'Feathered' dinos—no feathers after all!

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Ever since Darwin, evolutionists have had a huge difficulty: the fossil record lacks the innumerable 'missing links' predicted by them and required by their theory. Instead, all evolutionists can produce are a handful of debatable examples; whereas it's not just links that are missing but *whole lengths in the evolutionary chain*!

From time to time, evolutionists produce a transitional-series–du-jour. One of the most prominent recent claims is that birds evolved from theropod dinosaurs, a supposedly carnivorous group that included *T. rex* and *Velociraptor*. However, even a number of evolutionary paleo-ornithologists (fossil bird experts), such as Alan Feduccia, Professor Emeritus at the University of North Carolina, have been harshly critical of the dogmatic way in which the theory has been promoted. They partly blame this dogma for the notorious *Archaeoraptor* hoax of 1999–2000.

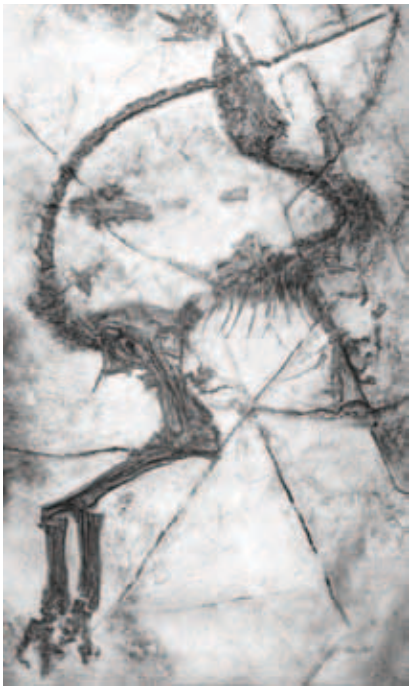

Photo: Wikipedia/Llez

Figure 1. *Sinosauropteryx* specimen GMV 2124, from Liaoning Province, China; in the *Staatliches Museum für Naturkunde* (State Museum of Natural History), Karlsruhe, Germany. Note the classic 'dead dino posture'—head thrown back, tail extended, with hind limbs bent.

Another big problem is the hugely different avian lung design. The alleged first bird *Archaeopteryx* had the classic avian through-flow lungs,[1] while the alleged feathered dino *Sinosauropteryx* had a clearly reptilian bellows lung.[2] And it was *younger* than *Archaeopteryx*, according to the evolutionists' own dating methods and contrary to evolutionary expectations. As Feduccia likes to quip, "You can't be older than your grandfather." While evolutionists claim that a trait might persist in a lineage well after a descendant lineage has evolved, the evidence they are claiming dates the version with a fully formed avian lung prior to the other. When, then, did the avian lung evolve? And the main point was that evolution was alleged to be supported by the order of fossil succession, but clearly this is not so.

Feathered dinosaurs?

One major point evolutionists use to support their 'missing link' between birds and dinos is dinosaurs having feathers. One of the most famous is *Sinosauropteryx* (meaning Chinese reptilian wing), a tiny creature discovered in 1996. The largest known specimen weighed only about 0.55 kg (1.2 lb), and was only 1.07 m (3.5 ft) long. This included its tail, the longest in relation to its total body length of any theropod.

CMI has long pointed out that there is nothing in the biblical creationist model that states that dinosaurs must lack feathers. Having said that, however, we also point out that the examples to date have been far from convincing. There is good reason to believe that the feathers were just frayed structural collagen fibres.[3,4]

Nonetheless, the fibres have their defenders as well, such as Prof. Zhang Fucheng of the Chinese Academy of Sciences and his colleagues, who claim to be "refuting recent claims that the filaments are partially decayed dermal collagen fibres."[5]

To support their claimed refutation, Zhang *et al.* claimed to have discovered colour-producing cell organelles called eumelanosomes and pheomelanosomes in a *Sinosauropteryx* specimen. These produce the very dark eumelanin and reddish-brown pheomelanin pigments in feathers. From this, they argued that they even had proof for stripes on its tail. But Prof. Theagarten Lingham-Soliar at the University of KwaZulu Natal, South Africa (and co-author of refs. 3 and 4), has criticized their claims as an: "optical illusion created when the SEM [scanning electron micrograph] is reproduced at low image size."[6] And in a recent paper, he has provided further evidence against this claim, and also inadvertently found strong evidence for the Genesis Flood.[7]

Animal decay

As noted above, *Sinosauropteryx* had a reptilian lung. How could we know? Because unlike most dinosaur fossils, which are nothing but mineralized bones, this creature was well enough preserved that one could analyze the shape of some of its internal organs. The fact that these details were preserved points to very rapid burial, before these organs could rot or be scavenged away. (Since the discovery of *Sinosauropteryx*, dinosaur blood cells, blood vessels and collagen have been found, which could not have lasted millions of years.) Also, the preservation of the internal organs would seem to rule out vertebrate predators or scavengers, since they "usually target the gut first".

Therefore, Lingham-Soliar wanted to find out why *Sinosauropteryx* should be so well preserved. He noted the typical 'dead dinosaur posture' with the neck and tail thrown backwards (all the fossils illustrated in this article illustrate that posture). In the last few years, scientists have theorized that this posture was actually opisthotonus, or

Photo: Wikipedia/FunkMonk

Figure 2. *Struthiomimus* dinosaur, in the 'dead dinosaur pose'.

a type of severe muscle spasm caused by malfunctioning of the central nervous system, especially with oxygen deprivation.[8] Thus they are the final death throes, which we have argued is consistent with most of them being drowned or buried alive by the Flood.[9]

Since no-one saw the creature die and fossilize, the next best thing is to see what happens to dead animals. (The study of decay and fossilization is called *taphonomy*). Lingham-Soliar analyzed two dead animals over time in a 'natural' setting: a genet (*Genetta genetta*), a cat-like animal but probably in the mongoose kind; and the Mozambique spitting cobra (*Naja mossambica*), the second deadliest snake in Africa, after the black mamba.

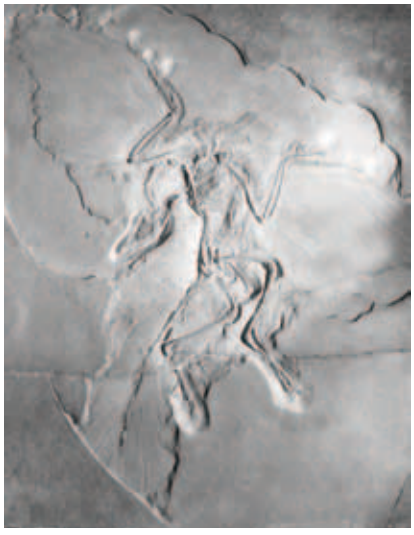

Photo: Wikimedia/H. Raab

Figure 3. *Archaeopteryx lithographica*, *Museum für Naturkunde* (Museum of Natural History) in Berlin. This is a picture of the actual fossil, not a cast. It also displays the 'dead dino pose'.

Sparing some of the gory details, with the genet, within a day, internal decomposition and bloating had already forced liquids out the body openings. Then maggots had their fill, but notably, not in the gut region until day 4. After that, the decay increased exponentially, so only one day later, almost all the soft tissue was gone, and the maggots left the carcass to pupate. The authors note about the creationist founder of taxonomy (classification):

> "Linnaeus (1767) stated that three flies may decompose the cadaver of a horse as quickly as a lion."

With the cobra, the process took longer, but once again, it was mainly maggots, but this time also ants, and again the gut was targeted quite late. Also, the insects liked the protein-rich connective tissue under the scales, which quickly separated the scales from the body. The authors note:

> "... it is possible to hypothesize from this phenomenon why scales are so rarely (or sparsely) preserved in small non-avian dinosaurs such as *Sinosauropteryx, Compsognathus* and *Juravenoter*—the absence of scales have [*sic*] frequently been used to suggest the presence of feathers in the animals' primary condition."

But neither the genet nor the cobra carcasses exhibited opisthotonus, which ruled out the earlier idea that the dead dinosaur posture was caused by gradual post-mortem changes.

Applications to *Sinosauropteryx* death

As noted, many evolutionists now believe that the dead dinosaur posture indicates suffocation. The specimen seemed to exhibit the signs of the same purged decomposition liquids as the dead genet. The preserved gut (including a pair of eggs) indicates that any scavenging was likely by insects, then the carcass was quickly buried "at most a few days after death". The authors attribute the death to toxic volcanic gases, then burial by volcanic ash or mud flows.

Actually the evidence, considering how widespread the dead dino posture is (also seen in *Archaeopteryx*), is consistent with the Genesis Flood. This would have produced greatly increased volcanic activity. The rapid burial is also consistent with the Flood. But what about insect decomposition? Actually, computer simulations have shown that the floodwaters would not have risen steadily but would have fluctuated so that land would be exposed for days at a time.[10] This is why we find dinosaur footprints and eggs, according to the BEDS hypothesis (Briefly Exposed Diluvial Sediments).[11] This exposure would allow insects time to colonize the carcass, but not time to eat the gut, before it was buried completely.

Crest, not feathers

Back to the heading of the article, the dead dino posture provided insights into what the claimed feather filaments actually were. The death throes caused buckling of the thick integument (skin) on the animal's back, which would be possible only if the *filaments were part of a single structure, not separate feathers*.

> "... compressive and tensile forces acting on a clearly unified structure, i.e. an upright frill or crest overlying the neck, back and tail of *Sinosauropteryx* ... as opposed to individual proto-feathers, is considered more reasonable ...
> "... the results include the most controversial issue associated with *Sinosauropteryx* and strongly

> demonstrate, based on soft tissue analysis and forensic animation, that the dorsal, externally preserved integumental tissue represents a dorsal crest rather than protofeathers … .”[7]

This supports their earlier statement:

> “The description presented here shows that the filamentous structures were internal support fibres that together with the overlying dermal tissue … comprised a composite structure, i.e. an external frill or crest (compare Jesus lizard, *Basiliscus plumifrons*, and frilled lizard, *Chlamydosaurus kingii*), comprehensively refuting the notion of free filaments, i.e. protofeathers in *Sinosauropteryx*.”

In further support, “the tail terminates in a unique, smoothly edged, spatula-shaped structure”, which near the end provided “little surface area for the attachment of protofeathers”. Also, because this creature seemed to live near a lake, according to evolutionary reconstructions anyway, “a crest-like structure on the tail or body or both [would be] useful in swimming”, so they express amazement that such a structure had not been considered.

Alternative explanation for ‘dead dino posture’: ligaments and buoyancy

Another theory for the ‘dead dino posture’ is also consistent with the Flood: it turns out that recently killed chickens spontaneously go into the same arched-back pose *after immersion under water*. They have a strong ligament along the spine, the Ligamentum elasticum, which is already taut. The buoyancy under water enabled the ligament to overcome the weight and pull the neck and tail back. As the muscles decayed, this ligament encountered even less resistance, so the bending increased even more.

This effect would have been even stronger in dinosaurs with long, slender necks and tails. They would have needed very strong, elastic ligaments for energy saving. The length would have also increased the leverage of the elastic forces.

Swiss sedimentologist Achim Reisdorf and German paleontologist Michael Wuttke, authors of a detailed study,[12] explained:

> “A strong Ligamentum elasticum was essential for all long necked dinosaurs with a long tail. The preloaded ligament helped them saving energy in their terrestrial mode of life. Following their death, at which they were immersed in water, the stored energy along the vertebra was strong enough to arch back the spine, increasingly so as more and more muscles and other soft parts were decaying. It is a special highlight that, in the *Compsognathus* specimen, these gradual steps of recurvature can be substantiated, too. Therefore, biomechanics is ruling the postmortem weird posture of a carcass in a watery grave, not death throes.”[13,14]

Of course, the Genesis Flood would provide excellent conditions for full immersion of animals! And either way, the creature must be buried very quickly to preserve that posture.

Conclusion

While feathered dinosaurs are not ruled out by the biblical creationist model, the claims of feathers are looking more and more dubious. In one of the most famous claimed feathered dinosaurs, *Sinosauropteryx*, the evidence indicates that the filaments were not separate feathers, but support fibres for a unified structure like a crest. Also, the death posture indicates suffocation or quick full immersion, and careful analysis of the normal decay process of animal carcasses in nature shows that it must have been buried completely within a few days at most.

References

1. Christiansen, P. and Bonde, N., Axial and appendicular pneumaticity in A*rchaeopteryx, Proceedings of the Royal Society of London, Series B* **267**:2501–2505, 2000.
2. Ruben, J.A. *et al*., Lung structure and ventilation in theropod dinosaurs and early birds, *Science* **278**(5341):1267–1270, 1997.
3. Feduccia, A., Lingham-Soliar, T. and Hinchliffe, J.R., Do Featured Dinosaurs Exist?: Testing the Hypothesis on Neontological and Paleontological Evidence, *J. Morphology* **266**:125–166, 2005 | DOI: 10.1002/jmor.10382; biology.kenyon.edu/courses/biol241/bird%20flight%202005%20Feduccia_Alan.pdf, 10 October 2005.
4. Lingham-Soliar, T., Feduccia, A. and Wang, X., A new Chinese specimen indicates that ‘protofeathers’ in the Early Cretaceous theropod dinosaur Sinosauropteryx are degraded collagen fibres, *Proc. Royal Soc. B* | doi:10.1098/rspb.2007.0352, Published online 23 May 2007.
5. Zhang F. *et al.*, Fossilized melanosomes and the colour of Cretaceous dinosaurs and birds, *Nature* **463**:1075–1078, 2010 | doi:10.1038/nature08740.
6. Lingham-Soliar T., The evolution of the feather: *Sinosauropteryx*, a colourful tail, *J. Ornithol.* **152**(3):567–577, 2011 | doi:10.1007/s10336-010-0620-y.
7. Lingham-Soliar T., The evolution of the feather: *Sinosauropteryx*, life, death, and preservation of an alleged feathered dinosaur, *J. Ornithol.* **153**(3):699–711, 2012 | DOI 10.1007/s10336-011-0787-x.
8. Marshall Faux, C. and Padian, K., The opisthotonic posture of vertebrate skeletons: post-mortem contraction or death throes? *Paleobiology* **33**(2):201–226, 2007.
9. Catchpoole, D., Death throes, *Creation* **31**(3):42–44, 2009; creation.com/death-throes.
10. Barnette, D.W. and Baumgardner, J.R., Patterns of ocean circulation over the continents during Noah’s Flood; in: Walsh, R.E. (Ed.), *Proc. Third Int. Conf. Creationism, Technical Symposium Sessions*, Creation Science Fellowship, Pittsburgh, PA, pp. 77–86, 1994.
11. Oard, M., *Dinosaur Challenges and Mysteries*, ch. 8, CBP, Atlanta, 2011; Thomas, B., The Authoritative Dinosaur Book, a review of *Dinosaur Challenges and Mysteries*, *J. Creation* **26**(3):38–39, 2012.
12. Reisdorf, A.G. and Wuttke, M., Re-evaluating Moodie’s opisthotonic-posture hypothesis in fossil vertebrates Part I: Reptiles—the taphonomy of the bipedal dinosaurs *Compsognathus longipes* and *Juravenator starki* from the Solnhofen Archipelago (Jurassic, Germany), *Palaeobiodiversity and Palaeoenvironments* **92:**119–168, 2012 | DOI 10.1007/s12549-011-0068-y.
13. Reisdorf and Wuttke; cited in: Why do dinosaur skeletons look so weird? *ScienceDaily.com*, 16 February 2012.
14. See also Wile, J., Arched necks in dinosaur fossils: Is water to blame? blog.drwile.com/?p=7118, 28 February 2012.