic conditions to formulate molecular degradation rates and models, rather than relying on theoretical or experimental extrapolations derived from conditions that do not occur in nature." Translation: When real, experimental science disproves evolution, ideology should rule over this real science. It reminds of what a famous Doctor once said: "The very powerful and the very stupid share one thing in common. They don't alter their views to fit the facts; they alter their facts to fit the views." I guess that should be "the very powerful, the very stupid, and evolutionists."

This is another terrific scientific article by Dr. Sarfati: clear, concise, and information-rich. He is very good at identifying the key points of each issue.

● **Jeannette P.**, United Kingdom, 12 December 2012

Very interesting!

As was said, we really do need to pray for this lady and her colleagues. Even if they could accept that these fossils may NOT be millions of years old, this would not convince a staunch evolutionist that evolution is not true—such is the depth of evolutionary brainwashing. Most likely they would merely put *T. rex* etc in the same category as the [coelacanth](#) or [Wollemi pine](#) and gasp in amazement that these [creatures](#) had after all [managed to survive unchanged for millions of years](#).

Prayer is the only thing we can do in that case. [2 Corinthians 10:3–5](#) says:

For though we live in the world we are not carrying on a worldly war, for the weapons of our warfare are not worldly but have divine power to destroy strongholds. We destroy arguments and every proud obstacle to the knowledge of God, and take every thought captive to obey Christ.

Wish I would learn this lesson more thoroughly!

By the way ... as was pointed out in the article, finding DNA etc in bones that are only 4–5,000 years old is still amazing. Is it likely that these particular dinosaurs died more recently—centuries or even millennia after the Flood?

➔ **Jonathan Sarfati responds**

Thank you for the comments. As for the question at the end, most likely not; one would need to posit some sort of catastrophe after the Flood to bury such a gigantic creature. It's quite different from the [woolly mammoths, buried by catastrophic dust storms near the end of the Ice Age](#).

● **Cameron M.**, Australia, 12 December 2012

I decided to go through the old articles ([Schweitzer's Dangerous Discovery](#)—for one) and look at the Referenced articles. Was interesting to learn more about Dr Schweitzer. Like information that she has [Jeremiah 29:11](#) on her office wall:

For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future.

Clearly, God has his plans for her and her work. Prayerfully, she will come to a conclusion that changes her current thinking.

● **Theodore S.**, United States, 13 December 2012

There is another source of information regarding DNA stability, forensic DNA papers. Analysts store DNA specimens rigorously excluding water, but freezing is said to cause shearing fractures. Of the DNA under 83 year old stamps, 60% was unusable for identifications by DNA profiling.

Peter S., Australia, 14 December 2012

Thank you, Jonathan, great article and easy to understand—even for me!

Looking forward to catching up with you all at the Super Camp.

Peter Stokes

Salt Shakers

→ **Jonathan Sarfati responds**

Thanks Peter. I hope you enjoy the Super Camp, even though I won't be there ;)

Pekka R., Finland, 14 December 2012

Thank you for an excellent analysis. Has there been any C-14 analysis of these specimens carried out?

Michael F., United States, 14 December 2012

So, are you trying to say that the earth is not older than 6,000 years because ONE scientist claims to have found some DNA in ONE dinosaur bone that should have been degraded if it was millions of years old?

Dr Jonathan Sarfati responds: It takes only one. So what is your explanation for the independent lines of evidence for DNA, and other independent measures of its instability?

Also, there are [100+ lines of scientific evidence for a young age of the earth and the universe](#). But even more important, the ONE eye-witness, the Creator Himself, has revealed that the [earth is only about 6,000 years old](#).

MF: What about the Grand Canyon? It took millions of years for the Colorado River to carve out the Grand Canyon? There is no debate on that.

JS: There most definitely **is**—see [How old is Grand Canyon?](#) I've been there, and standing at the rim, it's hard to see that small river. So a far larger flow must have carved this, and current river is just trickling on the bottom of the already-carved valley. [Ph.D. geologist Steve Austin has presented more evidence of this](#). Also, the strata look like a stack of giant pancakes, with flat contact lines; long times between them would have produced jagged contacts from millions of years of erosion (see [Flat Gaps: 'Millions of years' are missing](#)). And the [bent strata](#) point to huge vertical movements before the rocks had a chance to harden (solid rock breaks rather than bends).

Michael F., United States, 14 December 2012

Have you heard of Ice Cores?

Dr Sarfati responds: Of course. See [Ice cores vs the Flood](#).

MF: Scientists can count back each year from annual layers of snow like counting the age of a tree by its rings. They have ice cores over 500,000 years old.

JS: Can they really? Come back when you've read *and understood* the above. You've already had one go at this article without obeying our feedback rules to check out our site first (see comment above).

MF: Speaking of Trees there is living tree called "OLD Tjikko" which is 9,550 years old in Sweden. It's roots were dated with carbon dating. I would love to hear your thoughts on that.

JS: Happy to oblige—see [Swedish trees older than the universe? A closer look at a claim about the world's oldest trees—allegedly older than the biblical date of creation](#).

MF: Happy Solstice.

JS: It's very amusing that many bibliophobes make a point of celebrating the Solstice, because it's a *geocentric holiday!* The name means that the "sun stands still", i.e. that its noon position is either the highest or lowest altitude in the sky above the horizon. So the seasonal movement of the sun's path across the sky stops then changes direction. For serious people, see [how the 25th December date for Christmas arose](#): clue: it came from a *Jewish* tradition. It couldn't be a borrowing from a pagan Solstice celebration, because Solstice (the northern hemisphere winter one) occurs three or four days before the

25th! Note also, Saturnalia is also too early to have been a source for Christmas—it was on the 17th December, and later ran to the 23rd.

Steve H., United States, 14 December 2012

Maybe I'm a bad reader but I wanted to but didn't see anywhere it told how this info was published somewhere else than in this article. Was it or will it?

I want to see it elsewhere in a "real" science magazine/journal because most non-believers won't bother to read an article only published here.

Jonathan Sarfati responds

The main primary sources from which the above article deduces its conclusions are references 11 (DNA in dinos) and 18 (rate of DNA decomposition). There may well be a version of this article in our [professional, peer-reviewed scientific Journal of Creation](#).

Graeme E., New Zealand, 15 December 2012

With an increasing number of dino soft-tissue samples being discovered, has anyone thought of running a Carbon 14 dating analysis on one (or more) of them? Within the 'creation network' are we able to source a sample and submit it for analysis. Or can we find someone who is sufficiently friendly to allow us to fund a Carbon 14 analysis on a small portion of their sample?

Jonathan Sarfati responds

Evolutionists have thought of it actually, arguing that a positive test for ¹⁴C would 'prove' that it is contaminated, since obviously a 65 Ma dino bone would have no ¹⁴C remaining ([begging the question](#) is a common fallacy among evolutionists). See [Why don't they carbon-test dino fossils?](#)

So a test would need to be on material that Dr Schweitzer has shown must be from the dinos, not contamination. Actually, I understand that some creationists are planning to radiocarbon-date some *Triceratops* soft tissue in their possession. If this happens, then you will hear about it on this site!

James B., United States, 17 December 2012

This evidence is one of those that the layman can easily understand and accept. Everyone knows that soft tissue does not last long when it is dead. Some other evidence one needs to say, "Well he says it is that way, but I do not know enough to say if he is right."

That along with [polystrate fossils](#) and [bent layers in multiple rock layers](#) are presently my favorite evidences to mention in a short discussion with someone.

With your great experience and intellect, I would like your suggestions for what few evidences you find the 'average Joe' can most understand and accept for accepting the biblical account.

Ed N., Canada, 17 December 2012

Great article. We were in contact with Dr. Mary about 8 months ago and she hinted something special was about to be published by her. Just wait she said. It was worth it!

Jonathan Sarfati: Indeed it was! It was probably Dr. Mary's most significant discovery to date.

Ed N. I am wondering about the accuracy of the statement about DNA being negative and histones (alkaline) being positive. I can understand that the acids would dissociate to a certain extent to give their conjugate bases and so end up being negative. That's OK I guess.

JS: Yes, the backbone of DNA contains phosphates, and [this Nucleic Acids page](#) from Michigan State University states:

Since a monophosphate ester of this kind is a strong acid (pKa of 1.0), it will be fully ionized at the usual physiological pH (ca.7.4) [to $-\text{PO}_4^-$].

It seems to be a good design feature, without which DNA would be even less stable than it is, as the article states:

Mono, di and triesters of the corresponding acid (phosphoric acid) are all known. Because of their acidity ($pK_a \approx 2$), the mono and diesters are negatively charged at physiological pH, rendering them less susceptible to nucleophilic attack. ... Clearly, a polymer in which monomer units are joined by negatively charged diphosphate ester links should be substantially more stable than one composed of carboxylate ester bonds.

Ed N. But all alkaline species (histones?) are electron donating and also end up being negative.

JS: I presume that would be, *start up* being negative.

Ed N. Now if the alkaline species get protonated by the acids then the whole thing works. The acids become negative and the protonated histones become cations and so positive. Just a comment.

JS: Exactly. It was using the [Brønsted-Lowry definition of base/alkali as proton acceptor](#) rather than the [Lewis definition](#) as an electron pair donor (explained for the benefit of our readers; Ed N. himself is a top Ph.D. chemist, so needs no instruction.)

The histones are rich in side chains containing $-NH_2$ groups, so readily become protonated to $-NH_3^+$.

There must be a lot more to that, since the amino acid sequences of histones are almost identical throughout all eukaryotes. Evolutionists claim that they are "conserved" by evolution, but a common *designer* makes more sense.

Ed N. Thanks again for the article.

JS: Thank you for the generous comments.

Comments closed



The Bible declares: In the beginning God created the heavens and the earth. Genesis 1:1

About

What we Believe
What We Are
What We Do
Who We Are
Our Logo
Contact

Articles

Feature Archive
Magazine Archive
Journal Archive
Feedback Archive
Book Reviews
Study Guides
Creation for Kids
Other Languages

Events

Request an Event
Ministry Programs
Speaker Bios
International Events
Event Calendar

Multimedia

Creation Live
Creation Video
DVD Previews
Genesis Unleashed
Radio Spots

Store

Books
Media
Magazines
Miscellaneous
Clearance
Packs
Specials

Topics

Q&A Creation Topics
Quotable Quotes
Bad Arguments
Creation Scientists

Affiliated Sites

Alien Intrusion
Biblical geology & earth science
Creation Book
Publishers
Other helpful sites

