

# An Abbreviated Guide to Evolutionary Transitional fossils !

Evolution is considered by most to be a proven scientific fact. The best way to verify its factualness is to examine its record as preserved in the fossil record. As France's foremost zoologist, Pierre Grasse, has stated,

"Naturalists must remember that the process of evolution is revealed only through fossil forms. ...only paleontology can provide them with the evidence of evolution and reveal its course or mechanisms. Neither the examination of present beings, nor imagination, nor theories can serve as a substitute for paleontological documents. If they ignore them, biologists, the philosophers of nature, indulge in numerous commentaries and can only come up with hypotheses"  
P.P. Grasse, *Evolution of Living Organisms*, Academic Press, New York, 1977 p. 4

The purpose of this little study is to do exactly as Dr. Grasse advises, referencing textbooks or journals articles written by scientists committed to the evolutionary viewpoint. Let us look at the transitional fossils that link the major evolutionary stages:

## Evolution of invertebrates: fossil evidence

"The introduction of a variety of organisms in the early Cambrian,..., is surprising...The introduction of abundant organisms in the record would not be so surprising if they were simple. Why should such

complex\_organic forms be in rocks about six hundred million years old and be absent or unrecognized in the records of the preceding two billion years? ... If there has been evolution of life, the absence of the requisite fossils in the rocks older than the Cambrian is puzzling"

M. Kay and E.H. Colbert, *Stratigraphy and Life History* (1965), p. 102.

"... the Cambrian strata of rocks, vintage about 600 million years..., are the oldest in which we find most of the major invertebrate groups. And we find many of them already in an advanced state of evolution, the very first time they appear. It is as though they were just planted there, without any evolutionary history. Needless to say, this appearance of sudden planting has delighted creationists"

Richard Dawkins, *The Blind Watchmaker*, 1987. p. 229.

"The fossil record is of little use in providing direct evidence of the pathways of descent of the invertebrate classes. Each phylum ... had already evolved its characteristic body plan when it first appeared... and no phylum is connected to any other via intermediate fossil types. Indeed none of the invertebrate classes can be connected with another class by series of intermediates"

J. Valentine, *The Evolution of Complex Animals* in What Darwin Began, L.R. Godfrey, Ed., Allyn & Bacon Inc. 1985 p. 263.

"Among all of the ideas concerning the evolutionary origin of the metazoan condition, there exists a common problem: the search for protozoan – metazoan intermediates."

Richard C. Brusca & Gary J. Brusca. *Invertebrates* 1990. p. 114

"Sponges are an ancient group, and the important events in their origin and early evolution lie hidden in Precambrian time" (ibid., p. 205)

"We must still address the phylogenetic origin of the molluscs themselves. The excellent fossil record of molluscs extends back some 500 million years and indicates that the origin of this phylum lies hidden in Precambrian history, and we may never know with much certainty what the first mollusc was like." (ibid., p. 764)

"The known fossil record offers virtually no help in these matters" [origin of the comb jellies] (ibid. p. 276)

"The fossil record is of no use in establishing the origin of nemerteans in geological time... Their origin is puzzling and one must take into account controversies..." (ibid. p. 330)

"The origin of insect flight, like the origins of wings and flight in vertebrates, is a wonderful mystery yet to be completely solved. The basic problem is one of explaining the intermediate stages ... The earliest known insect fossils include both winged and wingless types – but no intermediates or partly winged fossil forms have yet been found..." (ibid., p. 562)

## Evolution of fishes: fossil evidence

"The very first fishes undoubtedly arose from invertebrate protochordates, perhaps a urochordate or cephalochordate. However, the first fishes left no fossil record, and their form and relationships are a mystery."

Gene S. Helfman, Bruce B. Collette, and Douglas E. Facey. *The Diversity of Fishes*. 1999. P 151 - 152

"No intermediate fossils between jawed and jawless forms have been found – early fossils of jawed fishes had jaws, teeth, scales and spines. The origins of jaws and the other structures that characterized the gnathostomes are lost in the fossil record, belonging to some group about which we know nothing" (ibid., p. 157)

"It is intellectually frustrating to have major living taxa for which we can find no clear ancestral lineages. Such phylogenetic solutions beg for solution." (ibid., p. 176)

## Fish -> Amphibians: fossil evidence

"Since the fossil material provides no evidence of other aspects of the transformation from fish to tetrapod, paleontologists have had to speculate how legs and aerial breathing evolved..."  
Barbara J. Stahl (St Anselm's College, USA) in *Vertebrate History: Problems in Evolution*, McGraw-Hill, New York, 1974 pp. 148 and 195

## Amphibians -> Reptiles: fossil evidence

"The key to continuous life on land was the amniotic egg ... enclosed the developing embryo ... provided

plentiful food ... an outer shell. Internal fertilization of the egg ...accompanied the advancing design of the first terrestrial eggs among the vertebrates. How this great increase in complexity of the egg occurred remains lost in the mists of time"

Price, *Biological Evolution*, 1996 p. 139-141

## Evolution of Plants: fossil evidence

"The origin of the land plants is about as "lost in the mists of time" as anything can be, and the mystery has created a fertile arena for debate and conjecture." Price, *Biological Evolution*, 1996 p. 144

"Much evidence can be adduced in favor of the theory of evolution - from biology, biogeography, and paleontology, but I still think that to the unprejudiced, the fossil record of plants is in favor of special creation" Corner, *Evolution in Contemporary Botanical Thought*. 1961. p.97 1961 p.97

## Evolution of Mammals: fossil evidence

"The most puzzling event in the history of life on earth is the change from ... the Age of Reptiles, to the Age of Mammals. It is as if the curtain were rung down suddenly on the stage where all the leading roles were taken by reptiles... and rose immediately again to reveal ... an entirely new cast... played by mammals of sorts barely hinted at in the preceding acts" G.G. Simpson, quoted in *Life Before Man*, 1972, p. 42

"The [evolutionary] transition to the first mammal, which probably happened in just one or, at most, two lineages, is still an enigma"  
Roger Lewin, "Bones of mammals' ancestors fleshed out". *Science*, vol. 212, 26 June, 1981, p.1492.

## Evolution of Whales: fossil evidence

NOTE: *Ambulocetus* and *Basilosaurus* have been postulated as transitional to modern whales

"Since the pelvic girdle is not preserved, there is no direct evidence in *Ambulocetus* [a suggested whale transition] for a connection between the hind limbs and the axial skeleton. This hinders interpretations of locomotion in this animal since many of the muscles that support and move the hindlimb originate on the pelvis"

J.G.M. Thewissen, ST Hussain, and M. Arif, "Fossil evidence for the origin of Aquatic locomotion in Archeocete Whales" *Science* 263(5144):210-212. Jan 14, 1994

The serpentine form of the body and the peculiar shape of the cheek teeth make it plain that these archaeocetes [like *Basilosaurus*] could not possibly have been the ancestors of modern whales"  
*Barabara Strahl, Vertebrate History: Problems in Evolution.* 1974. p 489

### Evolution of flying mammals – bats: fossil evidence

"unfortunately no fossils have yet been found of animals ancestral to the bats"  
Richard Leakey, footnote in the *Illustrated Origin of Species*, abridged by RE Leakey, 1979. p. 128

### Evolution of Birds

NOTE: Archaeopteryx has been postulated as a reptile-bird transitional fossil

"Archaeopteryx probably cannot tell us much about the early origins of feathers and flight in true protobirds because Archaeopteryx was, in a modern sense, a bird"  
Allan Feduccia, *Science* 259: 790 (1993)

"At the higher level of evolutionary transition between basic morphological designs, gradualism has always been in trouble, .... Smooth intermediates between Bauplane are almost impossible to construct, even in thought experiments; there is certainly no evidence for them in the fossil record (curious mosaics like Archaeopteryx do not count)"  
S.J. Gould and N. Eldridge, *Paleobiology* 3:147 (1977)

"Feathers are unique to birds, and no known structure intermediate between scales and feathers has been identified"  
J Alan Feduccia. *The Age of Birds.* 1980 p. 52

### Human Evolution

#### The Australopithecines: A Transition?

"But I myself am totally unpersuaded. Almost always when I have tried to check the anatomical claims on which the status of *Australopithecines* is based, I have ended in failure"  
Sir Solly Zuckerman. *Beyond the Ivory Tower.* 1970. P 77

"Multivariate studies of several anatomical regions, shoulder, pelvis, ankle, foot, elbow, and hand are now available for the Australopithecines. These suggest that the common view, that these fossils are similar to modern man or that on those occasions when they depart from a similarity to man they resemble the African great apes, may be incorrect. Most of the fossil fragments are in fact uniquely different from both man and man's nearest living genetic relatives, the chimpanzee and gorilla"  
Dr. Charles Oxnard. *University of Chicago Mag.* (Winter 1974) pp 11-12

"The Australopithecines are rapidly sinking back to the status of peculiarly specialized apes..."  
Matt Carmill, David Pilbeam, and Glynn Isaac, "One hundred Years of Paleoanthropology" *American Scientist* 74:419 (1986)

#### Is *A. Afarensis* ('Lucy') a transition?

"[Lucy is] more different from both African apes and humans in most features than these latter are from each other. Part of the basis of this acceptance has been the fact that investigators ... used techniques and research designs that were less biased by prior notions as to what the fossils might have been' ... In this case, also, most of the new studies have come from laboratories independent of those representing individuals who found the fossil"  
Dr. Charles Oxnard, *Fossils, Teeth and Sex - New Perspectives on Human Evolution* p. 227 (1987)

#### Homo erectus: Ape-man or man?

"Homo erectus is distinct from modern man (Homo sapiens), but there is a tendency to exaggerate the differences. Even if one ignores transitional or otherwise hard to classify specimens and limits consideration to the Java and Peking populations, the range of variation of many features of Homo erectus falls within that of modern man"  
Gabriel Ward Lasker, *Physical Anthropology.* 1973 p 284

"... when we find that significant differences have developed, over a short time span, between closely related and contiguous peoples, as in Alaska and Greenland, and when we consider the vast differences that exist between remote groups such as Eskimos and Bushmen, who are known to belong within the single species Homo sapiens, it seems

justifiable to conclude that Sinanthropus [Peking man] belongs within this same diverse species."  
William S Laughlin, "Eskimos and Aleuts: Their Origins and Evolution" *Science* 142 (\* November 1963): 644

"In our view there are two alternatives. We should either admit that the Homo erectus/Homo sapiens boundary is arbitrary and use nonmorphological (i.e. temporal) criteria for determining it, or Homo erectus should be sunk [into Homo sapiens]"  
Milford H. Wolpoff, Wu Xin Zhi, and Alan G. Thorne, "Modern Homo sapiens Origins: A General Theory of Hominid Evolution Involving the Fossil Evidence from East Asia", *The Origins of Modern Humans*, FH Smith and Frank Spencer eds. 1984. 465-66

#### Neanderthal: What was he?

"The cranial capacity of the Neanderthal race of Homo sapiens was, on the average, equal to or even greater than that in modern man"  
Theodius Dobzhansky "Changing Man", *Science* Vol. 155 p. 410 (1967)

"Neanderthal man may have looked like he did, not because he was closely related to the great apes, but because he had rickets"  
"Neanderthals had rickets", *Science Digest* Vol. 69 p. 35 (1971)

### The testimony at the museums

"Darwin's general solution to the incompatibility of fossil evidence and his theory was to say that the fossil record is a very incomplete one - that it is full of gaps, and that we have much to learn. Well, we are now about 120 years after Darwin and the knowledge of the fossil record has been greatly expanded. We now have a quarter of a million fossil species but the situation hasn't changed much"  
Dave Raup. *Field Museum of Natural History Bulletin* 50:22 (1979) [Raup is at the American Museum of Natural History]

"Gradualism is a concept I believe in... because of my understanding of genetics seems to demand it. Yet Gould and the American Museum people are hard to contradict when they say there are no transitional fossils... You say that I should at least 'show a photo of the fossil from which each type of organism was derived'. I will lay it on the line -- there is not one such fossil for which one could make a watertight argument"

Colin Patterson, Senior paleontologist at the British Museum of Natural History in a letter to L.D. Sunderland as quoted in *Darwin's Enigma* by L.D. Sunderland, p. 89 1984

### Summary

"Since Darwin's time the search for missing links in the fossil record has continued on an ever-increasing scale. So vast has been the expansion of paleontological activity over the past one hundred years that probably 99.9% of all paleontological work has been carried out since 1860. Only a small fraction of the hundred thousand or so fossil species known today were known to Darwin. But virtually all the new fossil species discovered since Darwin's time have either been closely related to known forms or, .. strange unique types of unknown affinity."  
Denton, Michael, *Evolution: A Theory in Crisis* (London: Burnett Books, Ltd., 1985), p160-161

"I regard the failure to find a clear 'vector of progress' in life's history as the most puzzling fact of the fossil record... Heretofore, we have thrown up our hands in frustration at the lack of expected pattern in life's history—or we have sought to impose a pattern that we hoped to find on a world that does not really display it"  
Gould, Stephen Jay, "The Ediacaran Experiment," *Natural History*, vol. 93 (February 1984), p 23

"Despite the bright promise that paleontology provides a means of 'seeing' evolution, it has presented some nasty difficulties for evolutionists the most notorious of which is the presence of 'gaps' in the fossil record. Evolution requires intermediate forms between species and paleontology does not provide them. The gaps must therefore be a contingent feature of the record."  
Kitts, David B., "Paleontology and Evolutionary Theory," *Evolution*, vol. 28 (September 1974), pp. 458-472.

*Ragnar Olson*

Questions? Comments? E-mail me at [ragnar@website.considerthegospel.org](mailto:ragnar@website.considerthegospel.org)  
Visit website at [www.considerthegospel.org](http://www.considerthegospel.org)

