

## Each After His Kind

Baraminology



## Genesis 1 (King James Version)

- ▶ Things brought forth "after his kind"
  - ❑ Grass, herb yielding seed, fruit tree, great whales, every living thing that moveth which the waters brought forth abundantly, every winged fowl, the living creature, cattle, creeping thing(s), beast (s) of the earth,
- ▶ Things brought forth "after our likeness"
  - ❑ Man

### Is the Genesis kinds equivalent to a species? How many described extant animal species are there?

▶ Arthropoda 875,151	▶ Amphibia 4,780
▶ Mollusca 50,000	▶ Mammalia 4,675
▶ Platyhelminthes 12,200	▶ Aves 9,702
▶ Roundworms 12,000	▶ Reptilia 7,870
▶ Annelida 12,000	▶ Pisces 23,250
▶ Coelenterata 9,000	
▶ Echinodermata 6,100	
▶ Porifera 5,000	

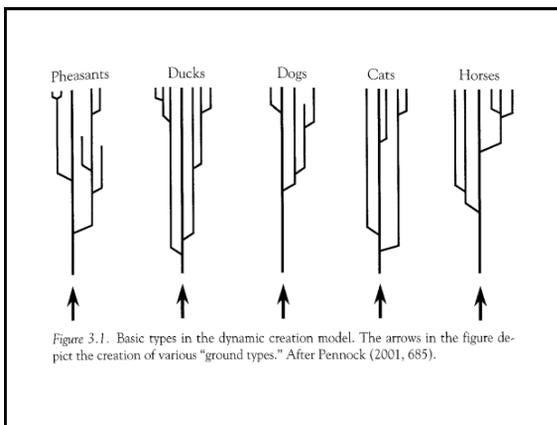


## Frank L. Marsh



McCready Price with Marsh, 1960

- ▶ "*Evolution, Creation and Science*" (1944)
- ▶ Seventh Day Adventist
- ▶ **Baramin** – originally created kind, within which speciation can occur.

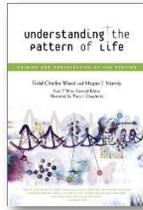


## Dynamic Creation Model

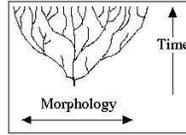
- ▶ Creation of "basic types" by direct creative action
  - ❑ "Ground types" / Original "kinds" / "Baramin"
  - ❑ These contain the necessary **information** for future speciation, i.e. no new **information** is made.
- ▶ Subsequent speciation by natural methods
  - ❑ Role of mutation and selection?
  - ❑ Over what length of time does speciation occur? Is it occurring today?

## Natural Selection

“Natural selection can be viewed as a post-Fall stabilizing mechanism ... eliminating biological deviants and preserving better-adapted individuals”



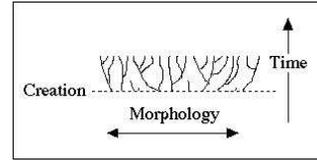
(Wood & Murray, 2003, p. 31)



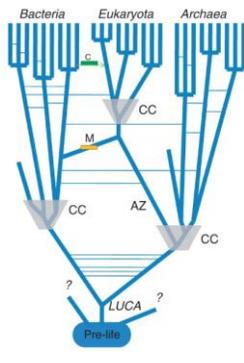
Evolutionary "Tree of Life"



Creationist "Lawn of Life"



Creationist "Orchard of Life"



Evolutionary biology sees the "Tree of Life" as a central trend in the history of life.

c: chloroplast  
M: mitochondrion  
AZ: host for mitochondrion  
LUCA: last universal common ancestor  
CC: compressed cladogenesis

## Duane T. Gish



“We cannot be sure what defines a kind, yet we can be sure what the Bible means by one.”

## Discontinuity Systematics



- ▶ Walter ReMine
- ▶ Electrical engineer & YEC
- ▶ Paper for the Second International Creationism Conference (1990)
- ▶ Expanded upon (and renamed "baraminology" by Kurt Wise.

## Todd Wood



“Currently, baraminology has been applied to dozens of groups, and the results of 66 baraminology studies are summarized and evaluated here. Though bias in group and character selection prevents firm conclusions, it appears at this time that Price’s suggestion that the family is an approximation of the ‘created kind’ may be correct.”

“The Current State of Baraminology”  
CSRQ43(3) 2006

<http://www.creationresearch.org/crsq/abstracts/Abstracts43-3.htm>

## Approximate Number of Vertebrate Families: 806

Pisces – 445  
 Amphibia – 34  
 Reptilia – 48  
 Aves – 144  
 Mammalia – 135

## The Baraminology Study Group



A *baramin* is a group that shares **continuity** (meaning that each member is continuous with at least one other member) and is bounded by **discontinuity**.

## BSG: A Creation Biology Study Group

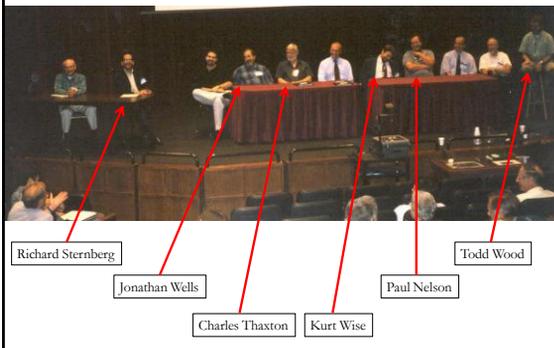
- ▶ “[A]n affiliation of biologists and other researchers dedicated to developing a **young-age creation model** of biological origins.”
- ▶ “[A] formal society of professionals in the biological and related sciences or theology who ... are Christians accepting the **authority of Bible (i.e., Old and New Testament canons) in all areas**. Thus, all members accept the taxonomic concept of ‘created kind’ or baramin.”
- ▶ “The BSG organized to be a community for mutual encouragement and Christian fellowship to those researchers dedicated to discovering the Creator and the outworking of His design for the present living world. Our ultimate goal is to develop origin models that accommodate empirical data in a **biblical framework of earth history** through scientifically sound analysis of biological data and scholarly analysis of biblical texts.”

<http://www.bryancore.org/bsg/aboutmain.html>

## Conferences

- ▶ 1997 – Inaugural meeting at Bryan College
  - ▶ **Todd Wood**, Ashley Robinson, David Cavanaugh, Dave Fouts, **Kurt Wise**, and Neal Doran.
- ▶ 1999 – “Creation Biology for the 21<sup>st</sup> Century” (Liberty U.)
- ▶ 2001 – “Discontinuity: Understanding Biology in the Light of Creation” (Cedarville U.)
- ▶ 2004 – “Discovering the Creator” (Bryan College)
- ▶ 2005 – “A Grand View of Life” (St Andrews College)
- ▶ 2006 – “Exploring the History of Life” (Cedarville U.)
- ▶ 2007 – “All Creation Groans” (Liberty U.)
- ▶ 2008 – “Frontiers in Creation Research” (ICC 6, Pittsburgh)

## First Conference in 1999



## Who Are The Baraminologists?

- ▶ YEC
  - Kurt Wise
  - Todd Wood
  - Wayne Frair
  - Walter ReMine
- ▶ ID / YEC
  - Paul Nelson
  - Marcus Ross
  - John Mark Reynolds
  - Charles Thaxton
  - Sigfried Scherer
- ▶ ID / Unknown
  - Richard Sternberg
  - Jonathan Wells

## Where are they publishing?

- ▶ Proceedings of the International Conference on Creationism
- ▶ Creation Research Society Quarterly
- ▶ Institute for Creation Research Impact
- ▶ Creation ex Nihilo Technical Journal
- ▶ Origins
- ▶ CORE Issues in Creation
- ▶ Occasional Publications of the BSG

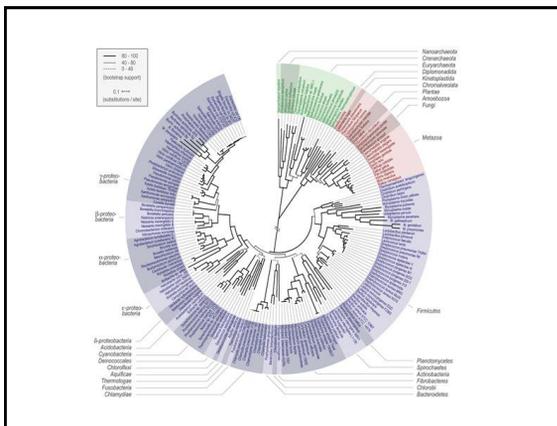
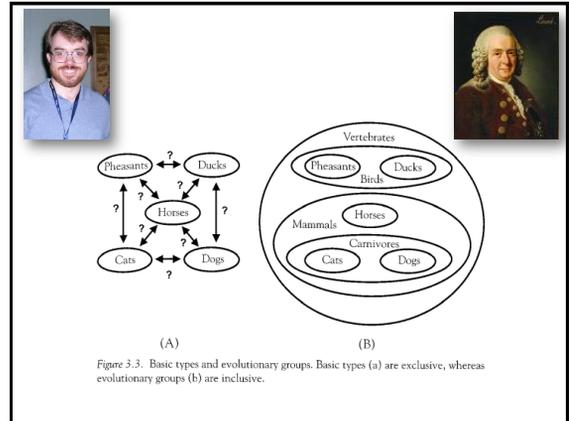
## Occasional Publications of the BSG

1. A Baraminological Analysis of the Tribe Heliantheae *sensu lato* (Asteraceae) Using Analysis of Pattern (ANOPA) by Cavanaugh & Wood (2002)
2. An Evaluation of Lineages and Trajectories as Baraminological Membership Criteria by Wood & Cavanaugh (2003)
3. A Refined Baramin Concept by Wood, Wise, Sanders, and Doran (2003)
4. Discovering the Creator: Proceedings of the Third BSG Conference edited by Sanders (2004)
5. A Grander View of Life: Proceedings of the Fourth BSG Conference edited by Sanders (2005)
6. The Flores Skeleton and Human Baraminology by Wise (2005)
7. The Chimpanzee Genome and the Problem of Biological Similarity by Wood (2006)
8. Exploring the History of Life: Proceedings of the Fifth BSG Conference edited by Sanders (2006)
9. Bishop John Wilkins, F.R.S. (1614–1672) and his discussion of Noah's Ark by Wood (2007)
10. All Creation Groans: Proceedings of the Sixth BSG Conference edited by Sanders (2007)
11. Frontiers in Creation Research: Proceedings of the Seventh BSG Conference (2008)
12. Baraminic Distance, Bootstraps, and BDISTMDS (2008)

## BSG Consensus positions

Modern species arose not at creation but since then. Most baraminologists accept the Noachian Flood, which was the most catastrophic geologic event in the history of the earth, as the environmental trigger for rampant diversification and speciation. ...

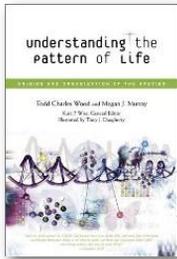
At creation, each baramin was designed with latent information that was switched on, recombined, and fragmented as survivors of the catastrophe reproduced, dispersed, and populated the many newly available, unexploited habitats. Mutations since then have further altered the genetic composition of species.



## Questions

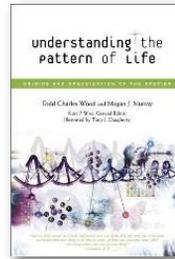
- ▶ How do we detect a baramin?
- ▶ How do we deal with the implication that the vast, vast, vast, majority of species must thus have developed in the ~4,000 years since the Flood.

## Why baramins must exist ...



"We creationists rest instead on the philosophical and biblical foundation ... **Since we believe that something like a 'diverse unit of biological creation' ... must exist**, detecting baramins becomes a matter of adjusting our context until the baraminic limits emerge."

## The nature of the baramin ...



"[T]he **short history of the earth** would seem to preclude megaevolutionary events, such as the origin of new phyla or classes during only six thousand years since creation. ... [T]he baramin may be generally equated with an order, family, or tribe, rarely with something broader or narrower" (p 71).

## Additive Evidence

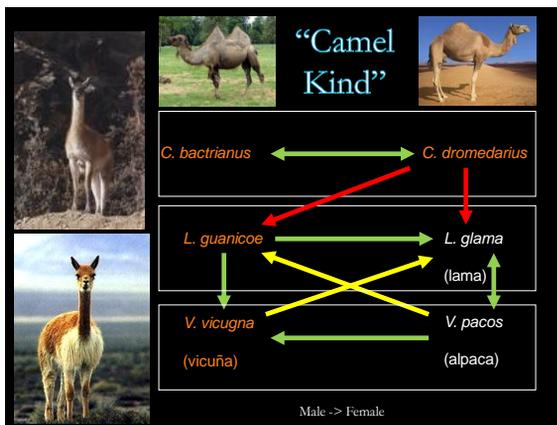
- ▶ Morphological or molecular similarity.
- ▶ Stratomorphic Series.
  - Stratigraphic fossil series connected by clear character-state transitions are evidence of continuity. For example, fossil and modern equids qualify as a baramin.
- ▶ Successful inter-specific hybridization.
  - If members of two different species can successfully hybridize, they share genetic and morphogenetic programs and are, thus, holistically continuous.

## Hybridization as a Criterion

If A hybridizes with B, and B with C *can we assume A would breed successfully with C?*

Barriers to reproduction

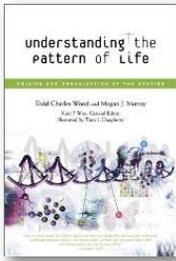
- Geographic separation
- Behavioral differences
- Pre-zygotic barrier
- Embryonic non-viability
- Sterility of offspring



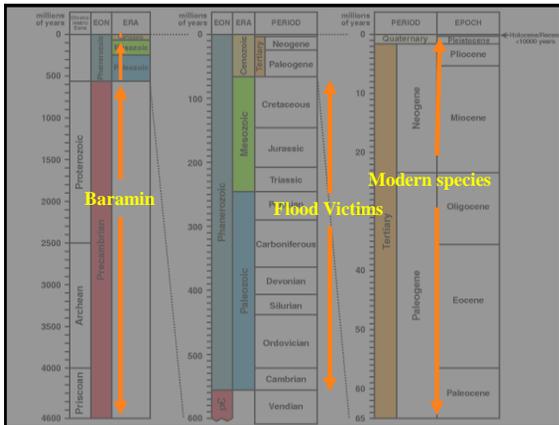
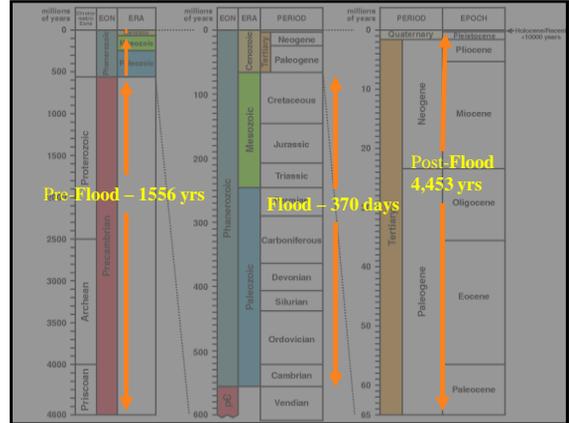
## Subtractive Evidence

- ▶ Morphological or molecular dissimilarity.
  - Are the natural and hybridized forms within the group separated from organisms outside the group by gaps that are significantly greater than intra-group differences?
- ▶ Lack of fossil intermediates.
- ▶ **Scripture claims discontinuity.**
  - E.g. Scripture claims humans to be a baramin and that whales ("great sea monsters") are discontinuous from land mammals.

## The nature of evidence ...



“Obviously, when the Bible clearly claims discontinuity, any other evidence is unnecessary. As a result, the quality of the *Australopithecine* or whale [fossil] series is overruled by the biblical claims of discontinuity between humans and apes and between whales and land creatures.” (p. 93).



## Consider the beetles

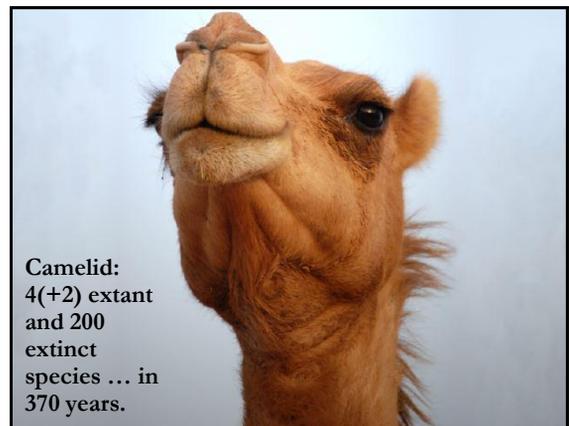


- ▶ There are at least 166 families (“kinds”).
- ▶ These contain perhaps 350,000 to 8,000,000 species
- ▶ Allowing the Flood to end in 2448 BC would mean a speciation rate for beetles alone of 79 to 1795 per year.

## Horses



- ▶ Biblical evidence indicates the members of the horse baramin must have originated in “just 370 years immediately after the Flood” as did the Camel baramin. The majority of these organisms subsequently went extinct (Wood *et al.* p. 172).
- ▶ Horse: 7 extant and 150 extinct species ... in 370 years.
- ▶ Versus ~55,000,000 years



Camelid:  
4(+2) extant  
and 200  
extinct  
species ... in  
370 years.

## Some questions ...

- ▶ Has this rate slowed down?
- ▶ If so, when & why?
- ▶ Written history should be full of accounts of speciation happening in real time.
- ▶ How are these species being formed?

## Some "Basic Kinds" We Would Expect to See in Pre-Cambrian Rocks

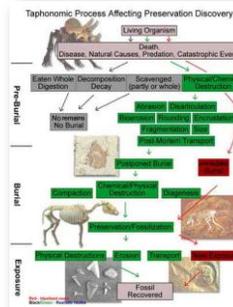


- Beetles - 166
- Fish - 445
- Amphibians - 34
- Reptiles - 48
- Birds - 144
- Mammals - 135
- Humans - 1



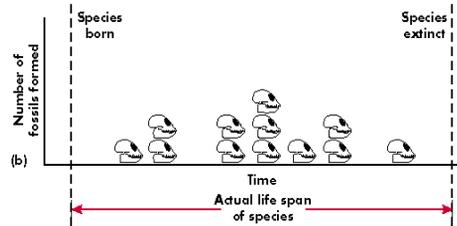
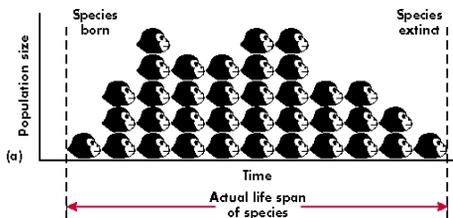
## Becoming A Fossil

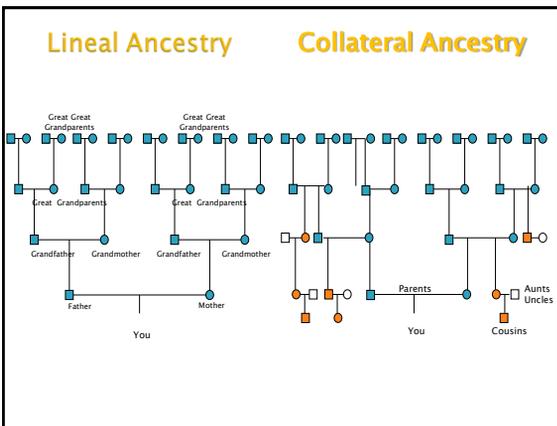
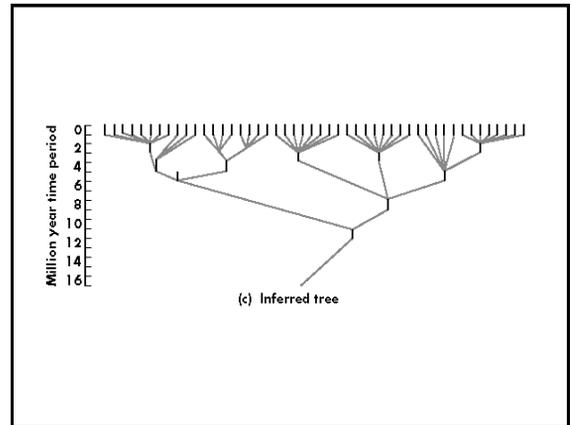
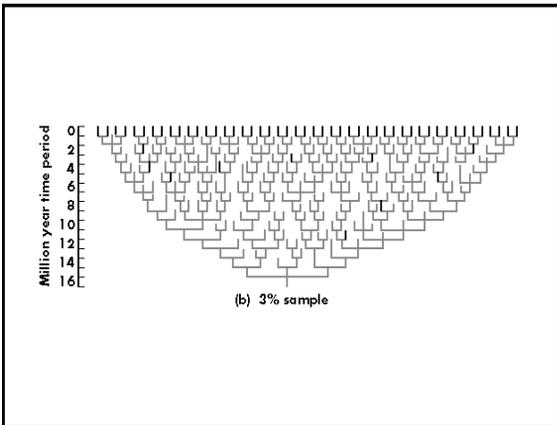
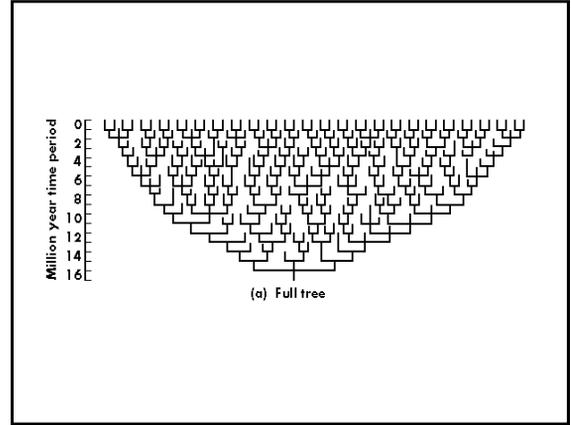
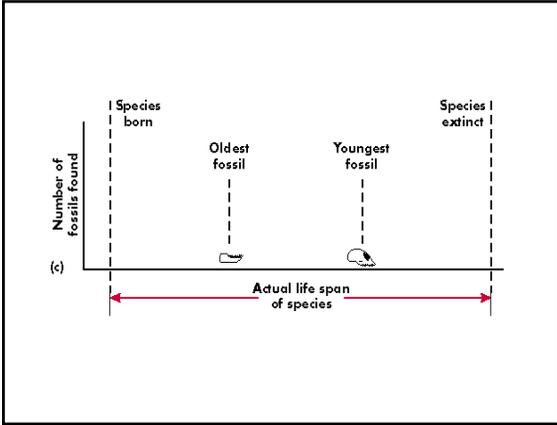
## The Fossilization Process



- ▶ Quick burial in ...
- ▶ Depositional area which ...
- ▶ Becomes erosional and where ...
- ▶ Someone finds the specimen before ...
- ▶ It erodes.

**LUCK !!!!**



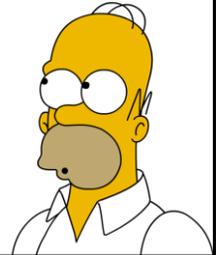


Absence of evidence is not evidence of absence

00:00

**Two of a Kind**

Whales and Humans



"And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good."

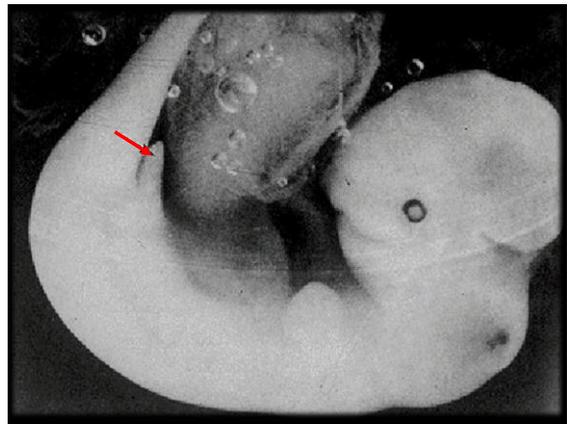
**Should be 14 "Kinds" of Whale**

Suborder Mysticeti

- ▶ Balaenidae (4)
- ▶ Balaenopteridae (10)
- ▶ Eschrichtiidae (1)
- ▶ Neobalaenidae (1)

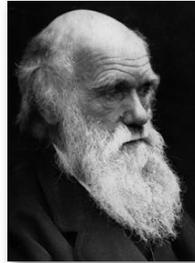
Suborder Odontoceti

- ▶ Delphinidae (38)
- ▶ Monodontidae (2)
- ▶ Phocoenidae (6)
- ▶ Physeteridae (1)
- ▶ Kogiidae (3)
- ▶ Iniidae (1)
- ▶ Lipotidae (1)
- ▶ Pontoporiidae (1)
- ▶ Planistidae (1)
- ▶ Ziphiidae (21)





## Origin of Species, Ch 6



"In North America the black bear was seen by Hearne swimming for hours with widely open mouth, thus catching, like a whale, insects in the water. Even in so extreme a case as this, if the supply of insects were constant, and if better adapted competitors did not already exist in the country, I can see no difficulty in a race of bears being rendered, by natural selection, more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale."

## What are whales related to?

- Suggestion of ungulates (1883).
- But which ones?
  - Artiodactyls ("even-toed")
    - hippos, deer, cattle, pigs, camels
  - Perissodactyls ("odd-toed")
    - horses, rhinos, tapirs



## Duane Gish, 1985



"It is quite entertaining, starting with cows, pigs, or buffaloes, to attempt to visualize what the intermediates may have looked like. Starting with a cow, one could even imagine one line of descent which prematurely became extinct, due to what might be called an 'udder failure!'"

## David Berlinski, 2006



"The interesting argument about the whale, which is a mammal after all, is that if its origins where [sic] land-based originally...what do you have to do from an engineering point of view to change a cow into a whale?...Virtually every feature of the cow has to change, has to be adapted."

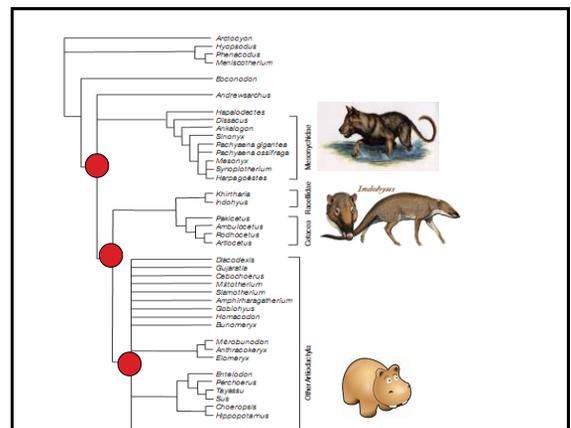
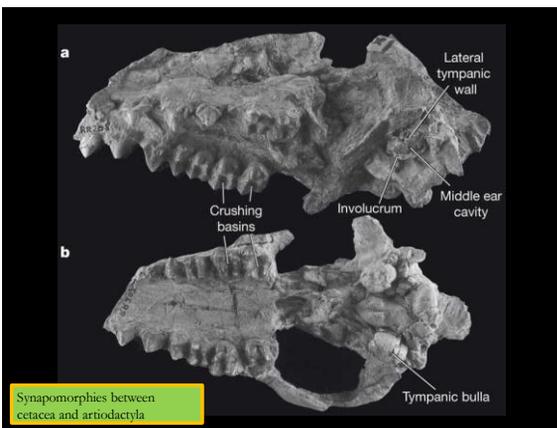
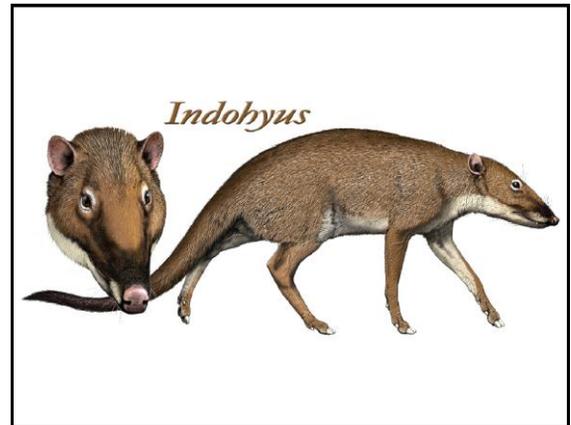
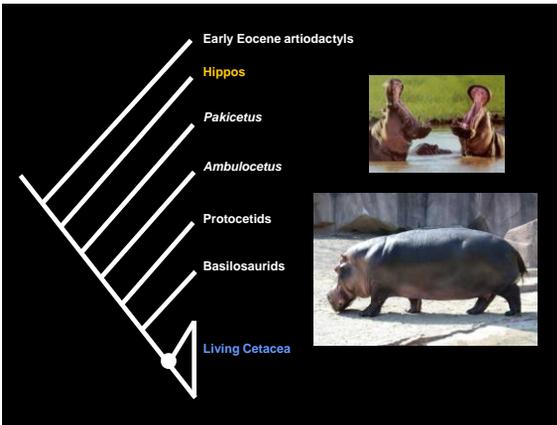
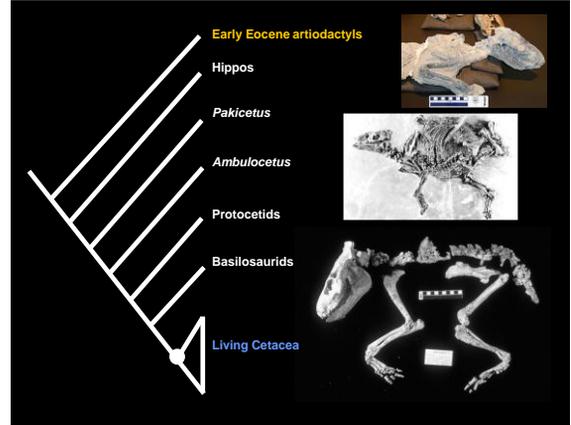
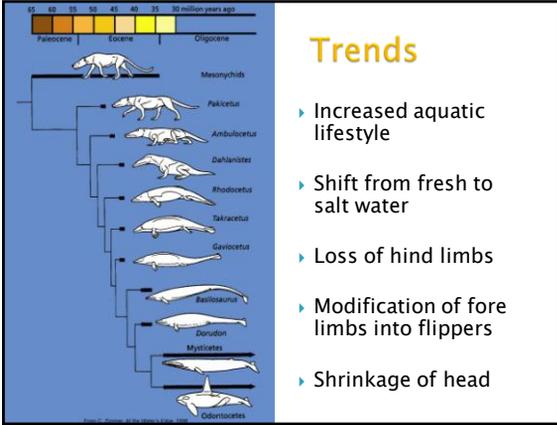
## AiG on Whales

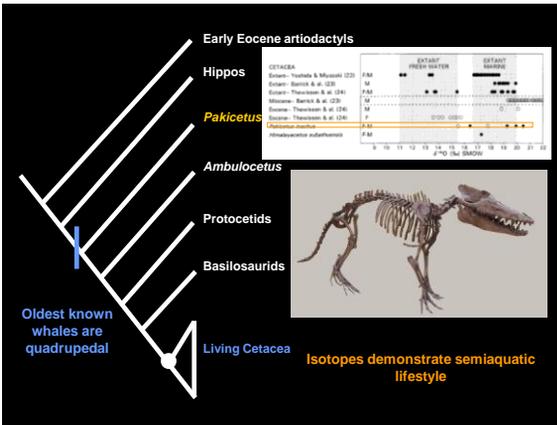
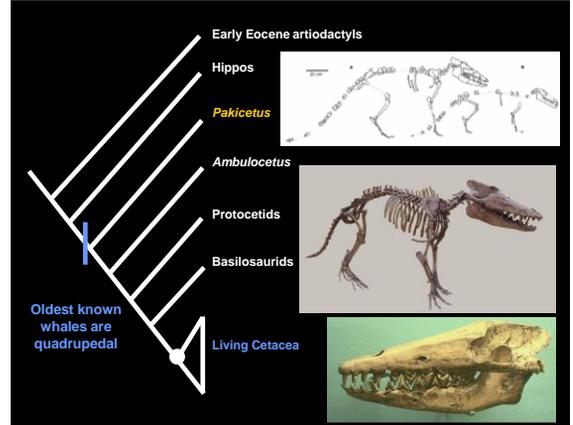
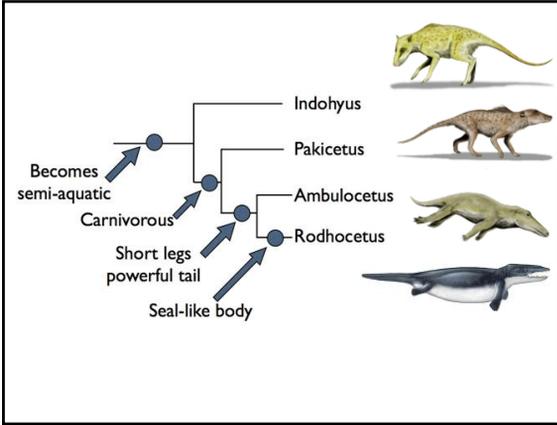
"Incredible as it may seem, evolutionists now consider the closest living relative to the hippo to be cetaceans, or whales! A University of Berkeley study in 1985 allegedly showed, using blood proteins and DNA, that whales were more closely related to hippos than any other animal. ... This same study admitted that the findings were not based on fossil evidence, but on speculation and conjecture, guided by the watchful eye of evolutionary dogma."

"Were evolution really true, millions upon millions of mutations would be needed to transform one basic kind into another. We should be able to see a multitude of 'gradations' between a hippo and the whale. But we don't see this."

Jeffrey Dykes (2007) "Hippo Habits" *Creation* 29(4):50-53



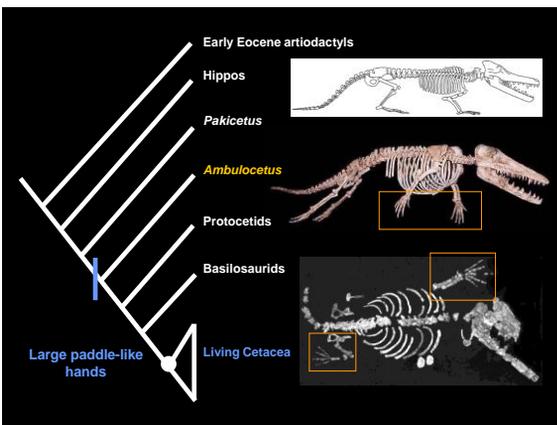




### Duane T. Gish (1985)



"This evidence indicates a **fluvial and continental** rather than **marine** environment as would be expected for a whale or whale-like creature"



OPEN ACCESS <https://doi.org/10.1371/journal.pone.0004366> 

### New Protocetid Whale from the Middle Eocene of Pakistan: Birth on Land, Precocial Development, and Sexual Dimorphism

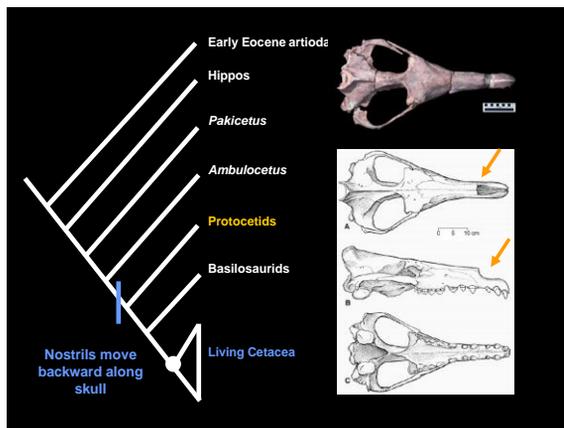
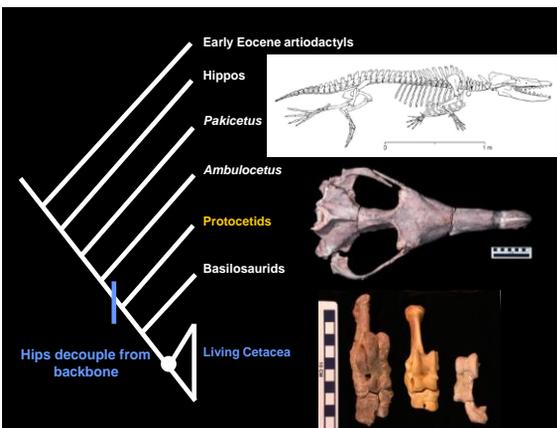
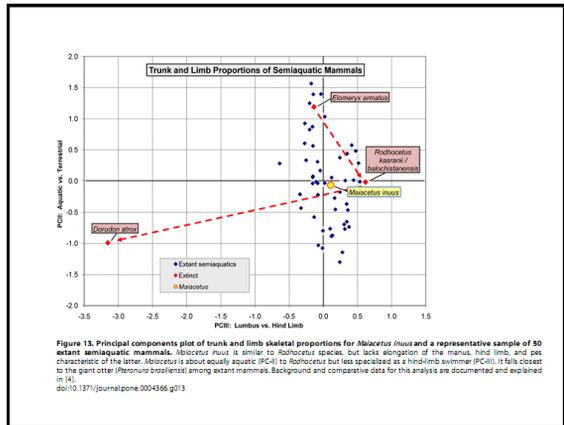
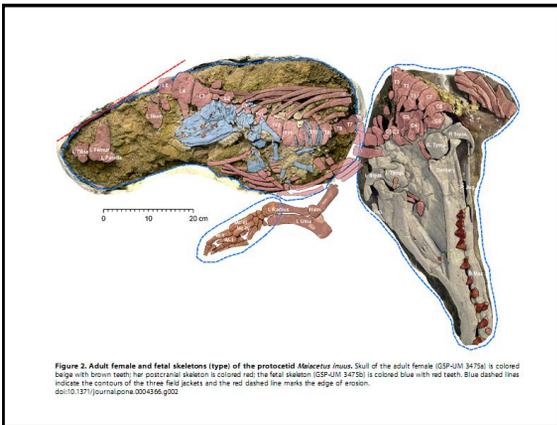
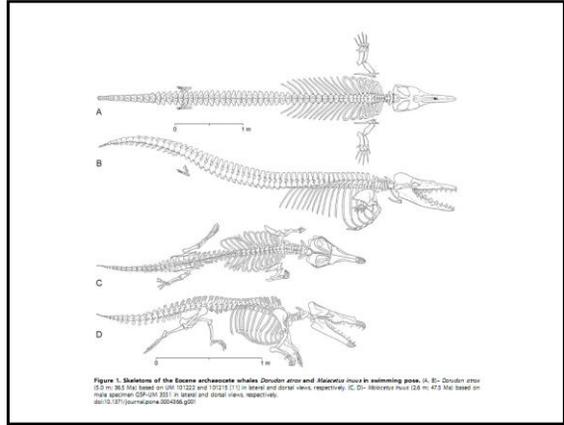
Philip D. Gingerich<sup>1,2</sup>, Munir ul-Haq<sup>3</sup>, Wighart von Koenigswald<sup>4</sup>, William J. Sanders<sup>5</sup>, B. Holly Smith<sup>6</sup>, Iyad S. Zalmout<sup>7</sup>

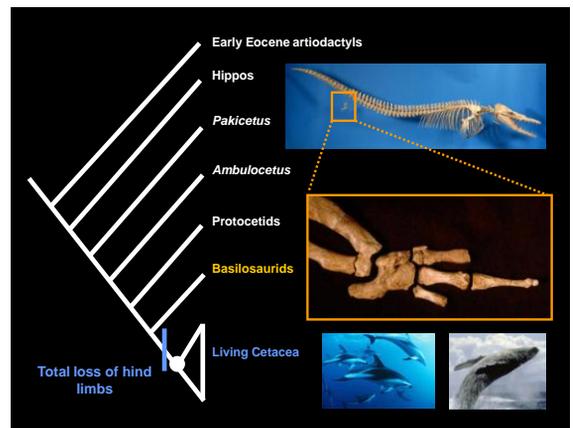
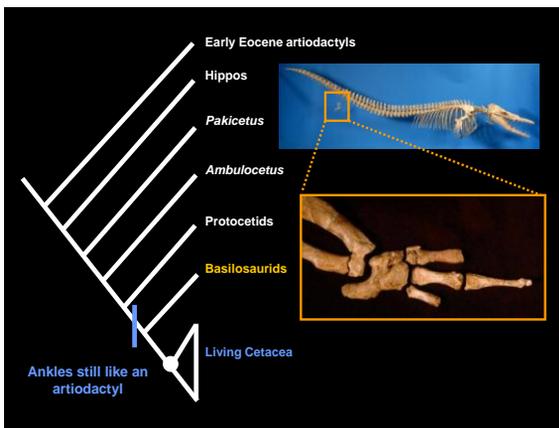
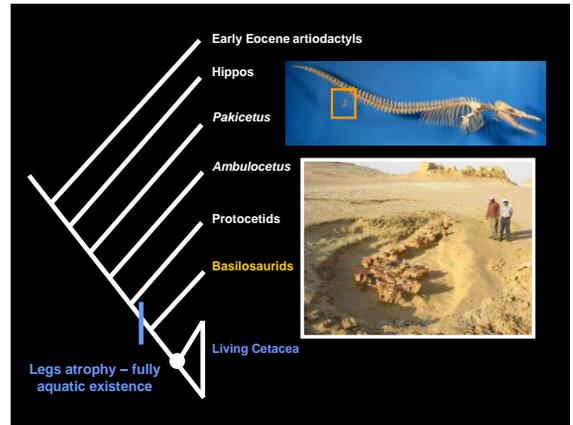
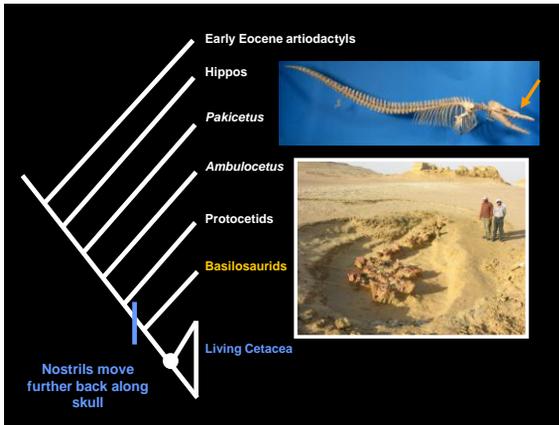
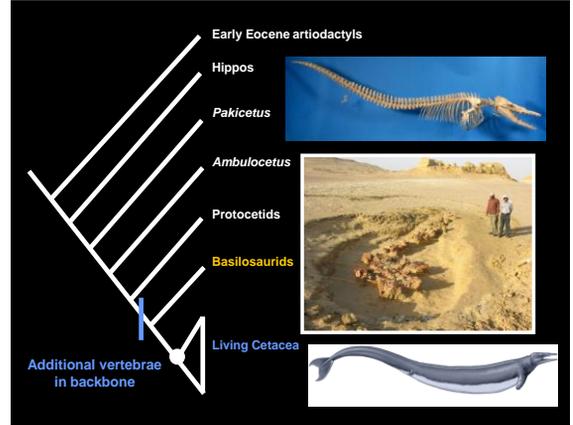
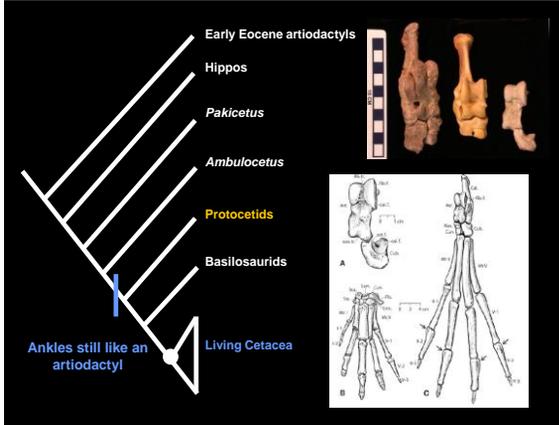
**Abstract**  
*Religimoid* protocetids are middle Eocene (16–17 Ma) archaeocete predators ancestral to later whales. They are found in marine sedimentary rocks, but retain four legs and some not yet fully aquatic. Protocetids have been interpreted as amphibious, feeding in the sea but returning to land to rest.

**Introduction/Principal Findings** Four adult skeletons of a new, 2.6 meter long protocetid, *Miocetus inuus*, are described from the early middle Eocene Habib Raif Formation of Pakistan. *M. inuus* differs from contemporary archaeocetes in having a large mandibular symphysis, distinct articular bones in the ankle, and a less hydrofoil-dominated postcranial skeleton. One adult skeleton is female and bears the skull and partial skeleton of a single large near-term fetus. The fetal skeleton is positioned for head-first delivery, which implies land mammals but not aquatic whales, evidence that both took place on land. The fetal skeleton has permanent first molars well mineralized, which indicates precocial development at birth. Precocial development, with attendant size and mobility, were an critical for survival of a neonate at the land-sea interface in the Eocene as they are today. The second adult skeleton is the most complete shown for a protocetid. The scapular column preserved articulates with 7 thoracic, 13 thoracic, 4 lumbar, 4 sacral, and 21 double, all four limbs are preserved with hands and feet. This adult is 12% larger in linear dimensions than the female skeleton, on average, has canine teeth that are 20% larger, and is interpreted as male. Moderate sexual dimorphism indicates limited male-male competition during breeding, which in turn suggests little aggregation of food or shelter in the environment inhabited by protocetids.

**Conclusions/Significance** Discovery of a near-term fetus positioned for head-first delivery provides important evidence that early protocetid whales gave birth on land. This is consistent with skeletal morphology enabling *Miocetus* to support its weight on land and corroborates previous ideas that protocetids were amphibious. Specimens this complete are unusual "fossil stores" providing insight into functional capabilities and the history of extant animals that cannot be gained any other way.

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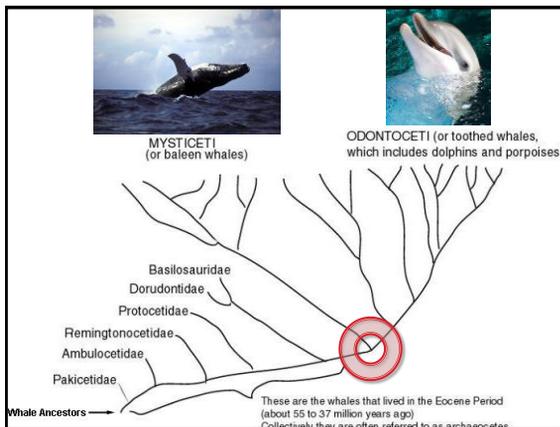
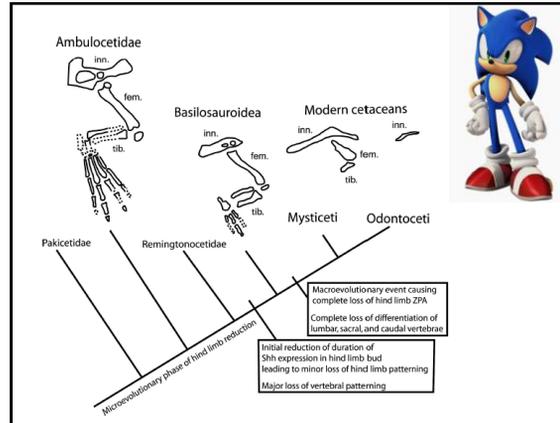


### Developmental basis for hind-limb loss in dolphins and origin of the cetacean bodyplan

J. G. M. Thewissen<sup>1\*</sup>, M. J. Cohn<sup>2</sup>, L. S. Stevens<sup>3</sup>, S. Bajpai<sup>4</sup>, J. Heyning<sup>5</sup>, and W. E. Horton, Jr.<sup>6\*</sup>

<sup>1</sup>Department of Anatomy, Northeast Ohio University College of Medicine, Rootstown, OH 44272; <sup>2</sup>Departments of Zoology and Anatomy and Cell Biology, University of Florida, Gainesville, FL 32611; <sup>3</sup>Department of Earth Sciences, Indian Institute of Technology, Kharagpur 751005, India; and <sup>4</sup>Department of Mammalogy, Communicated by Alan Walker, Ph.D.

Among mammals, modern or paucipos are unusual in the abcaean embryos do initiate hind limb outgrowth in amniotes.

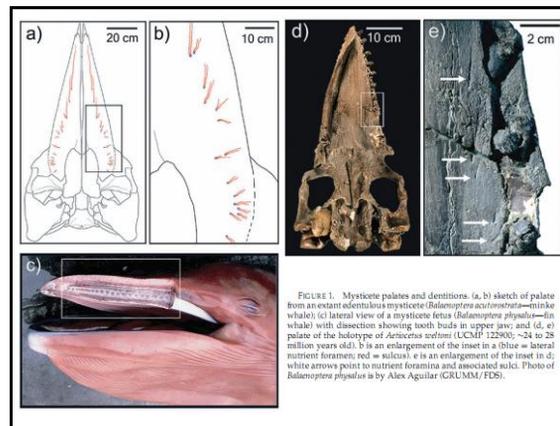
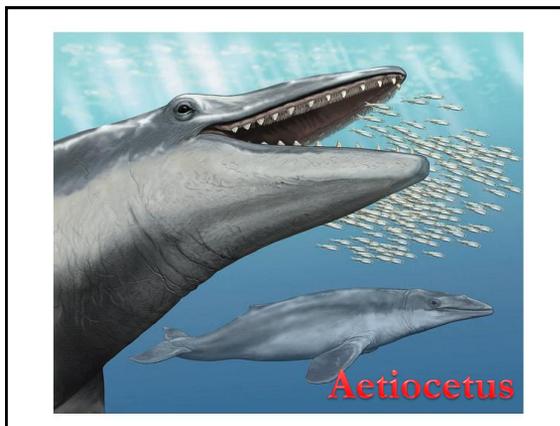


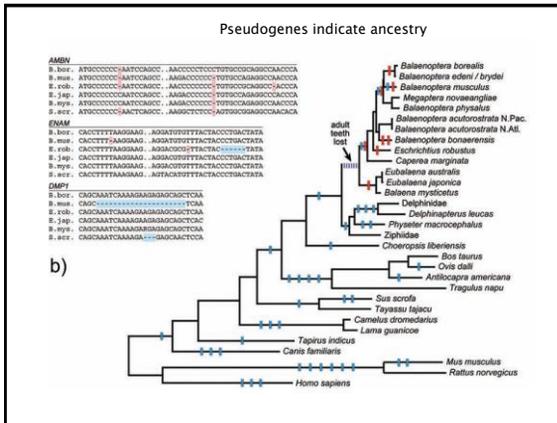
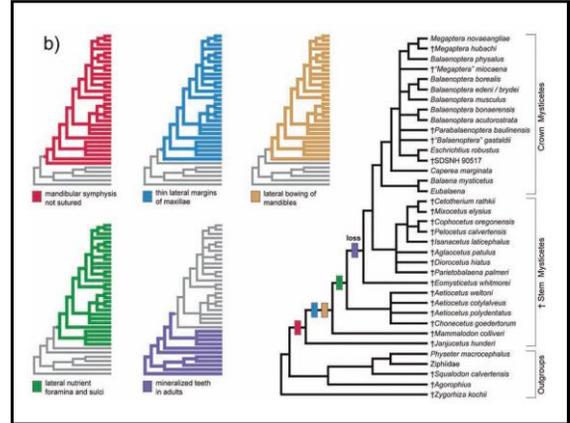
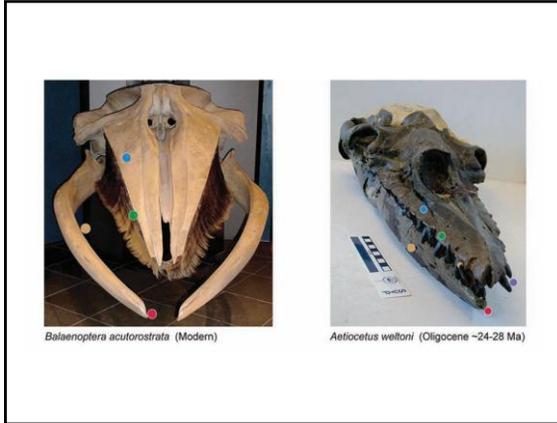
### Morphological and Molecular Evidence for a Stepwise Evolutionary Transition from Teeth to Baleen in Mysticete Whales

THOMAS A. DEMÉRIE,<sup>1</sup> MICHAEL R. MCGOWEN,<sup>2,3</sup> ANNALISA BERTA,<sup>2</sup> AND JOHN GATESY<sup>3</sup>

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<sup>2</sup>Department of Biology, San Diego State University, San Diego, California 92182, USA  
<sup>3</sup>Department of Biology, University of California, Riverside, California 92521, USA

**Abstract**—The origin of baleen in mysticete whales represents a major transition in the phylogenetic history of Cetacea. This key specialization, a keratinous sieve that enables filter-feeding, permitted exploitation of a new ecological niche and heralded the evolution of modern baleen-bearing whales, the largest animals on Earth. To date, all formally described mysticete fossils conform to two types: toothed species from Oligocene-age rocks (~34 to 34 million years old) and toothless species that presumably utilized baleen to feed. Based on ~30 million years old. Here, we show that several Oligocene toothed mysticetes have nutrient foramina and associated sulci on the lateral portions of their palates, homologous structures in extant mysticetes whose vessels that nourish baleen. The simultaneous occurrence of teeth and nutrient foramina implies that both teeth and baleen were present in these early mysticetes. Phylogenetic analyses of a supermatrix that includes extinct taxa and new data for 11 nuclear genes consistently resolve relationships at the base of Mysticeti. The combined data set of 27,340 characters supports a stepwise transition from a toothed ancestor, to a mosaic intermediate with both teeth and baleen, to modern baleen whales that lack an adult dentition but retain developmental and genetic evidence of their ancestral toothed heritage. Comparative sequence data for ENAM1 (enamelin) and AMELX (ameloblastin) indicate that enamel-specific loci are present in Mysticeti but have degraded to pseudogenes in this group. The dramatic transformation in mysticete feeding anatomy documents an apparently rare, stepwise mode of evolution in which a composite phenotype bridged the gap between primitive and derived morphologies; a combination of fossil and molecular evidence provides a multilayered record of this macroevolutionary pattern. **Keywords:** baleen, enamelin (ENAM1), evolution, filter-feeding, Mysticete, whale





**Duane T. Gish (1985)**

“Like the bats, the whales ... appear suddenly in the Tertiary times, fully adapted by profound modifications of the basic mammalian structure for a highly specialized mode of life”

(citing Colbert, 1955)

**Creationists Claim**

“The absence of unambiguous transitional fossils is illustrated by the fossil record of whales. ... Darwinists believe that whales evolved from a land mammal. **The problem is that there are no clear transitional fossils linking land mammals to whales.** If whales did have land-dwelling ancestors, it is reasonable to expect to find some transitional fossils.”

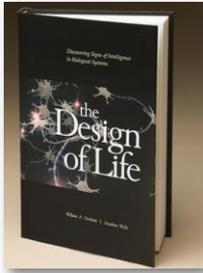
(p. 101 - 102)

**An ID Supplementary Textbook**

“Recently, some scientists think they have discovered a transitional fossil sequence connecting land-dwelling mammals to whales.”

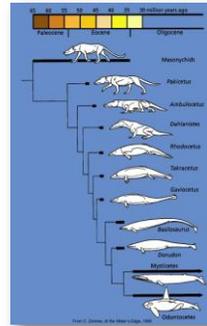
(2007, p. 20)

## Dembski & Wells (2007)



"Some Darwinists regard fossil evidence for the evolution of whales as a success story second only to the fossil evidence for the evolution of mammals from mammal-like reptiles. In fact, the evidence for neither is compelling." (84)

## Why whales are a kind



"Obviously, when the Bible clearly claims discontinuity, any other evidence is unnecessary. As a result, the quality of the ... whale series is overruled by the biblical claims of discontinuity between ... whales and land creatures."

(Wood & Murray, 2003)

## Kurt Wise on the whale series



The whale fossil series of "intermediates expected by macroevolutionary theory is surely strong evidence for macroevolutionary theory. Creationists therefore need to accept this fact. It certainly CANNOT be said that traditional creation theory expected (predicted) any of these fossil finds"

(CEN Tec. J. 9 1995)

## So how do you explain them?



They "may be nothing more than morphological intermediates which ended up in stratigraphic intermediate position by one accident or another... a random depositional process."

(CEN Tec. J. 9 1995)

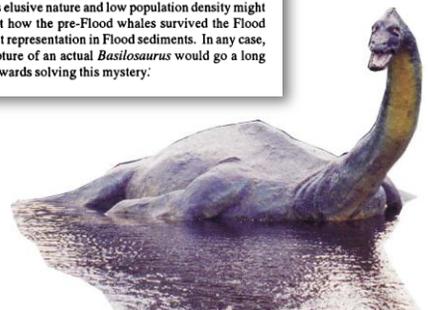
## Kurt Wise on Whales

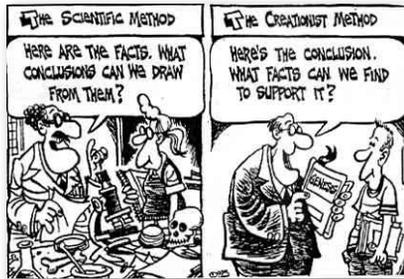


The whale series is "a very powerful stratomorphic series ... not explainable by the conventional Flood geology method ... Furthermore, whale fossils are only known in Cenozoic (and thus post-Flood) sediments. It seems to run counter to the intuitive expectation that the whales should have been found in or even throughout Flood sediments. At present creation theory has no good explanation for the fossil record of whales"

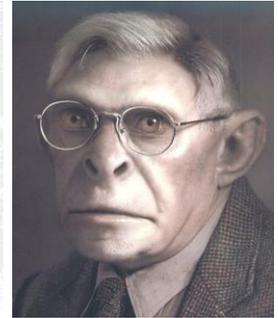
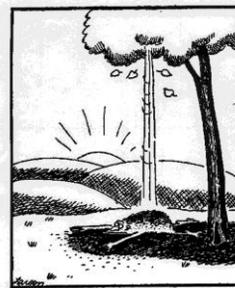
(CEN Tec. J. 9 1995)

towards terrestrial sedimentation?  
(d) Collected evidence from sightings of Nessie, Champs, and other similar sightings at similar latitudes has suggested that they might be living examples of the archaeocete *Basilosaurus* (old name *Zeuglodon*). If so, then its elusive nature and low population density might suggest how the pre-Flood whales survived the Flood without representation in Flood sediments. In any case, the capture of an actual *Basilosaurus* would go a long way towards solving this mystery:





## Humans are, of course, a kind!



## Carolus Linnaeus, 1747



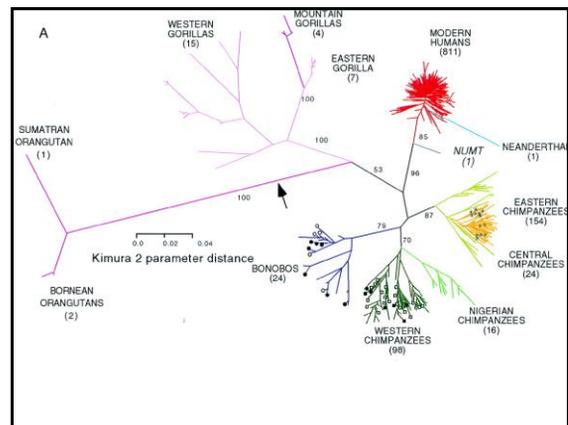
"I demand of you, and of the whole world, that you show me a generic character, by which to distinguish between Man and Ape. I myself most assuredly know of none. I wish somebody would indicate one to me. But if I had called man an ape, or *vice versa*, I should have fallen under the ban of all the ecclesiastics. It may be that as a naturalist I ought to have done so."

## Family Hominidae

- ▶ Pongo (2 spp.)
- ▶ Gigantopithecus<sup>†</sup>
- ▶ Sivapithecus<sup>†</sup>
- ▶ Pan (2 spp.)
- ▶ Gorilla (2 sp.)
- ▶ Ardipithecus<sup>†</sup>
  - *A. ramidus*
  - *A. kaddabba*
- ▶ Australopithecus<sup>†</sup>
  - *A. afarensis*
  - *A. ghari*
  - *A. africanus*
  - *A. anamensis*
- ▶ Paranthropus<sup>†</sup>
  - *P. aethiopicus*
  - *P. boises*
  - *P. robustus*
- ▶ Sahelanthropus *tchadensis*<sup>†</sup>
- ▶ Pierolapithecus *catalaunicus*<sup>†</sup>
- ▶ Orrorin *tugenensis*<sup>†</sup>
- ▶ Kenyanthropus<sup>†</sup>
  - *K. platyops*
  - *K. rudolfensis*
- ▶ Homo
  - *H. habilis*<sup>†</sup>
  - *H. ergaster*<sup>†</sup>
  - *H. georgicus*<sup>†</sup>
  - *H. erectus*<sup>†</sup>
  - *H. antecessor*<sup>†</sup>
  - *H. heidelbergensis*<sup>†</sup>
  - *H. neanderthalensis*<sup>†</sup>
  - *H. floriensis*<sup>†</sup>
  - *H. sapiens*

## The Baraminological Position

- ▶ Wood (2006): "the **family** is an approximation of the 'created kind' may be correct"
- ▶ Wood & Murray (2003): "Obviously, when the Bible clearly claims discontinuity, any other evidence is unnecessary. As a result, the quality of the *Australopithecine* ... series is overruled by the biblical claims of discontinuity between humans and apes"



### Chromosome Numbers in the great apes

human ( <i>Homo</i> )	46
chimpanzee ( <i>Pan</i> )	48
gorilla ( <i>Gorilla</i> )	48
orangutan ( <i>Pongo</i> )	48

**Testable prediction:** If these organisms share a common ancestor, that ancestor had either 48 chromosomes (24 pairs) or 46 (23 pairs).

### Chromosome Numbers in the great apes

human ( <i>Homo</i> )	46
chimpanzee ( <i>Pan</i> )	48
gorilla ( <i>Gorilla</i> )	48
orangutan ( <i>Pongo</i> )	48

**Testable prediction:** Common ancestor had 48 chromosomes (24 pairs) and humans carry a fused chromosome; or ancestor had 23 pairs, and apes carry a split chromosome.

### Human Chromosome #2 shows the exact point at which a fusion took place

"Chromosome 2 is unique to the human lineage of evolution, having emerged as a result of head-to-head fusion of two acrocentric chromosomes that remained separate in other primates. The precise fusion site has been located in 2q13–2q14.1 (ref. 2; hg 16:114455823 – 114455838), where our analysis confirmed the presence of multiple subtelomeric duplications to chromosomes 1, 5, 8, 9, 10, 12, 19, 21 and 22 (Fig. 3; Supplementary Fig. 3a, region A). During the formation of human chromosome 2, one of the two centromeres became inactivated (2q21, which corresponds to the centromere from chimp chromosome 13) and the centromeric structure quickly deteriorated (42)."

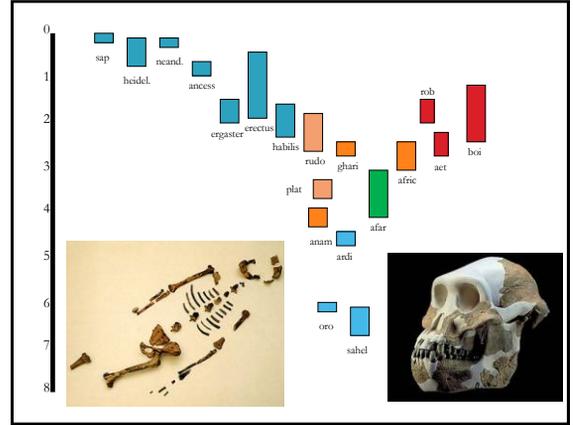
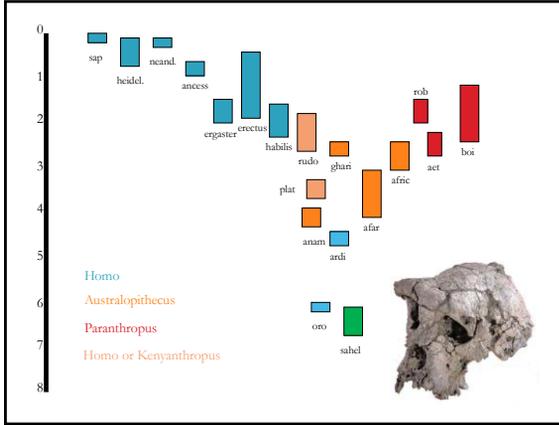
Hillier *et al* (2005) "Generation and Annotation of the DNA sequences of human chromosomes 2 and 4," *Nature* 434: 724 – 731

### GLO Pseudogenes

- Genes which are non-functional due to mutations or deletions: e.g. L-gulano-γ-lactone oxidase (GLO) in humans.
- It is known that vitamin C is required in the diet of all primates, (though not for other mammals except guinea pigs). We can make the **prediction** that primates should also be found to have GLO pseudogenes and that these would carry similar crippling mutations to the ones found in the human pseudogene.
- This **prediction** has been tested (Ohta and Nishikimi, 1999). The GLO pseudogene sequence was compared from human, chimpanzee, macaque and orangutan; all four pseudogenes were found to share a **common single nucleotide deletion** that would cause the remainder of the protein to be mistranslated.
- These "vestigial" genes indicate a shared evolutionary history.

### Endogenous Retroviruses

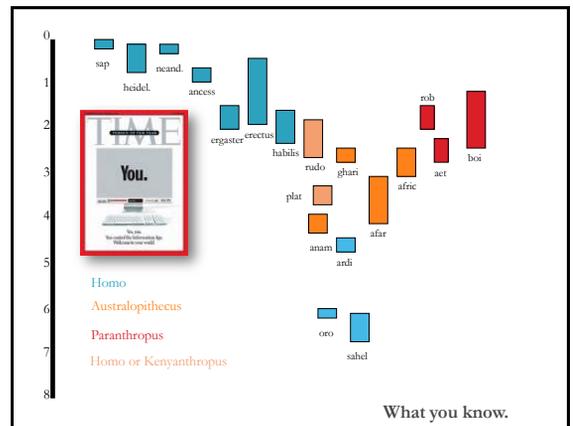
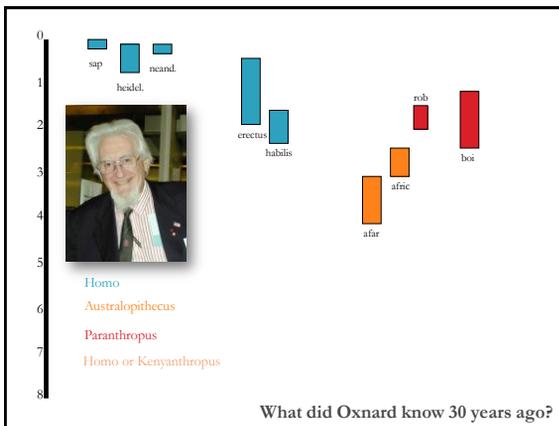
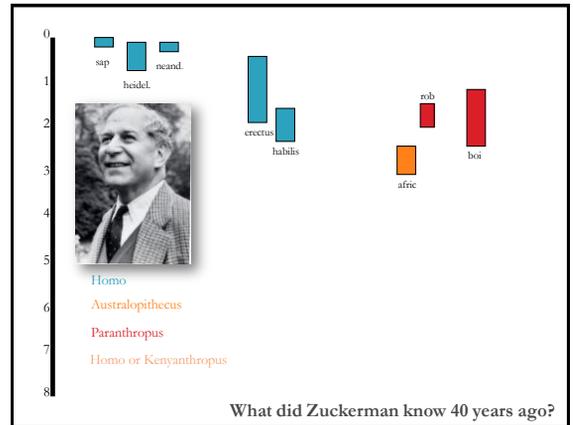
**Figure 4.4.1. Human endogenous retrovirus K (HERV-K) insertions in identical chromosomal locations in various primates** (Reprinted from Lebedev *et al.* 2000, © 2000, with permission from Elsevier Science).

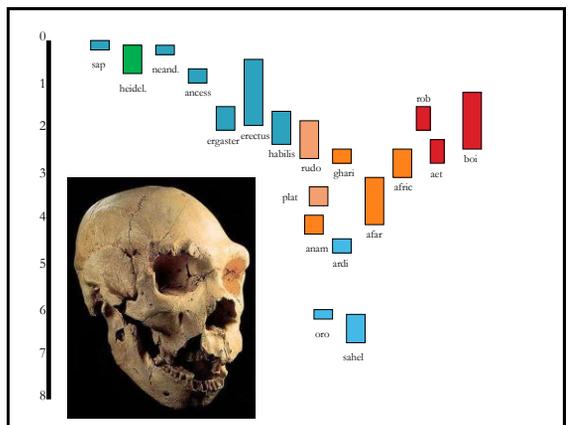
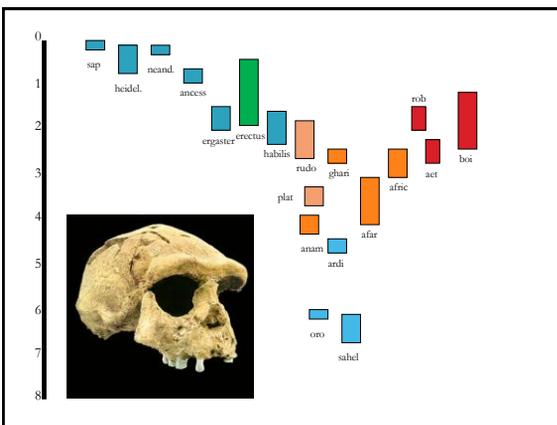
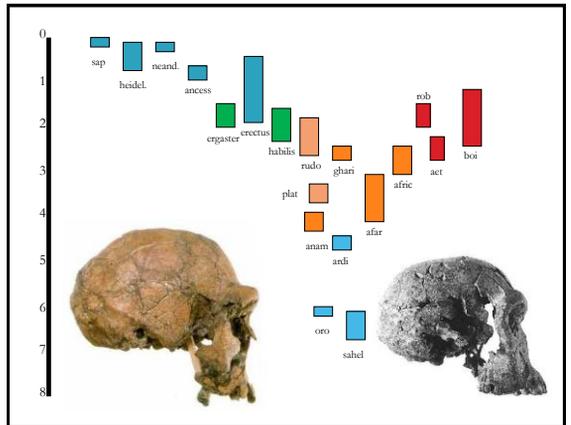
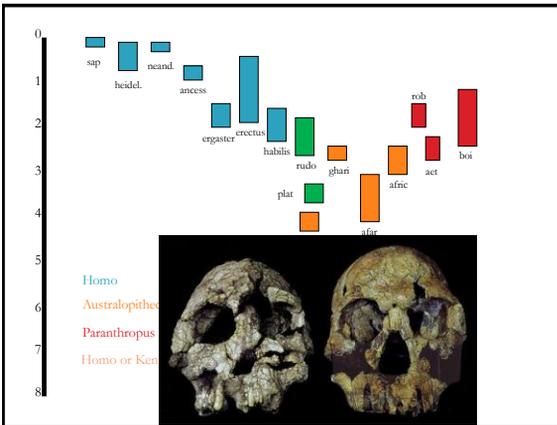
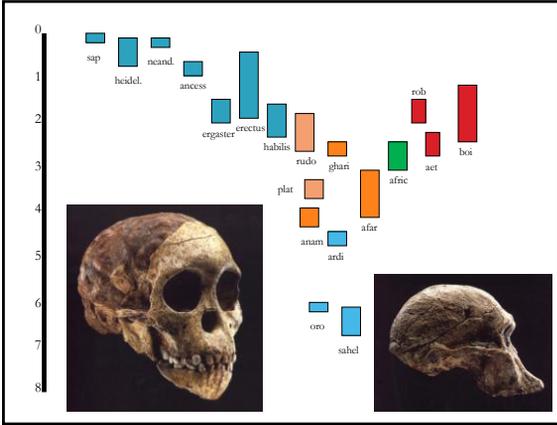


### Duane T. Gish on the Australopiths

Solly Zuckerman “studied these fossils for many years ... **the most sophisticated methods** of analysis available ... [He concluded they] were not intermediate ... [Charles Oxnard] applied the **best methods available** [and concluded that] these creatures ... are not intermediate and man’s ancestor.”

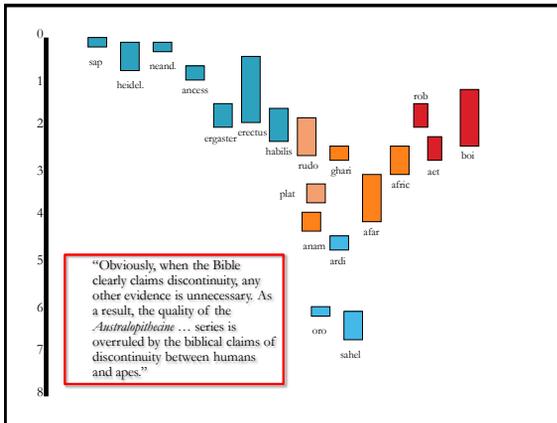
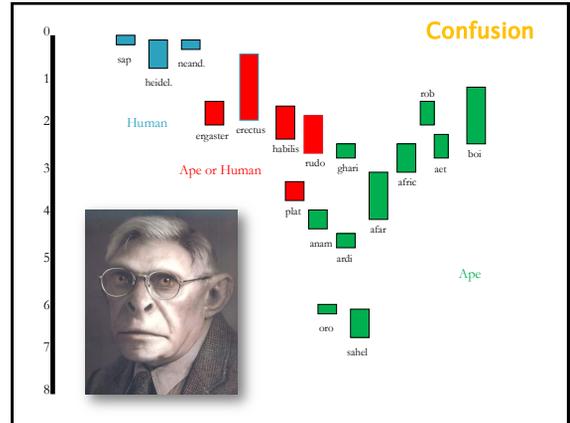
“I believe that these scientists have done **the very best research** on these creatures ... Evolutionists do not pay any attention to these scientists. They don’t like what they see. They would rather believe [Donald] Johanson.”





## A Prediction:

*If there are no intermediary forms, then there should be no confusion as to whether a specimen is "ape" or "human," especially among creationist writers.*



**GOD SAID IT,  
I BELIEVE IT,  
THAT SETTLES IT!**

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