Did Birds Evolve From Dinosaurs?

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The fossils provide much more discouragement than support for Darwinism when they are examined objectively, but objective examination has rarely been the object of Darwinist paleontology. The Darwinist approach has consistently been to find some supporting fossil evidence, claim it as proof for 'evolution,' and then ignore all the difficulties.

--Phillip Johnson, "Darwin on Trial" (2nd edition 1993, p. 86.)

INTRODUCTION

While all Darwinists believe in avian evolution, not all Darwinists believe birds evolved from dinosaurs. The article "In quest of the origin of birds" in the September '97 issue of *BioScience* highlights the two competing schools of thought among Darwinists: 1) birds evolved from jumping dinosaurs, or 2) birds evolved from gliding reptiles.

Apparently, Archaeopteryx doesn't appear to be much help to either view:

"Although called the Rosetta Stones of avian evolution because they provide so many clues to bird origins, the seven Archaeopteryx fossils that have accumulated on museum shelves during the past 130 or so years represent a creature quite removed from the dawn of birds. Archaeopteryx is widely accepted as the earliest bird in the fossil record."

The theropod-to-bird school believes birds evolved from theropod dinosaurs which developed feathers for insulation, and later developed flight.

The thecodont-to-bird school find this ridiculous. They say it's "biophysically impossible" to evolve flight from the "ground up" involving theropods, and propose instead some thecodonts glided through trees, and later developed flight.

However, if one were to look at the empirical evidence alone (eg. The fossil record) there doesn't seem to be good reason to accept *either* Darwinist explanation....

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One of the hottest debates in paleontology is whether birds evolved from dinosaurs.

The recent article "The Origin of Birds and Their Flight" by Kevin Padian and Luis M. Chiappe (Scientific American, February 1998, pp. 38-47) features an illustration of the fossil bird Confuciusornis; the caption above the illustration declares as fact:"Both a bird and a dinosaur" < http://www.sciam.com/1998/0298issue/0298currentissue.html> On page 5 of the same issue, under the heading, "About the Cover", Confuciusornis is described as "a primitive bird".

Padian and Chiappe conclude: "In fact, living birds are nothing less than small, feathered, short-tailed theropod dinosaurs." (p. 47)

Really?

Padian and Chiappe base their claim for the dinosaurian origins of birds on 1) so-called fossil transitions and 2) cladistics. However, the entire basis for cladism is evolutionary assumption.

The following quotes are taken from "Vertebrate Life" (Third Edition) by F.H. Pough, J.B. Heiser, and W.N. MacFarland (1989) Macmillan, New York:

"The reason for the change [from traditional to cladistic classification] is an increased emphasis on the proposition that groups of animals can be identified only if they share a common evolutionary lineage." (p. 4)

"Acceptance of the fact of evolution in the nineteenth century made a classification system that provided an individual pigeonhole for each species inadequate -- now it was necessary to express evolutionary relationships among species by incorporating phylogenetic information in the system of classification." (p. 38)

"A cladistic classification to represent the phylogeny of vertebrates, therefore, arranges animals on the basis of their historical divergences from a common ancestral species. Because the transitional fossils that would normally identify a common ancestral species are usually missing, cladistic classification is based on comparisons of character states of the animals that are available for study." (p. 49)

"Phylogenetic systematics, usually called cladistics, classifies animals on the basis of shared derived character states." (p. 52)

"Each phylogenetic lineage is called a clade." (p. 243)

"One of the strengths of the cladistic approach to classification is the emphasis it places on shared derived characteristics of related organisms. Usually, these are morphological characters, and they are employed to draw inferences about phylogenetic relationships, but the process can be used in other ways. For example, if a phylogeny can be established by using morphological charcters, other characteristics -- ecology, behavior, or physiology -- can be superimposed on the phylogeny and their evolution can be interpreted in a phylogenetic context." (p. 482)

FROM THEROPOD LUNGS TO BIRD LUNGS?

In response to the criticism of their theropod-to-bird theory that "The complex lungs of birds could not have evolved from theropod lungs," Padian and Chiappe write:

"This assertion cannot be supported or falsified at the moment, because no fossil lungs are preserved in the paleontological record. Also, the proponents of this argument offer no animal whose lungs could have given rise to those in birds, which are extremely complex and are unlike the lungs of any living animal." (p. 43)

In his book "Evolution: A Theory in Crisis" (1986) molecular biologist Michael Denton describes how in all vertebrates except birds, air is drawn inward through various tubes to air sacs (alveoli) in the lungs, and the "bad air" is expelled through the same tubes.

Birds, however, draw in the "good air" through parabronchi and force it through a complex tubular structure involving several portions of its anatomy. The air is expelled from the body through different tubes and orifices than those through which it entered. Denton reports this is true for all known birds, even those as diverse as hawks, ostriches, and hummingbirds.

FROM SCALES TO FEATHERS?

Well-known creationist Duane Gish, who spent 18 years in biochemical research (Cornell University Medical College; Virus Laboratory at the University of California, Berkeley; The Upjohn Company, Kalamazoo, Michigan) says no evolutionist can come even close to providing an evolutionary explanation of how feathers could have evolved from scales:

"Scales are flat horny plates; feathers are very complex in structure, consisting of a central shaft from which radiate barbs and barbules. Barbules are equipped with tiny hooks which lock onto the barbs and bind the feather surface into a flat, strong, flexible vane. Feathers and scales arise from different layers of the skin. Futhermore, the development of the feather is extremely complex, and fundamentally different from that of a scale. Feathers, as do hairs but unlike scales, develop from follicles. A hair, however, is a much simpler structure than a feather. The developing feather is protected by a horny sheath and forms around a bloody, conical, inductive dermal core. Not only is the developing feather sandwiched between the sheath and dermal core, it is complex in structure. Development of the cells that will become the mature feather involves complex processes. Cells migrate and split apart in highly specific patterns to form the complex

arrangement of barbs and barbules." ("Evolution: The Fossils Still Say No!", pp. 135-136)

Thus it seems timely to give students discussing the question, "Did birds evolve from dinosaurs?" an assignment to develop their critical thinking skills:

STUDENT RESEARCH ASSIGNMENT:

Did birds evolve from dinosaurs?

"When you look back on the 20th century in terms of major discoveries of fossils...these are going to be it." ("Fossils bolster notion birds came from dinosaurs", Calgary Herald, January 24, 1998, B6)

--Philip Currie,Tyrell Museum, Drumheller, Alberta

"The theropod origin of birds, in my opinion, will be the greatest embarrassment of paleontology of the 20th century." ("Birds do it...did dinosaurs?", New Scientist 153 (2067): 27-31 --Alan Feduccia, University of North Carolina at Chapel Hill

Read the article "The Origin of Birds and Their Flight" by Kevin Padian and Luis M. Chiappe (Scientific American, February 1998, pp. 38-47) < http://www.sciam.com/1998/0298issue/0298quicksummary.html>

In the the article, Archaeopteryx is identified as "the oldest known bird" (p. 41). Paleontologist Larry Martin of the University of Kansas, Lawrence, states: "Archaeopteryx is not ancestral to any group of modern birds.It has specializations in its tarsometatarsus and skull which show conclusively that it is on a side branch of avian evolution." (1985, p.182)

1. If Martin is correct, then where are the alleged intermediates lying on the main branch?

2. * Archaeopteryx had claws on its wings. Name three modern birds that have claws on their wings (either in the juvenile stage or as an adult).

3. Were the feathers of Archaeopteryx identical to modern flying birds?

4. ** Are there any undisputed true birds in the fossil record that had teeth?

A paper in Nature: 377:616-618 [October 19, 1995] reported on the discovery of Confuciusornis sanctus, a bird that is as "old" or "older" than Archaeopteryx, and yet is more modern in form. Though the stratigraphic sequence in the area is disputed, Confuciusornis is presumed to be Late Jurassic or Early Cretaceous. Confuciusornis is about half the size of the London specimen of Archaeopteryx, but does have several

features in common with this more famous fossil: both birds possess long claws on their wings, and the profile of both their skulls is roughly triangular. This is the first Jurassic bird to be discovered outside of Germany.

5. Are fossil experts in agreement as to whether or not Confuciusornis lies on a side branch or the main branch of avian evolution?

1. Why do you think Scientific American editors chose to put an illustration of Confuciusornis on the cover < in view of the fact that

i) no one disputes Confuciusornis had true feathers

ii) Confuciusornis isn't even mentioned in the article

7. Why do you think the illustration was captioned "Both a bird and a dinosaur"? Do all paleontologists describe Confuciusornis in this fashion?

Padian and Chiappe state in the Scientific American article that "a turkey-size dinosaur named Sinosauropteryx, has fringed, filamentous structures along its backbone and on its body surface. These structures of the skin, or integument, may have been precursors to feathers. But the animal is far from a bird. It has short arms and other skeletal properties indicating that it may be related to the theropod Compsognathus, which is not especially close to birds or other maniraptorans.

The second creature, Protarchaeopteryx, apparently has short, true feathers on its body and has longer feathers attached to its tail." (p. 45)

8. If the fossil evidence for protofeathers on Sinosauropteryx and true feathers on Protarchaeopteryx is now overwhelming, why do you think illustrations of Sinosauropteryx and Protarchaeopteryx weren't included in the article?

According to a report in New Scientist ["China unveils first bird's feathered cousin", April 19, 1997] the tail feathers of Protarchaeopteryx are not pointing in the right direction to have been attached in that position:

<htt p://www.newscientist.com/ns/970419/archaeop_nf.html>

One important question surrounding the fossil is whether the tail feathers actually belong to Protarchaeopteryx. "They are in the right position, but not in the right direction to be attached to the tail," says [Peter] Wellnhofer [Bavarian State Museum for Palaeontology and Historical Geology in Munich].The tail feathers may have been displaced after death, but it is possible that they came from another animal.

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9. Therefore, can Philip Currie (Tyrell Museum) who studied the specimen, prove that the feathers came from the same creature?

10. Re: the close-up of the feather imprint on the Protarchaeopteryx slab (Scientific American, February 1998, p. 45) Note how the imprint lies in the extreme corner of the slab. If Padian and Chiappe (and Currie) are convinced the imprint belongs to the animal, *how do they know* it belongs?

In the summer of '95 a fossil of of Struthiomimus, a "bird- like" dinosaur, was unearthed in Alberta's Dinosaur Provincial Park. The discovery is certainly spectacular, as it includes one of only four well-preserved ornithomimid skulls in the world. Soon after the discovery, Philip Currie told the Calgary Herald: "These guys look like ostriches without the feathers...they're built to move fast." (Calgary Herald, July 19, 1995, p. A1).

11. "Bird-like" dinosaurs such as Struthiomimus were "lizard- hipped", while dinosaurs such as the low-slung, four-legged Ankylosaurus were "bird-hipped". How does Currie, who believes dinosaurs evolved into birds, account for these characteristics?

12. Is is possible to document from the fossil record the series of transitional forms that led up to *any* dinosaur species?

* As with Confuciusornis, the fact that Archaeopteryx had claws on its wings does not necessarily indicate reptilian ancestry; three birds living today--the South American hoatzin, African touraco, and ostrich--each have claws on its wings (either in its juvenile stage or adult stage) and yet are true birds.

** Although Archaeopteryx had teeth, considered to be another reptilian feature, some fossil birds had teeth and some did not. That this should be true is not surprising, since this is true of all other classes of vertebrates---fish, amphibians, reptiles and mammals.

IF DINOSAURS COULD FLY

Presently, Canada's science network (The Discovery Channel) is also heavily promoting the alleged dino-bird link in the *TV special,"If Dinosaurs Could Fly"; however, the empirical evidence for such an extraordinary claim, under closer examination, is found wanting.

In the fall of '96 paleontologists were excited about photos of a so-called "feathered dinosaur," viewed at the annual meeting of the Society of Vertebrate Paleontology (Science, 1 November 1996, p.720). The Sinosauropteryx specimen [also known as Sinosyraptyrex] from the Yixian Formation in China also made the front page of The New York Times, and was considered by some as confirming the dinosaurian origins of birds.

>From the current Discovery Channel program guide:

"It's a feathered fossil called Sinosyraptyrex and it supports the theory of many experts that birds evolved from dinosaurs....The new Chinese dinosaur fossil with feathers is the first of its kind to be found and may represent the elusive intermediate stage between birds and dinosaurs. In other words, perhaps the best example of Darwin's missing link yet."

(Jan-Feb-Mar 1998 program guide, pp. 12-13)

Notice how the Discovery writer states as FACT that the fossil has feathers.

Philip Currie "conservatively calls them 'protofeathers' because they weren't fully developed", the article continues. In other reports Currie has said these fibers may be hollow and made of the same kind of keratin as feathers.

Jill Offman, the producer of the TV special, is also convinced the fossil has feathers. On January 17 Offman said in an interview on the program, Discovery Connection:

"...but there was an openness of spirit among the people whom we visited and they were absolutely willing to share with us every level of this debate-so it wasn't just about how old was the fossil and how old were the feathers, and I thought they wouldn't allow us to do that."

Last June 6 Currie and fellow paleontologist John Ostrom appeared on Calgary radio station CHQR with host Dave Taylor:

Taylor: The other question I wanted to ask is, you used the term, when we were talking about dinosaurs, possibly evolving into birds, and what's being found in China, you used the term "protofeather".

Ostrom: We aren't sure what the fibers preserved in the specimens that we saw. They were fine-grained fibers.

Taylor: They look like feather-fibers?

Ostrom: Well, we don't know.They do not have the shapes that we would expect and we don't know what the chemistry is.That remains for the Chinese experts to explore.

Taylor: But the suspicion is ...

Ostrom: They may be protofeathers. They may be protofeathers.

Taylor: What do you need to find to determine once and for all that birds evolved into [from] dinosaurs? What's the "missing link"?

Currie: I don't think there is a missing link, personally, anymore. I think that the amount of evidence that's been amassed in the last twenty years, mostly as a result of work started by John, although the original idea does go back more than a century, but certainly the modern work on the origin of birds, and how it relates to dinosaurs, specifically the meat-eating dinosaurs, is such a well-founded theory right now, sometimes it just mystifies me that there's any controversy at all.

Despite the Discovery Channel's media hype, the case for Sinosyraptyrex having "feathers" or "protofeathers" is growing weaker, not stronger, as time goes by:

* The Science News article "Paleontologists deplume feathery dinosaur" (5/3/97, p.271) includes the statement: "An international team of researchers that examined the Chinese fossil now concludes that the fibrous structures are not feathers."

* At last November's vertebrate paleontology meeting in Chicago the verdict was a bit different:The structures are not modern feathers, said the Western paleontologists who have seen the specimens.

* Noting the outline of the dinosaur skin is hard to discern in the fossilized stone, paleontologist Larry Martin (Kansas University) believes the structures are merely frayed collagenous fibers beneath the skin-and have nothing to do with birds.

* According to Alan Feduccia, chairman of the biology department at the University of North Carolina, "The dinosaurian origin of birds is based on sloppy science." (World Magazine, Nov. 22). Feduccia has seen photographs of Sinosyraptyrex and argues that its feather-like structures were merely a fibrous frill similar to that seen in modern lizards such as the iguana.

[Currie counters by saying his examination found that the skull of Sinosyraptyrex is actually rotated, so the supposed frill doesn't run down the middle of the animal's head and back. Currie also says the same feather-like structures are present around the hip, ribs, legs and side of the skull. "So it's not a frill," he contends.("Fossils bolster notion birds came from dinosaurs", Calgary Herald, January 24, 1998, B6)]

Feduccia thinks Currie is seeing things. He says on the Discovery Channel program:

"It's a delusional fantasy by which one can vicariously study dinosaurs at the back-yard bird feeder, and it's led to fantasizing about structures on dinosaurs and the presence of feathers. But there's absolutely no evidence for any feather structure on any dinosaur."

Regarding Protarchaeopteryx, Feduccia comments:

"I've seen pictures of Protarchaeopteryx, but the Protarchaeopteryx specimens that I have seen look more like roadkill than anything else."

* Zoologist John Ruben (Oregon State University) dissected a sea snake's tail to show that such fibers can indeed look feathery.

FURTHER TESTING NEEDED

Measuring the width of the fibers under a scanning electron microscope or testing whether they're made of collagen or keratin could resolve the debate, and according to Currie, some of these tests are now under way. One possibility is that the structures were a dermal (internal to the skin) collagen structure used to maintain body shape.

Feather proteins (phi-keratins) are biochemically different from skin and scale proteins (alpha-keratins). Noted ornithologist Alan Brush concludes:

"At the morphological level feathers are traditionally considered homologous with reptilian scales. However, in development, morphogenesis, gene structure, protein shape and sequence, and filament formation and structure, feathers are different." (A.H. Brush, "On the origin of feathers," Journal of Evolutionary Biology 9:131-142, 1996.)

In December the Calgary Herald reported that China had chosen Currie over researchers from Harvard University and the American Academy of Natural Sciences to study the fossils.("Alberta man gets dinosaur job", Calgary Herald, December 12, 1997, p. B1, B2)

I'm sure Currie's selection by Chinese officials had absolutely nothing to do with the fact that he is outspokenly "pro-feather"(or more accurately, "pro- protofeather"); a determination that the dinosaur had "protofeathers" would certainly be a feather in China's cap.

Nah. That would mean science has been politicized, and we all know THAT never happens.

Remember, the coolest thing about being an evolutionist is you don't have to make any distinction between fact and wild speculation.

* "If Dinosaurs Could Fly" was first broadcast January 18, and will be rebroadcast February 27 (10 pm), and February 28 (2 am) on Canada's Discovery Channel <http://www.exn.net/>. All times Eastern.

David Buckna is a public school teacher and co- author of the web article, "Should evolution be immune from critical analysis in the science classroom?" <http://www.icr.org/index.php?module=articles&action=print&ID=411> and "Cool things about being an evolutionist" <http://www.geocities.com/Athens/Delphi/4881/topten.html>

Related web articles

"If Dinosaurs Could Fly"

http://www.exn.net/on air/dinofly.cfm

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http://www.exn.net/news/0.cfm?ThisStory=19980108-03

Tyrell Museum

http://tyrrell .magtech.ab.ca/feathered.html

Sinosauropteryx findings announced

http:/ /www.dinosauria.com/jdp/archie/protosino.html

Alan Feduccia

http:/ /www.unc.edu/depts/biology/feduccia/main.html

John A. Ruben

http:// www.orst.edu/dept/zoology/people/rubenj.htm

http://www.orst.edu/dept/science- record/dinos.html

Kevin Padian

http://ib.ber keley.edu/faculty/Padian,K.html

KU researcher travels to China to test dinosaur theory

http://www.urc.ukans.edu/News/Oread97/OreadApril4/pag e4/dinosaur.html

Dinosaurs probably weren't ancestors of modern birds

http://www.urc.ukans.edu/News/96N/NovNews/Nov15/prebird.html

What came first - the dinosaur or the bird?

http://www.exn.net/news/0.cfm?ThisStory=19961115-03

Bones of Contention

http://www.acnatsc i.org/news/china.html

China unveils first bird's feathered cousin

htt p://www.newscientist.com/ns/970419/archaeop_nf.html

American scientists report on rare fossil

http://www.exn.net/news/0.cfm?ThisStory=19970425-04

Embryo studies show dinosaurs could not have given rise to modern birds

http://www.sciencedaily.com/story.asp?filename=971027064254

Cretaceous Pompeii

http://magazines.enews.com/magazines/discover/magtxt/98 01-3.html#3

Are birds really dinosaurs?

http://w ww.ucmp.berkeley.edu/diapsids/avians.html

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http://www.eastha mptonstar.com/feat5.htm

New dinosaur-bird link?

http ://www.christiananswers.net/aig/hot/junhot04.html

Have blood cells ever been found in dinosaur fossils?

http://www.christiananswers.net/q-aig/aig- c026.html#f4

How did dinosaur bones turn into fossils?

http://www.rae.org/bones.html

As a transitional form archaeopteryx won't fly

http://www.icr.org/pubs/imp/imp-195.htm