

The Media and the Public Understanding of Paleontology

Keith B. Miller
Department of Geology
Kansas State University

The Unifying Model: Common Descent

- **All things living on Earth are connected by an unbroken series of ancestor/descendant relationships to a single common origin.**
- **Consequence of common descent is a branching evolutionary tree or bush.**

The Power of the Branching Tree Model

- **Simple and easy-to-grasp visual model**
- **Model makes predictions about the patterns of species change that should characterize the fossil record**
- **Patterns can be recognized without reference to evolutionary mechanisms**

The Media Problem

- **Much of popular media presentation of paleontology emphasizes particular discoveries at the expense of the observed historical patterns.**
- **Paleontology is often presented as a series of serendipitous discoveries rather than a systematic study based on predictive theory.**

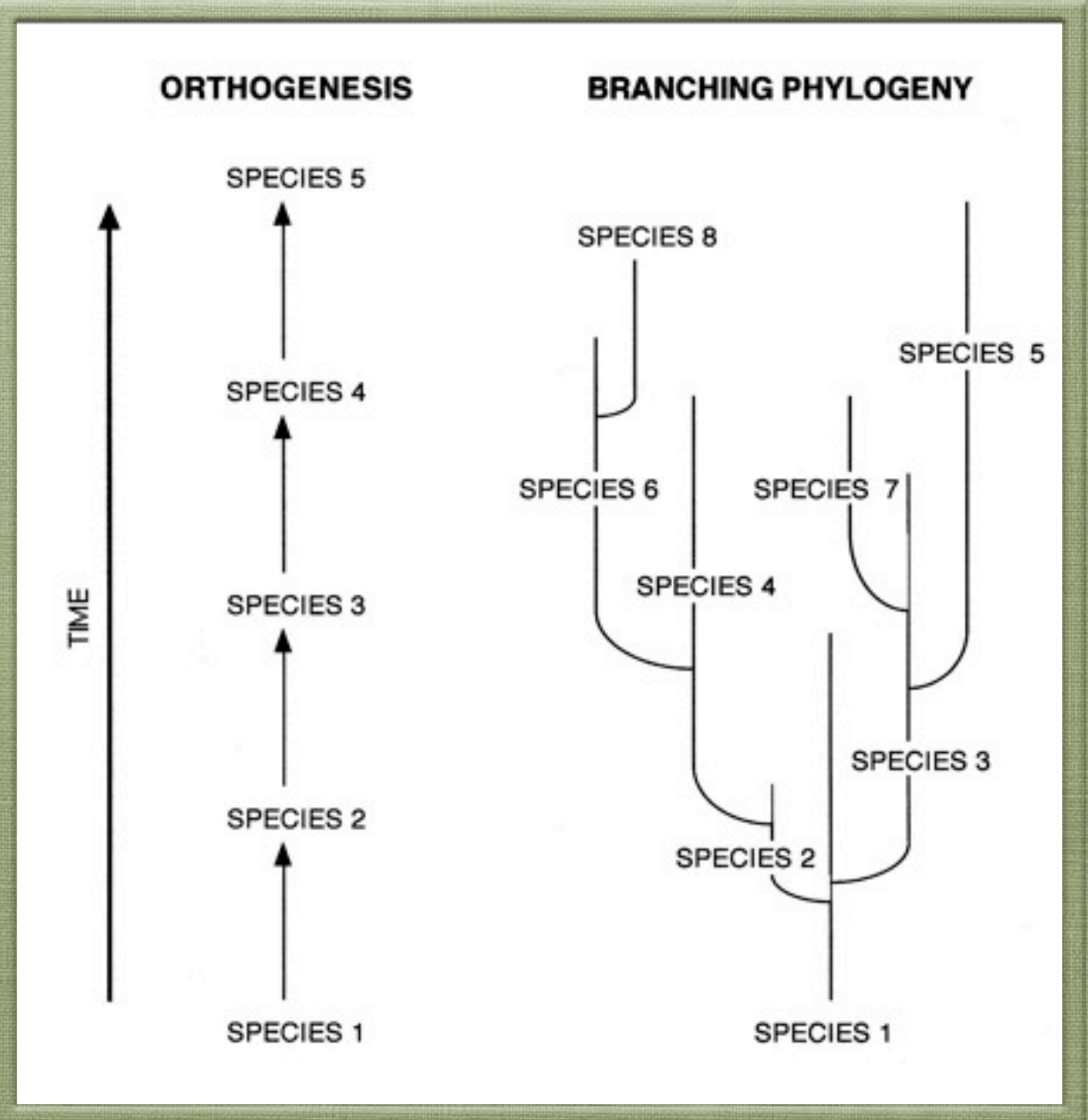
Media Emphasis on Single Discoveries

- **“Ambulocetus: Early Whale -- A Missing Link Between Terrestrial Mammals and Whales”**
 - (Agaric, Mar 28, 2007, Yahoo! Voices)
- **“Four-Winged Fossil Bridges Bird-Dinosaur Gap”**
 - (Sid Perkins, Sept. 25, 2009, Science News)
- **“Tiktaalik -- the Missing Link”**
 - “A crocodile-like fossil called *Tiktaalik roseae*, found on Ellesmere Island, Canada, sent scientists wild with excitement. A missing link between fish and land animals, it showed how creatures first walked out of the water and on to dry land more than 375 m years ago.” (Alok Jha, Dec. 22, 2006, The Guardian.)

“Missing Links”

- The phrase “missing link” implies that the validity of an evolutionary interpretation hinges on the discovery of a particular unique specimen.
- “Missing link” also implies particulars, not patterns.
- The term may also reinforce incorrect views of evolution -- such as the ladder of life.

Bushes not Ladders




Problem with Ladders

- **A missing “rung” breaks the evolutionary continuity**
- **Do not model common ancestry between different lineages**
- **An “ancestor” species cannot postdate its descendant**

Media Portrayal “Archaeoraptor”

A FLYING DINOSAUR?



MODEL BY STEPHEN CZERKAS

**“IT’S A MISSING LINK
between terrestrial
dinosaurs and
birds that could
actually fly.”**

—STEPHEN CZERKAS

Media Coverage

- “The Archaeoraptor fossil was introduced in 1999 and hailed as the missing evolutionary link between carnivorous dinosaurs and modern birds.”
 - Hillary Mayell, November 20, 2002, “Dino Hoax Was Mainly Made of Ancient Bird, Study Says”: [National Geographic News](#).
- “Forensic analysis of a forged fossil once hailed as a ‘missing link’ between birds and dinosaurs has shed light on its murky origins.”
 - Helen Briggs, “‘Piltdown’ bird fake explained”: [BBC News Online](#).

Responses

- “Archaeoraptor: Feathered Dinosaur from National Geographic Doesn’t Fly”
 - Steven A. Austin, www.icr.org
- “Archaeoraptor: Phony Feathered Fossil”
 - “The latest ‘feathered dinosaur’ claim provokes even some evolutionists to use words like ‘total hoax.’”
 - Jonathan Sarfati, www.answersingenesis.org



“Ida”- Fossil Primitive Primate

Media Emphasis on Single Discoveries

- **“Fossil Ida: Extraordinary find is ‘missing link’ in human evolution”**
 - Scientists have discovered an exquisitely preserved ancient primate fossil that they believe forms a crucial "missing link" between our own evolutionary branch of life and the rest of the animal kingdom.
 - The Guardian (May 19, 2009) <<http://www.guardian.co.uk/science/2009/may/19/ida-fossil-missing-link>>
- **“‘Missing Link’ Fossil was not Human Ancestor as Anthropologists Say”**
 - Science Daily (March 2, 2010) <<http://www.sciencedaily.com/releases/2010/03/100302131719.htm>>

“Ancestors”

- **No particular species or specimen can ever be identified as an actual ancestor. Searching for “ancestors” is not the goal of paleontology.**
- **Emphasis on single specimens and “ancestors” distorts the scientific process or reconstructing evolutionary patterns.**
- **We search for, and predict, historical patterns in the characters of extinct organisms.**



Discovery of
Australopithecus sediba

Announcement of *Australopithecus sediba*

**"Key" Human Ancestor Found: Fossils Link Apes,
First Humans?**

Identified via two-million-year-old fossils, a new human ancestor dubbed *Australopithecus sediba* may be the "key transitional species" between the apelike australopithecines—and the first *Homo*, or human, species, according to a new study.

National Geographic Daily News, April 8, 2010

Response

“Lee Berger and his team do recognize that their *Au. sediba* fossils are too young to be the actual ancestors of the genus *Homo*—that they overlap with discoveries of fossils assigned to *Homo*. But they suggest that earlier, yet undiscovered, members of *Au. sediba* could be the ancestors of *Homo*. How would one go about verifying that fossils not yet discovered are the ancestors of the genus *Homo*?”

Marvin Lubenow, August 11, 2010, “The Problem with *Australopithecus sediba*.” Answers in Genesis

Response

“They frantically search for old bones to see who can ‘scoop’ the other. Each of them wants to make a claim to fame for being the one who discovered the oldest “ancestor” of man. And really, they don’t care much as to how they achieve the recognition.” ...

“The distressing thing about all of this is this: the average person exposed to these allegations, via the popular media, believes them as verified truth, when, the fact is, time-and-again, the theories relative to these ‘fossil finds’ have been revised drastically or abandoned altogether.”

(Wayne Jackson, 2012, “The Continuing Search for Man’s ‘Fossil’ Ancestor,” Christian Courier)

The Hominid Fossil Record is Rich



H. habilis



H. heidelbergensis

H. ergaster



H. sapiens



A. sedibah



A. africanus



A. afarensis

Patterns in the Data

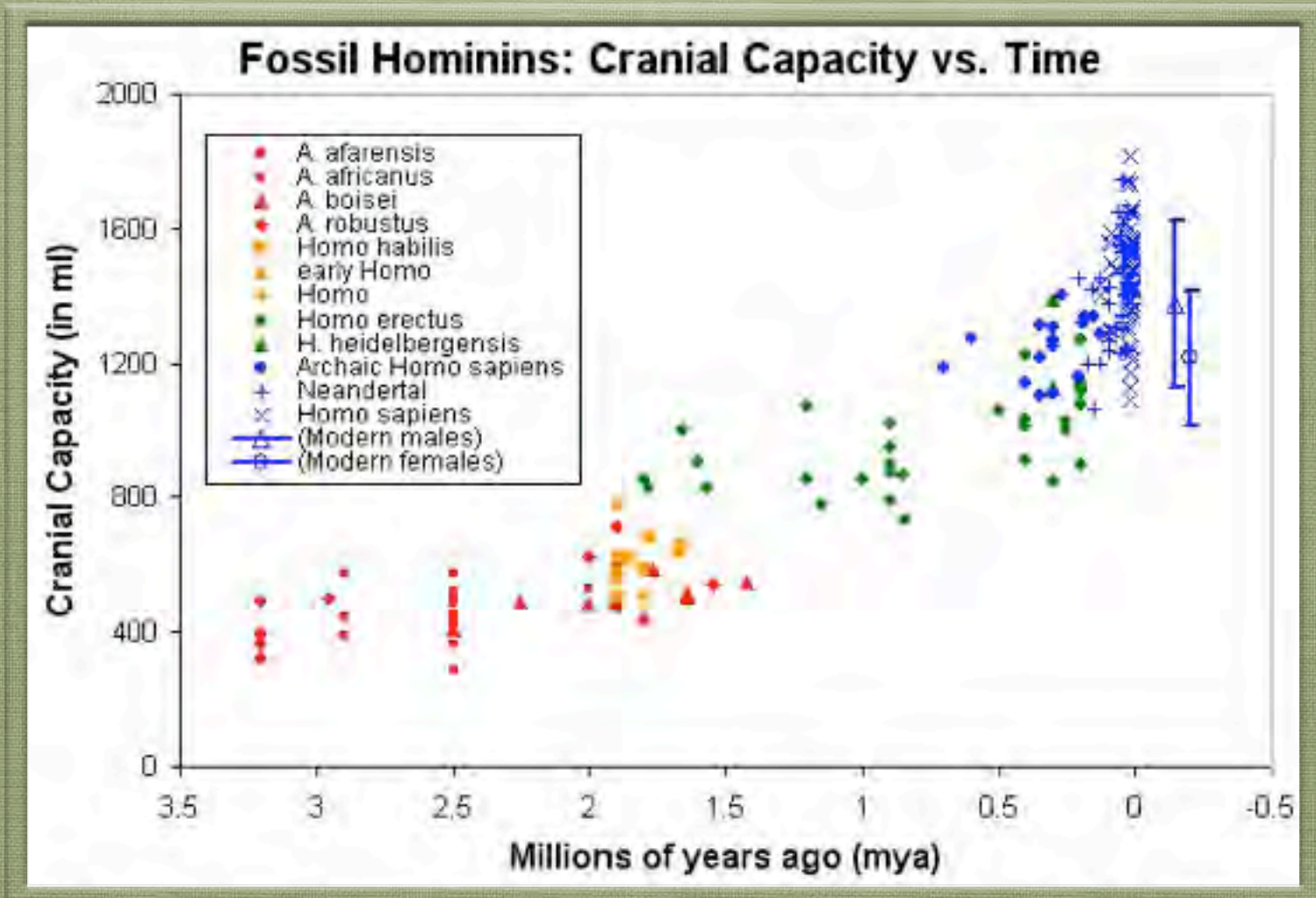


Chart by Nick Matzke of NCSE (www.ncseweb.org). Version 1.1, September 30, 2006.

Classification

- **Emphasis on placing new fossil specimens into existing higher taxa distracts from the patterns in the fossil data.**
- **Higher taxa give the impression of discontinuity.**
- **Is it a bird? Is it a whale? Is it a mammal? The very existence of these questions indicate the intergrading character of biological diversity.**

Archaeopteryx



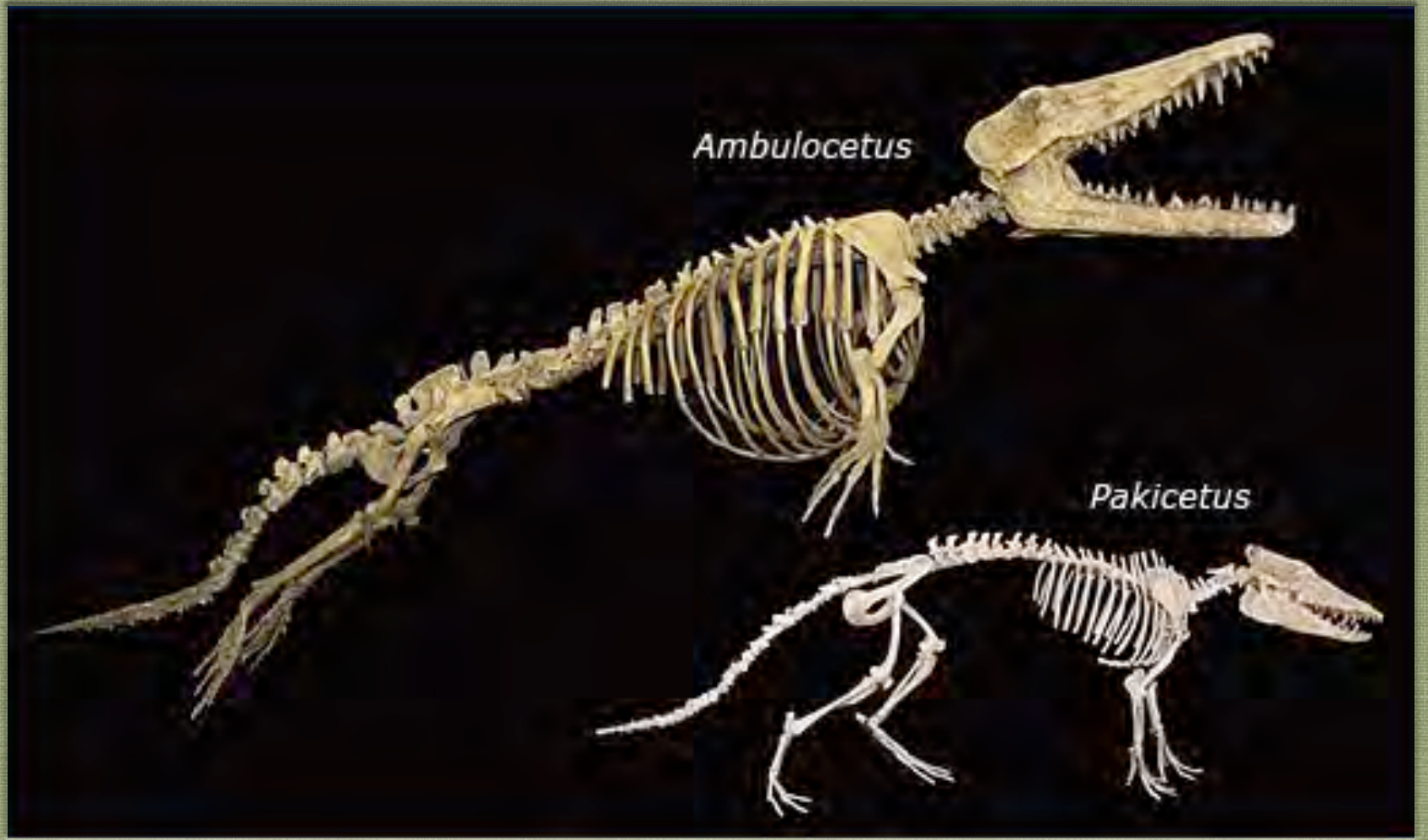
Classification trumps anatomy

- “The so-called intermediate is no real intermediate at all because, as paleontologists acknowledge, Archaeopteryx was a true bird--it had wings, it was completely feathered, it FLEW. . . It was not a half-way bird, it WAS a bird.”

(Gish, D. Evolution? The fossils say No! Creation-Life, San Diego 1979.)



Diversity of Feathered Dinosaurs



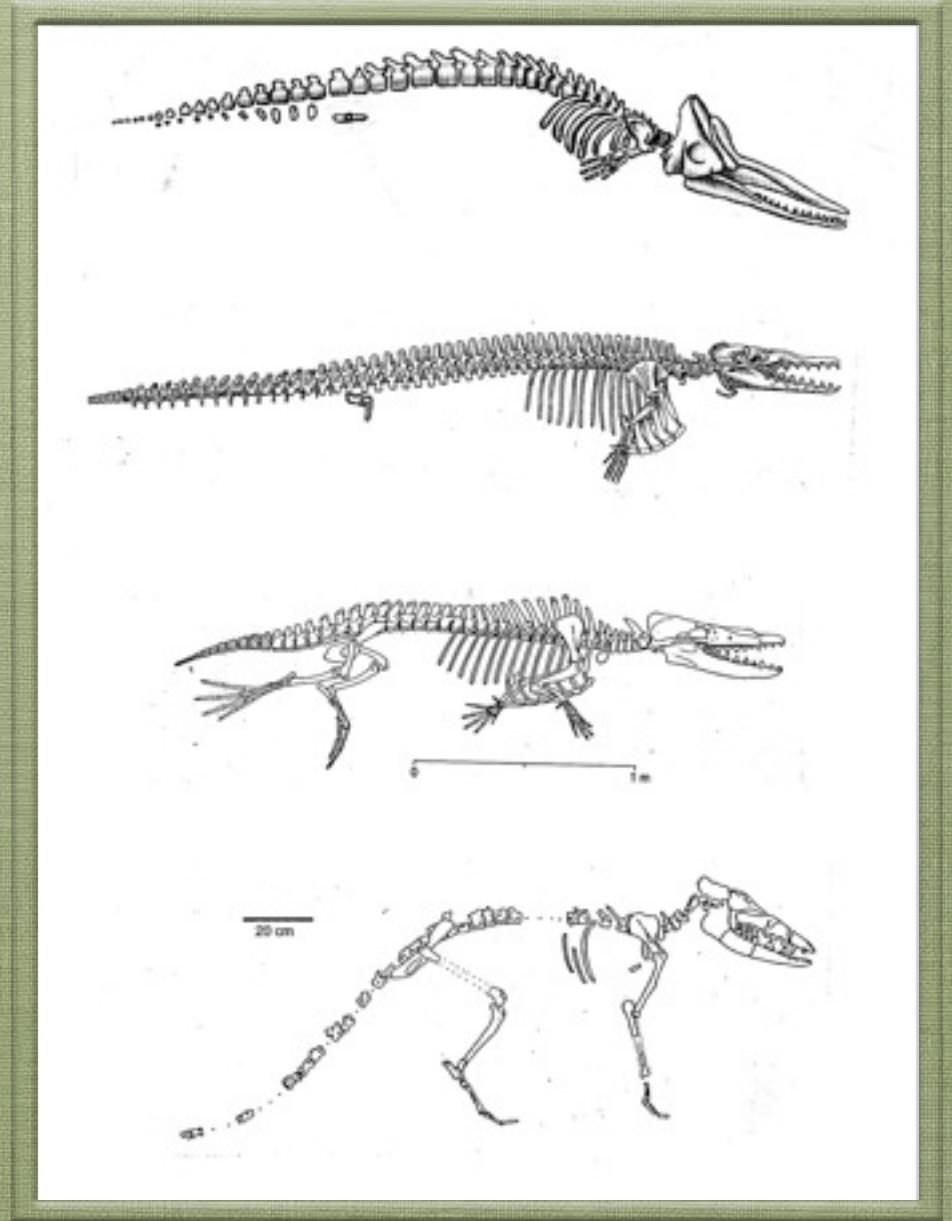
Ambulocetus skeleton

Classification trumps anatomy

- When some of the ICR staff looked at the picture with the knowledge that Thewissen and fellow workers called this creature a whale, they laughed. Evolutionists may claim that this was because of ignorance of subtle distinctions of anatomy; on the other hand, associating the word "whale" with a creature with large and powerful front and hind legs does seem a bit ludicrous to skeptics.

"When is a Whale a Whale?", Institute for Creation Research, <http://www.icr.org/article/379/> (Originally published April, 1994, accessed September 21, 2008)

Whale Evolution - down the tree



Seeking Controversy

- **The media seeks out controversy and conflicting views. Always looking for opposing views.**
- **Media attention is drawn to questions over the origin of major taxonomic groups.**
- **New discoveries are presented as pivotal, rather than as one part of a large body of evidence.**

Controversy Trumps Science

- **Discovery Raises New Doubts About
Dinosaur-Bird Links**

“Researchers at Oregon State University have made a fundamental new discovery about how birds breathe and have a lung capacity that allows for flight – and the finding means it's unlikely that birds descended from any known theropod dinosaurs.”

(Science Daily, June 9, 2009)

Controversy Trumps Science

- **Birds Did Not Evolve from Dinosaurs, Say Evolutionists**

Stunning New Research Overturns Widely Held Evolutionary Idea

“Birds did not evolve from dinosaurs: what creationists have been pointing out for years is now buttressed by new research. ... The conclusion is so revealing—especially considering that it comes straight from evolutionist researchers—that we borrow it directly from the Oregon State press release: ...” (A.P. Galling, June 12, 2009, Answers in Genesis)

Conclusions

- **Terms such as “missing links” and “ancestors” should be avoided because they reinforce misconceptions.**
- **When interacting with the media, and the public, scientists need to emphasize the context of new discoveries.**
- **The recognition of patterns, and the construction of theories, must be made part of the public face of paleontology.**
- **As Christian scientists we need to be as careful with communicating our science, as we are with our faith.**