

## Feathered Dinosaurs — Fact or Fiction?

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1. Feathers are highly specialized organs and the distinguishing feature of birds. Even the flightless penguin is classified as a bird because of its feathers. Part of the bird's anatomy is a furcula or "wishbone" and usually a sternum. Birds are warm-blooded and necessarily light-weight, and, it was long argued, the feathers were not preserved in the fossil record because of their delicate nature. However, "flocks" of genuine fossil birds have recently been discovered in China. In contrast to birds, the reptiles have a heavy bone structure, are cold-blooded and have neither furcula nor feathers. The word "Dinosaur" was coined in 1840 by Richard Owen, the director of the British Natural History Museum. Although not a believer in Biblical creation, Owen was a vigorous opponent of Darwinian evolution. Dinosaurs are said to have lived from the Jurassic to the Cretaceous Age, that is, 140 to 65 million years ago. There are three classes of dinosaur: The ornithischian or "bird-hipped" type with two very large rear-legs and two very small fore-legs, think of the kangaroo, the ostrich and the T-Rex; The saurischian or lizard-hipped type that walked on four legs and the double-beamed type with four legs, a long neck and a long tail. Not all dinosaurs grew to be large; most were quite small even chicken-sized. In 1833 French paleontologist Geoffroy Saint-Hilaire proposed that the birds had evolved from the ornithischian dinosaurs; this speculation was likely based on the fact that both reptiles and birds are oviparous (lay eggs). Charles Darwin was a great synthesizer of other people's ideas and twenty-six years later, in 1859, gave the world his theory of evolution (*'Origin of Species'*). On p. 280 he lamented that the fossil record should be full of intermediate varieties of creature (transitions) but geology had not yet provided any. He confessed this to be: "the most obvious and gravest objection which can be urged against my theory." He then suggested the explanation was due to, "the extreme imperfection of the geological record". One-hundred and fifty years and tens of thousands of fossils later that situation has not changed!

2. However, Darwin's statement above provided a charter for fossil forgers because within months of the publication of the German edition of Darwin's *'Origin'* (in 1861) an impression of a single, modern-looking feather was "discovered" in the Jurassic limestone of Solnhofen quarry, southern Germany. It was dated at 150 million years and called *Archaeopteryx lithographica*, meaning "early wing". The limestone from this quarry was used to make lithographic plates for the printing industry while for some time a clandestine fossil forgery business had flourished there. The specimen is commonly referred to as "von Meyer's feather." The sale of this fossil to the Berlin and the Munich museums was negotiated by Dr. Karl Haberlein, medical officer for the district of Pappenheim near Solnhofen. Less than two months later, in 1861, another *Archaeopteryx* appeared from the same quarry. This was about as big as a pigeon, had remarkably clear feather impressions in the wing and tail areas and was headless. Moreover, it contained a very large furcula or wishbone but England's Thomas. H. Huxley declared this to be, "the greatest osteological difficulty presented by *Archaeopteryx*" and neither he nor Charles Darwin would accept this specimen as a genuine transition. Huxley also took delight in pointing out that the furcula was upside-down. Again, Dr. Haberlein negotiated the sale, this time to the British Natural History Museum. Its director, Sir Richard Owen, bought the specimen sight-unseen for 600 pounds (today, valued at two million); it is known as "the London specimen." German professor, Andreas Wagner, who had the opportunity to study this specimen, declared that it was nothing more than the reptile *Compsognathus* with feathers. He knew this chicken-sized dinosaur well, since he had discovered it and named it.

3. The third specimen at first named *Archaeornis* appeared 16 years later (1877) from the same quarry and was complete with the head and it had teeth which placed it nicely between the reptile and the bird. This time its sale was negotiated by Dr. Karl Haberlein's son, Ernst Haberlein, who demanded a stupendous price of 30,000 gold marks. National pride was at stake and the specimen finished in the Berlin Museum; it is referred to as the "Berlin specimen" and is the universal textbook exemplar. The early published engraving of this specimen included a furcula of the same shape and orientation as the London specimen, however, later photographs showed no sign of it.

4. Textbooks often speak about "many other examples" and by this they mean the remaining four specimens. The following is their description: A poorly preserved specimen discovered in 1956 and classified as an *Archaeopteryx*; it is known as the Maxberg specimen and was in the hands of a private collector but has disappeared in recent years. A specimen discovered in 1855, displayed in the Teyer Museum and known as a pterosaur until 1970 when it was reclassified as an *Archaeopteryx*; it is known as the Haarlem specimen. A specimen discovered in 1951, classified as a *Compsognathus longipes* then reclassified as an *Archaeopteryx* in 1973; it is known as the Eichstatt specimen. A specimen in another private collection classified as an *Archaeopteryx* in 1988 and referred to as the Solnhofen specimen. It should be emphasized that none of these four specimens show feather impressions, so-called fused clavicles (furcula or wish-bone) or any other avian characteristics; the only purpose for their being reclassified appears to be to swell the number of specimens. It is possible that Museum authorities were becoming concerned especially as two birdlike fossils named *Protoavis texensis* were found in 1983 with furcula and sternum but no feathers and, according to the geology, 75 Ma years before the *Archaeopteryx*. Certainly, questions were being asked and by some high-profile scientists from other disciplines and an International Conference was called at Eichstatt, Germany, in 1984.

5. Dr. Lee Spetner of the Weizman Institute, Israel, working in cooperation with British astrophysicist, Sir Fred Hoyle, long suspected that the London specimen was a fake and finally were able to examine the actual specimen at the British Museum. The date was December 1984. They were not allowed to touch the specimen, merely photograph it. No main-line science journal would publish their findings so they published a cut-down version in *The British Journal of Photography*. Later, in 1986, they published a full book giving all the documented details. Briefly, Hoyle and Spetner charged that the London specimen was actually that of a *Compsognathus* to which impressions of modern feathers and a "furcula" had been added. They suggested that the forgers had carved [or possibly masked off with wax and dissolved with acid] a shallow depression about the "wing" and "tail" areas, back-filled with a mixture of finely ground limestone and gum arabic then modern feathers pressed into this mixture. After setting, the feathers were stripped out leaving the two halves of the slab much as we find them today. Scanning electron microscope analysis of two very small samples was permitted, one taken in the wing area and a control sample taken beyond the fossil area. The control showed a clean crystalline structure as would be expected. The wing sample was amorphous suggesting that it was a mixture of fine particles and an organic i.e. likely gum arabic? Both analyses were confirmed by X-ray luminescence analysis but having come this close to proof of forgery, the Museum refused further tests.

6. Examination of the Berlin Specimen. None but the certified believer can expect to be permitted to examine the actual specimen, however, the published photographs taken over the years are almost as revealing. A popular engraving of this specimen was published in 1880 and it clearly had a furcula in the same location, of the same shape and the same orientation as that

in the London specimen. However, Carl Vogt had photographed this specimen shortly after its discovery in 1877 and Professor C. H. Hurst photographed this same specimen in 1893. Both photographs are identical and there is no furcula. Hurst pointed out that the popular 1887 textbook illustration had bent primary quill feathers (some bent by 40 degrees!) and that these originate in the ulna or fore-arm whereas on the fossil those same quill feathers were straight and originate in the manus or "hand." Controversy arose in which Hurst further pointed out that not only did Professor Dames 1884 description of the fossil state that the primary quills were attached to the longest finger but that bent feathers would in any case be useless for flight. W. D. Pyecraft of the British Museum also defended the straight feathers saying that most modern birds have straight feathers and they do originate in the hand. Incredibly, every modern photograph of the Berlin specimen now show these quill feathers as bent and originating in the fore-arm. According to the published photographs the change from straight to bent feathers took place between 1893 and 1923. If indeed this was a forgery then the forger had no choice but to use straight quill feathers and correctly placed them originating from the manus. It seems that later, someone at the Berlin Museum mistakenly thought that quill feathers originated in the ulna and illustrated them that way. Since that time the fossil itself has somehow been modified so that the incorrect illustrated version persists even in modern photographic reproductions.

7. In summary so far, there are just two fossil representatives of the alleged transition from the reptile to the bird: the London and the Berlin specimens. Both have feather impressions, both originated from the same quarry and passed through the hands of the same Haberlein family who were paid enormous sums of money. It is only the London specimen that has the alleged furcula but that bears no resemblance to any bird's wishbone — it has been described as a "bent sausage" and is up-side-down. There is said to be other specimens; these consist of four produced by reclassifying other fossils but none of these have feather impression or furcular. By the late 1980's Museum's began a PR campaign: Dinosaurs were now declared to have been hot blooded thus avoiding a major problem of the transition; the 1993 film Jurassic Park had a nimble team of dinosaurs. Then, in the 1990's, China offered a new opportunity.

8. In the past decade or so the belief that the dinosaur is the bird's ancestor has indeed been maintained by the fossil search in NE China. The Early Cretaceous sedimentary layers of the Jehol Group of Northeastern China, which includes outcrops in the Liaoning Province, have provided a rich source of fossils including: A large diversity of organic material such as well preserved insect wings, feathers and fur from birds and mammals and an almost identical theropod to the Late Jurassic *Compsognathus* found in the Solnhofen quarries of Germany. Of course, the local Chinese especially the Liaoning quarries, are very much aware of the Western interest in fossils showing the evolutionary development of the bird from the reptile. Indeed, Feduccia described this quarry as a "fake-fossil factory." The discoveries have been as follows: 1995. *Confuciusornis sanctus*. This bird is one of several suggesting "flocks." It has a beak, no teeth, but feathers and wing claws i.e. a modern-type bird. Found in the Late Jurassic placed it at 140 Ma, however, this presented a serious challenge to the London and Berlin *Archaeopteryx* since these are of the same age and claimed to be transitions! The incredible solution has been to reclassify the geological stratum for *Confuciusornis* moving it forward to the Early Cretaceous thus making it 100 Ma. 1996. *Sinosauropteryx prima*. Discovered in the Liaoning quarries it is in every respect a *Compsognathus* like those at Solnhofen; it was optimistically named "First-Chinese-Winged-Reptile." The avian claim was based on a line of "proto-feathers" or dino-fuzz i.e. collagen fibre, running along the spine. It had a lung physiology similar to the present-day crocodile.

1999. *Archaeoraptor liaoningensis sloan*. This was the exclusive catch of the *National Geographic* magazine (November 1999) but within two months was found to be a fake consisting of two and possibly five separate fossils. The magazine issued a five-page, close-print-no pictures, explanation in their October 2000 issue.

2003. *Microraptor gui*. This was supposedly a four-winged dinosaur that used its wings for gliding. Of the six specimens found, five show apparent feathers and were bought from the same "fake-fossil factory" at Liaoning quarry. This raises serious doubts while the sixth specimen has no sign of feathers; the researchers admitted that some of the pieces of rock had been glued together improperly.

9. In 1991 an event occurred that, while not concerned with the alleged reptile to bird transition, is causing the supporters of evolution some even deeper concerns today. Mary Schweitzer, at that time a graduate student, discovered blood cells in a piece of non-lithified *T.rex* bone. She describes herself as "a total Christian" yet is firmly committed to the millions of years and has advanced among the ranks of her peers. In 2004 she discovered soft tissue inside mineralized *T.rex* bone and in 2005 discovered proteins. These organic inclusions cannot possibly have survived for millions or even thousands of years. Her discoveries have been published and similar evidences are being reported by others. All told, they offer the greatest challenge to evolution yet!

10. For the Creationist concerned about seeing God's hand in all these events there are two of significance: First, Heilmann showed in 1926 that the *Compsognathus* has the closest anatomical structure to the birds including a forward facing pubis; How did Dr. Haberlein know this in 1861? Acts 15:18 "Known to God are all His works" indicating that while we have a free-will to love God, He has provided "evidences" for those who choose not to. Secondly, see the familiar passage in Romans 1:18-23.

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