

## Science Tear Sheet #4. Human Evolution: The Story, the Legend, and the Myth

*The man who pleads his case first seems to be in the right;  
then his opponent comes and puts him to the test. – Proverbs 18:17*

Well before *The Origin of Species* was published (1859) and before any hominid fossils were found, the French philosopher Jean Rousseau (d. 1778), following Lucretius, understood that ideologies rejecting the existence of a Creator must provide a non-theistic answer to a question asked by men of all ages: “Where did we come from?” Rousseau speculated in his work, *On the Origin of Inequality*, that if the human race “had been left to itself” in a “state of nature” and spared “the intervention of God,” it would have gone through “successive developments” from an “animal system...at the beginning” through which it “acquired only by a long process” the physical changes from an original state when mankind “walked upon all fours, with his looks directed toward the earth.”<sup>1</sup>

Likewise, today’s humanists, materialists, atheists, modernists, post-modernists, agnostics, and New Age believers claiming an intellectual basis for their worldview must “sell” the story of human evolution because Special Creation is the only viable alternative. It is the place of *paleoanthropology* (the study of human origins and human evolution) to develop a plausible story and, having produced many, it has not disappointed. But are the stories scientifically sound and logical? Has the rush to jump on board the band wagon of human evolution and discard more than nineteen centuries of Church teachings about origins been justified?

Appendix A explains that the history of paleoanthropology has been dominated by false claims, unwarranted extrapolations, enormous logical inconsistencies, and the presupposition that evolution is true. The great anatomist, Sir Solly Zuckerman described the field as a “presumed biological science...where to the faithful anything is possible—and where the ardent believer is sometimes able to believe several contradictory things at the same time.”<sup>2</sup>

Why don’t all Christians see the claims for human evolution in this light? The answer is that: 1) few have read the writings of prominent evolutionists where philosophical motives are clearly stated, or they mistakenly believe that the “scientific” conclusions of evolutionists are independent of their worldview and their quest for prestige and funding; and 2) even fewer have critically studied the scientific evidence for themselves. Consequently, many who seek the harmony of faith and science see no alternative but to accept theistic evolution and to discard the historical Church teachings and sound principles of Scriptural interpretation. This tendency is often reinforced from the pulpit or by apologists who have similarly not studied the scientific evidence. Unfortunately, this approach results in massive confusion among the faithful, and leaves the public school classroom door wide open for the teaching of *materialistic* evolution and humanistic philosophy, which has led *many* trusting children away from their Christian faith.

Because of the stakes, loyal Christians have a strong moral obligation to seek truth and to critically evaluate the evidence for human origins set forth by evolutionists. Let us begin the journey.

## Human Evolution: The Story

*My people perish for want of knowledge! – Hosea 4:6*

The case for human evolution is presented first and is ***told from the perspective of evolutionary science***. The presentation includes background information and then a discussion of the primary *hominids* (sometimes hominins), defined as a species more closely related to modern humans than to any other living species. Throughout this appendix, the fossil dates used by evolutionists will be relied upon, even though there are many uncertainties associated with the dating of fossils that are beyond the present focus.

The study of human evolution is dominated by the study of fossils, with the intent of making inferences about the genetic ancestry of modern man, *Homo sapiens* (hereafter, *H. sapiens*). Thus, the most basic underlying assumption is that genetic relationships and evolutionary histories (sometimes called phylogenies) can reasonably be inferred by evaluating fossils, which most commonly consist of *craniodental* (cranial and dental) evidence.

A fossil consists of the hardened remains of an animal or plant from a previous geological age, and is formed by rapid burial after death, so that normal decomposition does not occur. The process of discovering hominid fossils is relatively straightforward. Typically, a promising area of land is chosen based on the presence of visible fossils. Particularly productive are those areas that have been eroded, such that, like a multi-layered slice of cake, horizontal layers of water deposited sediments called “strata” are exposed.

While some of the early hominid finds were in Europe, Indonesia, South Africa, and China, the most significant finds of the past fifty years have occurred in east Africa, especially in Ethiopia, Tanzania, and Kenya, and were discovered by well-known names such as the Leakey family (primarily Louis, Mary, and Richard), Donald Johanson, and Tim White.

Fossil finds are often fragmentary and fossil teeth easily constitute the most common find due to their durability. A mandible (lower jaw) with a few teeth still intact is a major find. Fossil teeth and other remains are studied in exquisite detail, and slight differences in *morphology* (the form, shape and structure of a fossil) can be an adequate basis on which to announce a new hominid species.

Once a hominid fossil is found and analyzed, assignment of the fossil is normally made to the *Homo*, *Australopithecus*, or another genus, and to a species within the genus (such as *erectus* or *sapiens* in the genus *Homo*). In 1999, an important article in *Science* explained that fossils are assigned to the *Homo* genus if they satisfy at least one of the following criteria: 1) evidence of the use of stone tools; 2) a cranial capacity (a proxy for brain size) of at least 600 cubic centimeters (cc); 3) evidence (such as worn grooves on the skull) that the specimen possessed muscles enabling speech, or that a brain structure consistent with human speech was present; or 4) a human-like morphology, especially of the teeth, skull, knee, hands or feet.<sup>3</sup>

Paleoanthropologists believe that human evolution is a scientific fact. As indicated by artist renderings commonly found in biology textbooks, man’s history is claimed to involve the gradual transition from a small bodied, small brained, ape-like creature that used arms and legs for locomotion, to the upright, large bodied and large brained *H. sapiens* over a period of millions of years. This progression occurred as natural selection acted upon random genetic changes (beneficial mutations) and other factors to produce new species that could better compete and reproduce in the environment. This process caused other species to go extinct as, according to Darwinian theory, selective pressures do not allow species competing for scarce resources in the same ecological niche to co-exist in the same area for long periods of time. In other words, closely related, competing species

would not be long-time contemporaries in the same geographical area.<sup>1</sup> As stated in *Science News*, “Evolution theory says it is impossible for two similar groups (having the same environmental and ecological needs) to live sympatrically. One would rapidly displace the other and evolution would go on with the more hardy group.”<sup>4</sup>

Evolutionary models have consistently assumed that the modern chimpanzee and *H. sapiens* share a common ancestor that lived between 5 and 7 mya (million years ago). The prevailing theory has been that when these two lines diverged, the line leading to modern man subsequently underwent dramatic changes, while the line to the modern chimpanzee changed relatively little. Because of the modern chimpanzee’s presumed resemblance to the common ancestor of chimpanzees and humans, a fossil having a morphology between that of the chimpanzee and *H. sapiens* is usually placed in man’s evolutionary history. The assumed place in this history is established through fossil dating and by comparing the fossil with analogous parts of the modern chimpanzee and *H. sapiens*.

Evolutionists explain that, increasingly during the past 30 years, inferences made through the study of fossils have been independently confirmed through genetic studies and the concept of the “molecular clock.” These studies compare the genetic differences between modern humans and the modern chimpanzee and then, based on an average mutation rate, determine how long ago the genomes would have been identical (i.e., when the last common ancestor lived). The National Academy of Sciences publication *Teaching About Evolution* explains:

...the larger number of cell divisions that have elapsed between the time that two organisms diverged from their common ancestor, the more differences there will be in their DNA sequences due to chance errors. This molecular divergence allows researchers to track evolutionary events by sequencing the DNA of different organisms. For example, the lineage that led to humans and to chimpanzees diverged about 5 million years ago...<sup>5</sup>

This claimed independent agreement of the fossil evidence and genetic studies, suggesting that the last common ancestor between the chimpanzee and modern human lived between 5 and 7 million years ago, makes the case for human evolution very sound.

A second type of genetic studies using the molecular clock concept involves analyses, not of the genetic differences between humans and chimpanzees, but among various populations of *H. sapiens*. The purpose of these studies is to evaluate human genetic differences and, projecting backwards in time with the use of an assumed average mutation rate, determine how long ago the most recent common ancestor of humans lived. These studies include mitochondrial DNA studies (mtDNA is inheritable genetic material passed on almost entirely from the mother to offspring (initially mtDNA was assumed to be exclusively from the mother, see below)) and Y-chromosome analyses (genetic material passed from father to son.) In general, evolutionists explain that the results of these studies indicate that *H. sapiens* is between 120,000 and 200,000 years old, which makes them consistent with the interpretation of hominid fossils. They also explain that the term “mitochondrial Eve” often associated with mtDNA studies is a misnomer as there were likely many other females alive when the most recent common ancestor lived, but other females simply did not pass on their mtDNA to present populations thus far evaluated.

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<sup>1</sup> It is theoretically possible for a descendent species to arise in one geographical area and displace the original (parent) species while the original species continues to exist in other geographical areas. Then, if the two species are apart long enough for them to become differently adapted and fill a different ecological niche, it is possible for them to rejoin in the same geographical area and coexist. As will be seen, however, many evolutionists view the discovery of hominid fossils in the same area over long periods of time sufficient evidence to reject long-held, assumed evolutionary relationships.

Evolutionary scientists are able to infer a great deal about human evolution by applying Darwinian principles to limited fossil evidence. For example, evolutionists believe that tooth size reduction during the course of human evolution occurred only after hominids had become *bipedal* (walking on two feet) tool-makers. The reasoning is that a biped would have been able to use tools, which would mean that large teeth were no longer required as weapons or to perform certain work such as skinning animals. Tool use would allow individuals with smaller teeth to survive and replace earlier lineages with large teeth, but who lacked advanced hands to make and use tools or weapons. Such reasoning has led many evolutionists to view small teeth as proof of bipedalism, tool-making capability, large brains, and intelligence. Paleoanthropologist Owen Lovejoy even suggests that small tooth size in hominids indicates monogamy (having only one mate), as males with small teeth could not compete effectively with other males for the control of multiple females.<sup>6</sup>

The major hominid finds are now introduced, *as commonly described by evolutionists*.

## **The *Homo* Genus**

In *The Origin of Species*, Darwin looked forward to the development of new fields of study that would conduct “important researches” with the hope that through these efforts “light will be thrown on the origin of man and his history.”<sup>7</sup> The first fossils to be viewed in a human evolutionary light actually had been found a few years before (1856) in Germany’s Neanderthal (often Neandertal) Valley; hence the name Neanderthal Man (or more formerly, using the genus and species name: *Homo neanderthalensis*, sometimes *Homo sapiens neanderthalensis*). The pattern observed in these and subsequent remains, was that the Neanderthals had larger bodies and cranial capacity compared to most *H. sapiens*, and the morphology of their bones differed in some aspects from modern humans. Paleontologist Marcellin Boule was eventually appointed to reconstruct the possible appearance of Neanderthal Man. Boule published his primary findings between 1911 and 1913 and, reflecting his very primitive reconstruction, he reported that:

...the backward position of the *foramen magnum* [the opening in the base of the skull through which the spinal cord enters]...must have caused the body to incline forward...and the distinctly simian arrangement of the ...vertebrae...[testifies] to this fact...the total extension of the knee could not have been normal.<sup>8</sup>

Neanderthal fossils date to at least 130,000 years ago (ya) and are contemporary with the fossils of modern man, *H. sapiens*, who is dated to about 200,000 ya (see Figure A-1).<sup>9</sup> Neanderthals disappeared from the fossil record less than 30,000 ya. In recent studies, it has been estimated that the Neanderthals and the direct ancestors of present day humans last exchanged genes somewhere between 270,000 to 440,000 ya, though this estimate rests on many assumptions including the date of the last common ancestor between humans and chimpanzees (the discussion of the molecular clock below).<sup>10</sup>

What continues to attract much attention are the DNA sequences that have been recovered from a few Neanderthal bones, and this data suggests that Neanderthal DNA was at least 99.5 percent similar to modern humans (by comparison, modern humans are approximately 99.9 percent DNA identical to one another).<sup>11</sup> This raises the question of whether *H. sapiens* and the Neanderthals could have interbred and exchanged genetic information. Opinions in the scientific literature have come down on both sides of this question, with most evolutionists of the opinion before 2010 that the two did not so mingle. Findings in 2010 have now changed the overall view on this issue, as subsequently discussed.

The most important transitional form in the *Homo* genus is *H. erectus*. Until the mid-1990s, *H. erectus* was said to have lived from about 1.5 million years ago (mya) to about 200,000 ya or slightly more recent. Studies since that time, however, have expanded the duration of *H. erectus* from approximately 2.0 mya to less than 100,000 ya as shown in Figure A-1.

The story of *H. erectus* began with the discovery of Java Man by Eugène Dubois, a Dutch anatomist and doctor who left his post at the University of Amsterdam in 1887 to search for man's evolutionary ancestors in modern day Indonesia. In 1891-92, his team found a well-preserved, primitive looking skull cap, followed by a left femur (thigh bone). The thigh bone was very modern looking and not structured for climbing trees according to Dubois. Yet the skullcap was primitive looking and Dubois felt that when viewing the primitive skull cap and the modern thigh bone together, the designation of a new human ancestor was warranted. He named it *Pithecanthropus erectus* meaning "erect ape" but the category name was later changed to *H. erectus*. So pivotal was Dubois' find that *National Geographic* declared his work as "one of the greatest success stories in the history of science."<sup>12</sup>

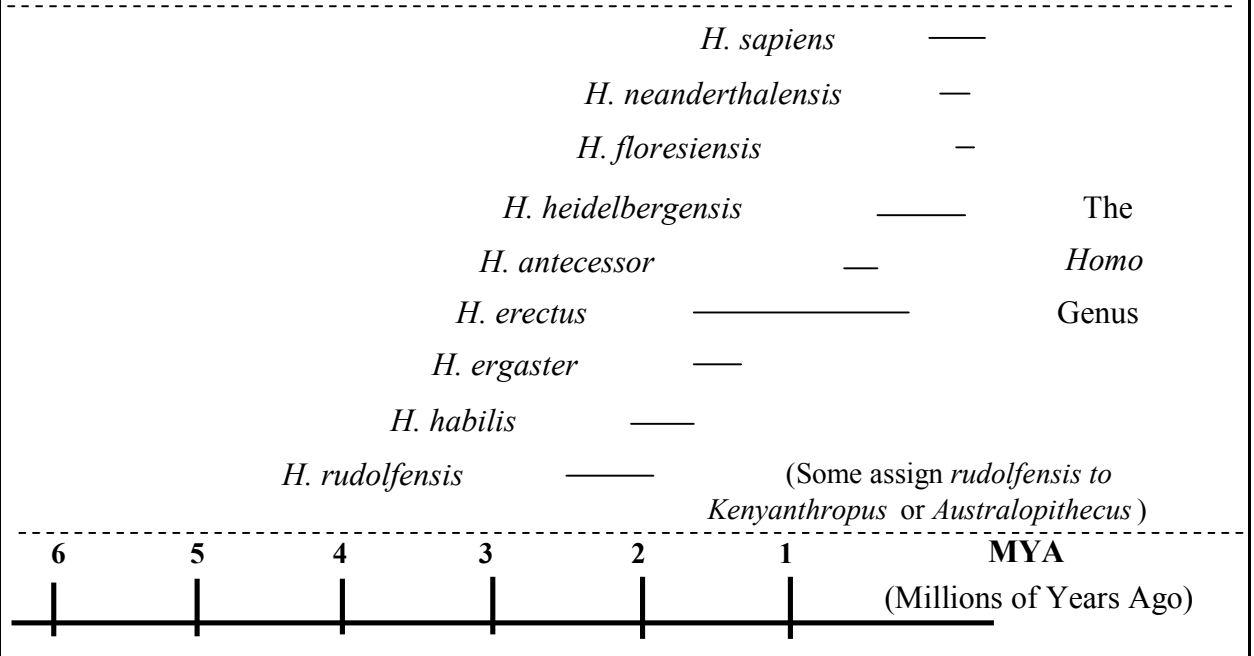
In the years following the Java man discovery, *H. erectus* fossils were found in modern day China (including Peking Man), Australia, Africa, Europe, and other locations. *H. erectus* is considered a transitional form and the immediate ancestor of *H. sapiens* due to its age, its slightly smaller cranial capacity versus *H. sapiens* (1,017 cubic centimeters (cc) on average, versus 1350 cc for *H. sapiens*), and due to differences in morphology.

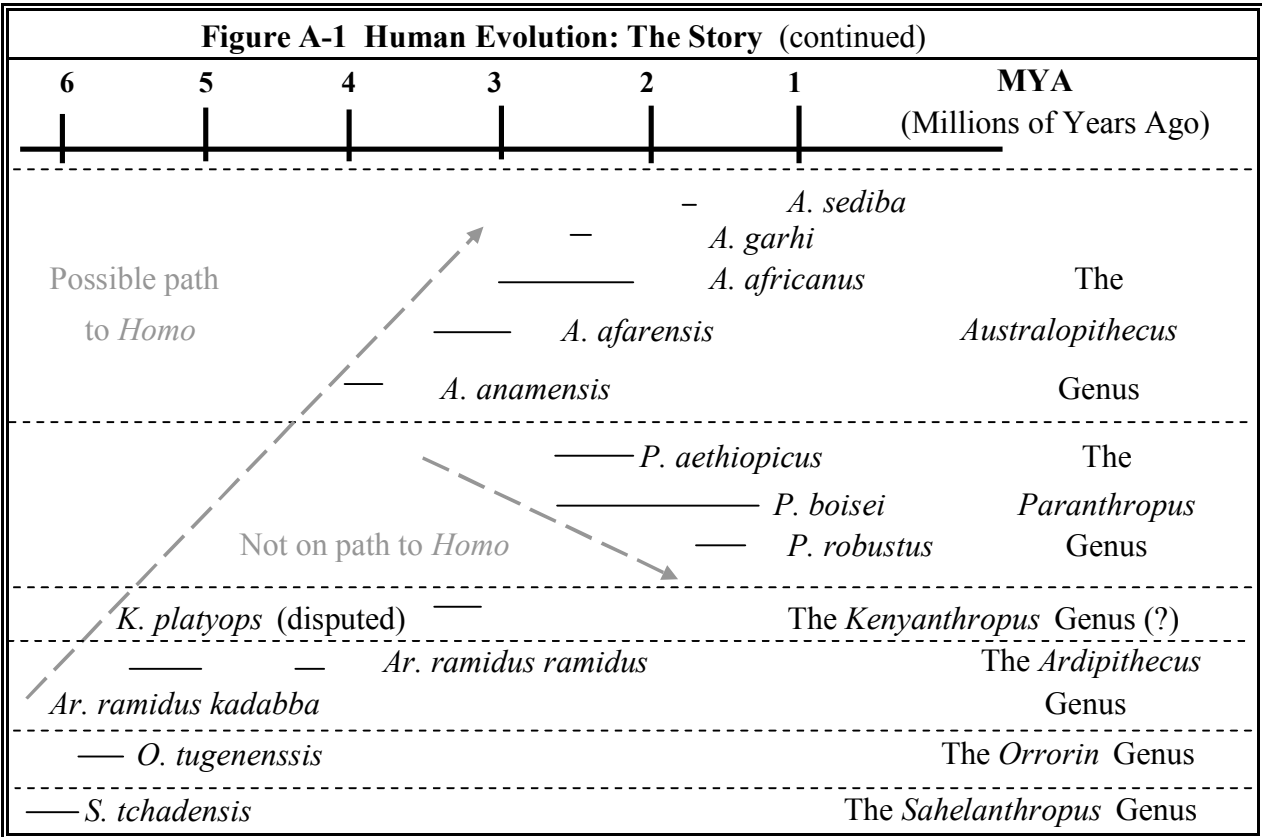
Other claimed transitional forms in the *Homo* genus resemble *H. erectus* but have been given separate species names. The list includes *H. ergaster*, a group of fossils found in east Africa and said to have existed about 1.5 mya; *H. heidelbergensis*, dating to about 600,000 ya; and *H. antecessor*, dating from about 200,000 ya to about 800,000 ya. The other transitional form that has a recent date is *H. floresiensis*. Dubbed "the hobbit," this find occurred in Indonesia and has puzzled the scientific community because the cranial capacity was only 380 cc. Some evolutionists speculate that it was a late off-shoot of *H. erectus*, but others believe that *H. floresiensis* suffered from a medical condition leading to cranial deformation and its small size. The specimens date to approximately 12,000 ya.

Other members of the *Homo* genus listed in Figure A-1 are *H. habilis* and *H. rudolfensis*. These transitional forms are very important because they represent the earliest species in the *Homo* genus and date to more than 2 mya. Sometimes the *H. habilis* and *H. rudolfensis* fossils are simply referred to as "early *Homo*."

The discovery leading to the announcement of *H. habilis* was a mandible (jaw bone) with embedded teeth, found in 1960 at Olduvai Gorge, Tanzania by Louis Leakey. Leakey subsequently announced in *Nature* that the fossils were a "distinct type of early hominid."<sup>13</sup> The early *H. habilis* finds were very fragmentary and did not allow a good understanding of the species, as it was not until 1986 that findings of *H. habilis* cranial and post-cranial fossils in clear association were described by a Donald Johanson team. These later finds revealed that *H. habilis* was small, standing about 3.5 feet tall and, as expected, the morphology was more primitive than seen in *H. erectus*.<sup>14</sup>

**Figure A-1 Human Evolution: The Story** (page 1 of 2)  
 (Solid lines indicate commonly-claimed spans of species' existence)





The origin of the *H. rudolfensis* designation is linked to Richard Leakey, son of Louis. In 1972, Richard made new discoveries at Lake Rudolf in northern Kenya. The finds included the famous skulls designated KNM-ER 1470 and KNM-ER 1590, the KNM-ER 1481 leg bones, and the KNM-ER 1472 femur. The finds from Lake Rudolf were generally larger than the *H. habilis* fossils, but certain characteristics have caused some scientists to designate the fossils as australopithecine (either as *A. rudolfensis* or as the east African version of *A. africanus*).

### ***Australopithecines***

Evolutionists widely believe that it was the *Australopithecus* genus that gave rise to *Homo* about 2.3 to 2.5 mya. The story of the australopithecines began in 1924 when anatomist Raymond A. Dart came into possession of a small juvenile skull found in a cave near Taung, South Africa. The “Taung Child” as the find became known, was believed by Dart to be an ape, hence the name *Australopithecus*, meaning “southern ape.” Later, however, he announced that his discovery, *Australopithecus africanus*, was man’s evolutionary ancestor. The species is estimated to have had a small cranial capacity of 440 cc and was initially estimated to have lived between 2 and 3 mya.

In the mid-1970s, Donald Johanson extended man’s evolutionary history deeper in time with the announcement of “Lucy” (more formally, A.L. 288-1). The find was classified as an australopithecine and given the species name *afarensis*. As seen in Figure A-1, *A. afarensis* was believed to have lived from approximately 3 to 3.5 mya. This creature seemed to fill the expectations for a transitional form of this period as it stood about 3.5 feet tall and had a cranial capacity of less than 400 cc. More intriguing still was the claim of those associated with the find that, based on Lucy’s pelvis, *A. afarensis* was bipedal. Owen Lovejoy even suggested that “Lucy’s hips and the muscular arrangement of her pelvis would have made it as hard for her to climb trees as it is for modern humans.”<sup>15</sup> In 1979, a team led by Mary Leakey announced the discovery of multiple tracks made by bipeds in volcanic ash that dated to about 3.6 mya.<sup>16</sup> According to Lovejoy, these tracks ended the speculation about the bipedal status of *A. afarensis*.

Beginning in the 1990s, expeditions produced additional finds and led to the creation of new australopithecine species. This included *A. garhi*, which dates to approximately 2.5 mya, and *A. anamensis*, which dates to approximately 4 mya.

There are also other genera (plural of genus) that precede the australopithecines. In 2002, one such find was announced and dated to 6 mya. This was *Orrorin tugenensis*, which was discovered in Kenya. At approximately the same time, *Sahelanthropus tachadensis* was announced. Dating to more than 6 mya, this find in Chad continues to be viewed by many as the oldest hominid and the ancestor of the australopithecines and *Homo*.

In October, 2009, *Science* magazine featured multiple articles about a hominid that had first been identified fifteen years previously, but by little more than a few fossil teeth and part of a jaw.<sup>17</sup> The announcement featured the fossil remains of “Ardi” which, along with other *Ardipithecus ramidus* fossils, helped to fill in a previous gap in human evolution. *Ar. ramidus* lived approximately 4.4 mya, had a cranial capacity of 300-350 cc, stood about 4 feet tall, and weighed about 50 kg. Adding to the excitement of this transitional form was the conclusion by the team led by Tim White that *Ar. Ramidus*—while retaining an opposable toe suitable for grasping branches, and while having long arms and flexible wrists that could support its weight while in the trees—had a pelvis suitable for bipedal walking. Thus, a line of evolutionary descent from *S. tachadensis*, to *Ar. ramidus*, to *A. afarensis*, to *A. africanus*, to early *Homo*, to *H. erectus*, to *H. sapiens* is now seen as a plausible evolutionary path. So important was the *Ar. ramidus* evidence that it was named by *Science* magazine as the most significant contribution to science in 2009.



Considering the fossil evidence as a whole, the evolutionary history of mankind, shown in Figure A-1, has come together in a remarkable manner over the past few decades. Science has provided us with unmistakable evidence of the transition from small, ape-like creatures who dwelt in trees, to small bipeds who lacked large brains but who had made the transition to upright walking, to early *Homo* and finally to *H. erectus*, who had finally achieved modern post-cranial dimensions, though the cranial capacity was still below that of modern humans. Given this overwhelming evidence there is little wonder that the National Academy of Sciences declared in *Teaching About Evolution*: “It is no longer possible to sustain scientifically the view that...the human species was not produced by the same evolutionary mechanisms that apply to the rest of the living world.”<sup>18</sup> So convincing is the evidence, concludes the evolutionist, that anyone objecting to the fact of human evolution would surely be in denial of the scientific evidence for religious reasons and due to an overly literal interpretation of the Bible. Those seeking the reconciliation of faith and science have no option but to accept the fact of human evolution.

### **Human Evolution: The Legend**

*“In questions of science the authority of a thousand is not worth the humble reasoning of a single individual” – Galileo*

While the story of evolution may sound plausible on the surface, those who read the remainder of this appendix will see that *the claims for human evolution are highly suspect and the scientific evidence is arguably more consistent with the Special Creation of mankind*. In order to arrive at this conclusion, some helpful rules and cautions are first introduced. In other words, to find the way through the complicated maze of hominid transitional forms in Figure A-1, it is beneficial to have something akin to a map key or “legend” for human evolution.

To help explain the logic of these rules, suppose that you, the reader, are a scientist researching human evolution and you embark on a fossil finding trip to Africa. Your excavation uncovers a fossilized bone in relatively recent strata, dated at less than 200,000 ya. You evaluate the fossil by comparing it to the analogous part of modern humans and of other primates, and conclude that it is indistinguishable from modern humans. Your findings are confirmed by others and so you confidently classify it as a *H. sapiens* fossil.

Now, however, suppose the *same* fossil was found in strata dated 3 mya. How would you classify the fossil? Specifically, would there be any valid reason to classify the fossil as anything other than *H. sapiens*? You reason that assignment to any classification other than as *H. sapiens* would be to depart from the facts at hand, perhaps due to a preconceived belief that evolution is true and that *H. sapiens* did not live 3 mya. This reasoning produces the following rule:

**Rule 1. A fossil that is morphologically indistinguishable from *H. sapiens*, or that most closely aligns with *H. sapiens* (also an artifact that is best attributed to *H. sapiens*) should be assigned to *H. sapiens* regardless of the estimated age of the fossil or artifact.**

Now suppose that your dig produces many australopithecine fossils at lower strata levels, dated at more than 2 mya. This is exciting because you theorize that perhaps you have found a unique site where the evolutionary history of man over millions of years has been preserved. But, careful not to jump to conclusions, you also

acknowledge that the australopithecine fossils could be from an extinct primate having nothing whatsoever to do with man's evolutionary history. That is, the australopithecines could have gone extinct without evolving into anything, or they could have evolved into a non-human primate.

You request tests to determine if the australopithecine fossils could have given rise to *H. sapiens* with relatively limited functional and, by implication, genetic modifications. The tests evaluate the form and function of the australopithecine fossils, and compare the fossils with the analogous structures in humans and in other living primates. The results indicate that the australopithecine fossils had a form and function much different than the analogous structures in *H. sapiens*. Instead, to the degree the finds resemble any living primate, they most resemble the orangutan. The question becomes whether it is legitimate to claim that the australopithecines are the evolutionary ancestors of man or whether, at most, an australopithecine to orangutan sequence is suggested. You concede that, at most, the australopithecines could be an ancestor of the orangutan, not *H. sapiens*. You write the following rule:

**Rule 2. If there are two existing groups, *H. sapiens* and the orangutan or another primate, and a third fossil group that is now extinct called the australopithecines, it is inappropriate to assume that the australopithecines gave rise to or are most closely related to *H. sapiens* if, in fact, detailed studies conclude that the australopithecines are more closely related to the orangutan, or that the australopithecines were uniquely different from both groups in fundamental ways that eliminate it as an evolutionary ancestor of *H. sapiens*.**

Continuing the example, suppose you move to a new site and, at a strata level dating to about 2 mya, you find some fossils that are very modern in morphology and appear to belong to *H. sapiens* but also, nearby and in the same or neighboring strata, you find what appear to be australopithecine fossils. That night at camp, it occurs to you that if both groups of fossils were combined and claimed to be part of the same species, you could create a transitional form out of thin air, and the new species would have a mixture or "mosaic" of modern (*H. sapiens*) and primitive (australopithecine) features. Realizing that this is not appropriate you write the following rule:

**Rule 3. It is inappropriate to group *Homo* fossils with australopithecine fossils, and to then claim that the result is a new species displaying a "mosaic" of ancient and modern features, or to average the measurements of such fossils and assert that these fossils are transitional between the australopithecines and *Homo*.**

Finally, you dig at a new location and find *Homo* fossils that generally have a modern morphology, though they are somewhat variable in size and shape. Since the smaller fossils tend to appear at lower strata levels, you wonder if the variation is significant enough to warrant a separate species classification. But how do you decide? It occurs to you to compare the fossils against the *range of normal variation* found today among *H. sapiens*, rather than comparing the fossils against *average* species measurements. When this is done, the fossils fall within the range of normal variation seen today among *H. sapiens*, where genetics, diet, and other non-evolutionary factors account for the variation. You conclude that there is no reason to doubt that such variation also occurred in the past. You decide not to announce a new species and write the following rule:

**Rule 4. New species designations should be avoided unless fossils fall outside the limits of normal variation for existing or established species.**

In addition to these four rules, it is helpful to establish certain caution signs that could indicate a departure from the underlying assumptions about human evolution.

**Caution 1.** Recall that the most basic underlying assumption of paleoanthropology is that genetic relationships and evolutionary histories (phylogenies) can reasonably be inferred by evaluating fossils, which most commonly consist of cranial-dental evidence. Should studies suggest that fossil remains are not, in fact, reliable indicators of genetic relationships, evolutionary sequences developed from fossil evidence would suddenly be in doubt.

**Caution 2.** Recall evolutionists' claim that the fossil evidence indicates that the last common ancestor for chimpanzees and humans lived 5 to 7 mya, and that this has been independently confirmed through the concept of the molecular clock, previously discussed. In reality, should these methods not be independent, or should the two methods actually suggest a much different date for the last common ancestor, then the so-called consensus would be an illusion.

Also, if the results of mitochondrial DNA and Y-chromosome studies of modern human populations diverge significantly from the assumed age of *H. sapiens* based on the fossil evidence, questions would arise about the interpretation of the hominid fossil record and the time scale assumed to be reflected in the geologic record.

**Caution 3.** Artist renderings of human evolution convey the notion of a steady progression from a small, ape-like creature to modern man. If, in fact, the real fossil evidence demonstrates repeated and significant evolutionary "U-turns," and "abrupt transitions," the story of human evolution would be in doubt. An example of an evolutionary "U-turn" would be a return to walking on hands or knuckles after bipedal locomotion supposedly evolved; the presence of an opposable toe on a species whose supposed evolutionary ancestor had already lost an opposable toe, or a significant reduction in cranial capacity or body mass (weight) compared to an evolutionary predecessor. An "abrupt transition" would occur, for example, if a 3.5 foot, 35 kG ancestor appears at 2 mya in the fossil record, followed, at 1.95 mya, by a supposed descendent species with a mass of 50 kG and a height of more than five feet. If the supposed evolutionary history of humans is full of U-turns and abrupt transitions, then artist renderings convey a false picture and the best interpretation of the fossils may be to view them as belonging to primates that were not closely related.

**Caution 4.** Evolution is based on the fundamental Darwinian premise that species filling the same ecological niche compete for scarce resources, and those not able to compete and reproduce in sufficient numbers go extinct. Because of such competition, one would not expect to find a hominid species at the same location and time with its supposed evolutionary predecessor for extended periods, and certainly not co-existing there for hundreds of thousands of years. Such a "contemporary status" would indicate that 1) perhaps some of the species claimed to be on the evolutionary path to modern man were not, in fact, closely-related and did not compete in the same ecological niche; or 2) perhaps some of the separate species designations are not justified (perhaps evolutionists have been "splitting" fossils into separate species when they should have been "lumping" fossils into only a few classifications or a single classification).

**Caution 5.** Evolutionists assume that the last common ancestor of chimpanzees and humans closely resembled the modern chimpanzee. With this underlying assumption, fossils are assigned using what can be termed the "bookend" approach. That is, fossil teeth and other finds are compared with the teeth and other analogous parts of the modern chimpanzee and modern human, which are the two "bookends." If the fossil has a morphology or size between the bookends, it is likely to be designated as an intermediate hominid. Yet, if chimpanzees and humans did not share a common ancestor or if new evidence suggests that the common ancestor

did not closely resemble the chimpanzee, then the bookend approach is questionable and many evolutionary claims would fall apart.

**Caution 6.** Finally, it will be useful to keep in mind the common standards for assigning fossils to the *Homo* genus: 1) evidence of the use of stone tools; 2) a cranial capacity of at least 600 cc; 3) evidence such as worn grooves on the cranial structure indicating that the specimen possessed muscles enabling speech; or 4) a human-like morphology of the teeth, skull, knee, hands or feet. If evolutionists disregard these general rules, then it may involve a case of special pleading to preserve a favored but illogical evolutionary sequence.

## Human Evolution: The Myth

*Apply your heart to instruction, and your ears to words of knowledge. – Proverbs 23:12*

The lack of support for human evolution will be explained in this section, beginning with an explanation of three flawed assumptions plaguing paleoanthropology.

**1. Fossil evidence is not a good indicator of genetic relationships.** In April of 2000, the *Proceedings of the National Academy of Sciences* published a paper by Mark Collard and Bernard Wood, both extensively published anthropologists and evolutionists. The article acknowledged that the evolutionary histories (phylogenies) and relationships among hominid fossils is anything but clear and that cladistic analysis<sup>2</sup> of fossils “have so far yielded conflicting and weakly supported hypothesis of relationships.” Amazingly, the article explained that only recently have evolutionists considered the possibility that “the type of qualitative and quantitative craniodental characters normally used to reconstruct the phylogenetic relationships of hominin species and genera are not reliable for this purpose...” They then compared evolutionary histories (phylogenies) developed from cladistic analysis with histories constructed from molecular clock studies. They concluded:

We found that the phylogenetic hypotheses based on the craniodental data were incompatible with the molecular phylogenies for the groups. Given the robustness of the molecular phylogenies, these results indicate that little confidence can be placed in phylogenies generated solely from higher primate craniodental evidence. The corollary of this is that existing phylogenetic hypotheses about human evolution are unlikely to be reliable. Accordingly, new approaches are required to address the problem of hominin phylogeny.<sup>19</sup>

They further explained:

...craniodental data can return impressive levels of statistical support (e.g., 97%) for patterns of phylogenetic relationship that are most likely incorrect. In other words, cladistic analyses of higher

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<sup>2</sup> Cladistics is a “statistical method for analyzing correlations between traits across species.” Two species sharing nearly all traits will be judged more closely related than species not sharing as many traits, even though fossil evidence establishing this relationship may never be found. The method uses the principle of parsimony, in which an evolutionary relationship is assumed to be closest between groups requiring the fewest evolutionary changes from an assumed common ancestor. As with the molecular clock method, the approach assumes evolution is true and, therefore, cannot be a proof of evolution. See *Repairing the Breach* for a more thorough discussion.

primate craniodental morphology may yield not only “false-positive” results, but false-positive results that pass, by a substantial margin the statistical tests favored by many researchers.<sup>20</sup>

These conclusions are staggering and mean that, counter to the most fundamental underlying assumption in paleoanthropology, craniodental fossils may not be a valid indicator of genetic relationships.

**2. Using fossil teeth to establish evolutionary sequences is especially problematic.** While teeth are very durable and constitute, far and away, the most common fossil finds, relying on fossil teeth to establish evolutionary histories is especially problematic. An article in *The Journal of Human Evolution* compared the morphology of molars among six primate species and found that studies claiming an evolutionary relationship based on molar morphology “were in no way congruent with what is known of hominoid biomolecular affinities.” In other words, the fossils do not agree with the molecular studies. The author reported that studies of fossils erroneously assume:

...that features shared by humans and orangutans (low cusps, shallow intercuspal notches, etc.) are indicative of a recent common ancestry, when in fact these are probably only signs of similar diet. In short, although study of molar morphology may yield substantial insights into diets of fossil hominoid primates, there may be severe limitations to their suitability for phylogenetic inference.<sup>21</sup>

Another revealing article in *Scientific American* explained that problems with fossil teeth also arise:

...because the taxonomic position of any new fossil is determined on the basis of exquisitely detailed morphological studies of isolated specimens...[usually on] fossil jaws and teeth...most likely to be preserved. What this procedure tends to ignore is that among such living hominoids as chimpanzees the jaws and teeth exhibit a high degree of morphological variability. There is no reason to believe the same was not true of hominoids in Miocene and Pliocene times.<sup>22</sup>

Further, while species assignments are made based on characteristics such as the number, position, and size of cusps on a tooth, and position of crests on the top of teeth, a study published in *Nature* in November 2004 evaluated the influence of gene expression during tooth development. The study found that “with increasing expression level of this one gene [ectodysplasin], the number of cusps increases, cusp shapes and positions change, longitudinal crests form, and number of teeth increases.” These differences “can be traced to a small difference in the formation of an early signalling [*sic*] centre at the onset of tooth crown formation.” The study concluded that variation caused by small differences in expression of this single gene “may, if not taken into account obscure phylogenetic history.”<sup>23</sup>

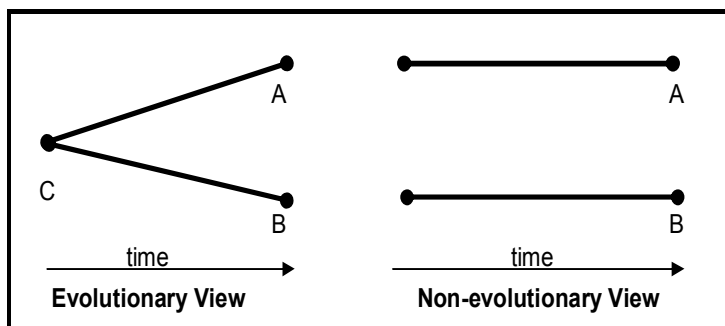
Another problem is that when estimating the age of a fossil specimen at death, the estimate is closely linked to the size and emergence of teeth, and extrapolations estimating the size that the specimen would have reached at maturity are then made. However, studies have shown extreme variation in the age of the emergence of teeth among primates, with the variation dependent on genetic and environmental factors. A July 2004 study in the *Proceedings of the National Academy of Sciences* found that “emergence of the permanent teeth in wild chimpanzees is consistently later than 90% of the captive individuals. In many cases, emergence times are completely outside the known range recorded for captive chimpanzees.”<sup>24</sup> Thus, the assumed age of fossil specimens at death, and the resulting estimate of body size at adulthood, may be in substantial error if variations in the timing of tooth emergence are not allowed for or are not known.

Finally, fossil teeth have led to many errors because of the “bookend approach” wherein the teeth of *H. sapiens* are established as the modern bookend, the characteristics of the modern chimpanzee (a proxy for the characteristics of the presumed common ancestor between chimps and humans) are established as the primitive bookend, and then a fossil tooth having a size and morphology between the bookends is classified as from a transitional hominid. For example, *Ramapithecus*, an extinct ape dating from 8 to 15 mya, had small teeth that, for a decade, caused evolutionists to conclude that it was closely related to man. Further, as David Pilbeam explains: “So firmly were we committed to the idea that large canines were replaced by tools or weapons and that bipedalism was promoted by and necessary for tool use, that we took the small canines of *Ramapithecus* to mean that the creature must have been an upright tool user.”<sup>25</sup> By the late 1970s, however, evolutionists conceded that the *Ramapithecus* fossils “probably represent the ancestry of the orangutan, and have no particular affinities to hominids.”<sup>26</sup>

**3. Molecular clock studies are flawed due to an underlying assumption that evolution is true; due to an assumed regular mutation rate that does not exist; and because the studies are usually dependent upon dates from the fossil evidence. Even so, many molecular studies do not agree with recent fossil evidence.** The molecular clock approach fundamentally *assumes* that evolution is true and dismisses the possibility that genetic differences between humans and chimpanzee could be the result of Creation, not evolution. Since the background assumption of the model is that evolution is true, those who claim that the process somehow proves that evolution occurred are in danger of committing the logical fallacy of begging the question, or assuming what one then claims to have proven.

To illustrate using Figure A-2, at the present, the current genetic makeup of humans, represented by point A, can be observed as can the current genetic makeup of chimpanzees, represented by point B. The vertical distance between the two points represents their genetic differences. If one assumes that evolution is true, it is then possible to apply an assumed mutation rate to estimate the date at which they shared their last common ancestor, point C. However, if the genetic differences were due to Creation and not evolution, then the molecular clock approach is not meaningful and the genomes never diverged from a common ancestor. This non-evolutionary view is shown on the right side of the figure.

*If* human evolution occurred, the molecular clock could potentially yield insights as to when the common ancestor between chimpanzees and humans lived, *provided* that mutations, which presumably produce the genetic divergence between two species, accumulated at a constant and



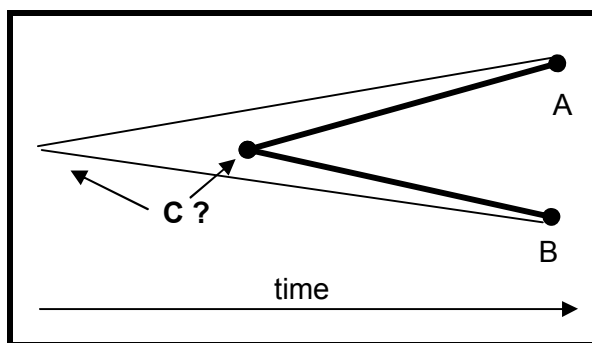
**Figure A-2**

known rate through time. As explained in a June 2006 *Nature* article, “The genetic divergence between two species (the proportion of nucleotides differing between representative individuals of the two species) can be

converted into a divergence time in terms of millions of years, provided that differences between genomes have accumulated at a constant rate as a result of new mutations.”<sup>27</sup>

The problem, however, is that a constant mutation rate does not exist. As stated in a March 2003 issue of *Nature*: “The mutation rate speeds up, slows down and varies among genes...” and again in a July 2005 *Nature* article, “a single mutation rate ( $\mu$ ) does not really exist. Even for nucleotides there are many ‘mutation rates’, at least one between each pair of nucleotides.”<sup>28</sup> If a single mutation rate does not exist or if it is not known then, even if evolution occurred, any results about divergence dates is very speculative.

While relaxed molecular clock models that do not rely on uniform mutation rate assumptions have been developed, these also must speculate about mutation rates in the distant past. Thus, as illustrated in Figure A-3, even if evolution occurred, the lack of knowledge about the rate or rates of mutation can result in highly variable conclusions about the date of a common ancestor between groups, represented by the convergence of the lines A and B at point C in the distant past.



**Figure A-3**

Further discrediting the notion of a constant mutation rate is an October 2006 article in *Science* that reported “approximately 22 percent of substitutional changes at the DNA level can be attributed to punctuational evolution,” and that “Punctuational changes cause departures from a clock-like tempo of evolution, suggesting that they should be accounted for in deriving dates from phylogenies.”<sup>29</sup> The reference to “punctuational” changes at the DNA level refers to large differences in DNA from one generation to the next that could come, for example, from a segment deletion or insertion into the genome (an indel). Again, if a punctuational pattern has occurred, then it further invalidates molecular clock studies that assume a constant mutation rate.

How then, is the clock-like, single mutation rate between species estimated if it does not exist? Mostly commonly, it is estimated from the fossil record. As explained in a *Science* article, “Researchers must calibrate their molecular clocks—that is, calculate how many nucleotide changes occur per million years—by using a date from the fossil record. Most use the split between apes and monkeys...”<sup>30</sup> In other words, by comparing the differences in DNA between two modern groups, such as apes and monkeys, and then dividing the genetic differences by how many millions of years ago the two groups are *presumed* to have shared a common ancestor, *based on the fossil record*, an average mutation rate is derived. This rate is then applied to determine when any other two species shared a common ancestor. However, the process of calibrating the molecular clock by using fossil dates illustrates that the method is highly reliant on the fossil record, and does not provide a truly independent verification of divergence. Further, if the catastrophist or neo-catastrophist view of the fossil record is correct (see Appendix C), a uniformitarian read of the fossil record and the resulting confidence placed in the assumed regular deposition of strata containing the fossil record is misplaced. The non-uniform disposition of

strata would invalidate the fossil record as a reliable indicator of when two species shared a common ancestor even if evolution is true.

The scientific literature acknowledges that the calibration process is vulnerable to gross error. This is not surprising as there is no sound evidence that any two groups, including apes and monkeys, actually shared a common ancestor, which obviously makes it difficult to establish when the presumed ancestor lived. A 2003 *Nature* article explained:

The problem is that the variance of the mutation process is modest compared with the uncertainty introduced by calibration. The date of the common ancestor of two species is estimated from a fossil, or from a geological event...The error of the estimate is high, so correlations are difficult, if not impossible to demonstrate rigorously.<sup>31</sup>

To illustrate the problem with calibration, depending on whether one chooses to calculate the mutation rate according to the presumed split between apes and monkeys or between the presumed split between whales and even-toed ungulates, the scientific literature reveals that the resulting divergence date between chimpanzees and humans ranges from as low as 3 mya to as high as 13.5 mya, hardly a range that exudes confidence in the process.<sup>32</sup>

Again, the periodical *Evolution* issued a 1999 report examining the age of the major animal phyla and included a discussion of several molecular studies. A 1996 study authored by Gregory A. Wray et al. suggested that animal phyla may have begun diverging approximately 1.0 to 1.2 billion years ago.<sup>33</sup> And yet, the very same data upon which that study was based were later evaluated by Francisco José Ayala et al., who in 1998 estimated the divergence of major animal phyla occurred between 600 and 670 million years ago<sup>34</sup>—a difference of as much as 600 million years.

Such widely ranging results and problematic assumptions are not mentioned in material aimed at students or the general public, giving the appearance of a finely tuned process. For example, a March 2007 *Newsweek* article that stated:

Human DNA and chimp DNA differ by no more than 1.2 percent, and DNA changes at a fairly regular rate. That lets scientists use this rate to calibrate a “molecular clock” whose tick-tocks measure how long ago a genetic change occurred. The fact that the DNA of living chimps and humans differ by about 35 million chemical “letters,” for instance, implies that the two lineages split 5 million to 6 million years ago.<sup>35</sup>

What the article did not reveal is that, two years prior, mapping of the chimpanzee and human genomes suggested that chimpanzee and human DNA differs on the order of 5 percent, or by about 150 million chemical letters (see Appendix B). Thus, if the *Newsweek* article is correct and there is a “regular rate” at which mutations occur, then a difference of 5 percent (or more than four times more than the 1.2 percent difference listed) would suggest a much older date of divergence than 5 or 6 mya, but this would differ from claims based on the fossil record. A solution would be to increase the assumed “regular rate” of mutation so that the results fit the fossil evidence, but this would only demonstrate that the fossil record and molecular clock methods are not independent, and the mutation rate can become a plug number inserted to make the fossil evidence and DNA evidence consistent.

Finally, although molecular clock calibration is highly dependent on the fossil record, for reasons subsequently explained, the announcement of “Ardi” in 2009 included some startling conclusions. Consistent



with the points made here, the team first acknowledged that “broad assumptions about both the regularity of molecular change and the reliability of calibration dates required to establish such rates have strong limitations.” The team then concluded that “there is now no a priori reason to presume that human-chimpanzee split times are especially recent, and the fossil evidence is now fully compatible with older chimpanzee-human divergence dates...” of 7 to 10 mya.<sup>36</sup> If other evolutionists adopt the same perspective, look for the “regular” mutation rate to change to fit the new divergence dates inferred from recent fossil finds.

**4. Recent human mitochondrial DNA and Y-chromosome studies disagree with the fossil evidence.** Mitochondrial DNA studies, which compare genetic differences between existing groups of human populations (rather than differences between chimpanzees and humans), initially assumed that mitochondrial DNA was only maternally inherited (from the mother and not the father). It is now thought that some of this material may come from the father, which would distort the conclusions of mtDNA studies that assumed differently.<sup>37</sup> In addition, the same issue about estimating mutation rates previously discussed is present in mtDNA and Y-chromosome studies, and an average mutation rate much higher than assumed in the initial studies now appears justified. An article in *Science* explained: “mitochondrial DNA appears to mutate much faster than expected, prompting new DNA forensics procedures and raising troubling questions about the dating of evolutionary events.”<sup>38</sup> It further explains that “evolutionists have assumed that the clock is constant, ticking off mutations every 6000 to 12,000 years or so. But if the clock ticks faster or at different rates at different times, some of the spectacular results... may be in question.”<sup>39</sup> The article concluded:

Evolutionists are most concerned about the effect of a faster mutation rate. For example, researchers have calculated that “mitochondrial Eve”—the woman whose mtDNA was ancestral to that in all living people—lived 100,000 to 200,000 years ago in Africa. Using the new clock, she would be a mere 6000 years old.<sup>40</sup>

Evolutionists commonly reject such recent dates for the most recent common ancestor, because such results could be interpreted to be consistent with Biblical Creation (this is why they are “concerned”). Even so, other studies agree with the possibility that the most recent common ancestor lived in the recent past. An article in *Nature* summarizing a study structured to overcome the weaknesses of earlier models including the “essential aspects of population substructure, such as the tendency of individuals to choose mates from the same social group, and the relative isolation of geographically separated groups” similarly concluded: “the most recent common ancestor for the world’s current population lived in the relatively recent past—perhaps within the last few thousand years.”<sup>41</sup>

In summary, there are significant underlying problems and uncertainties with fossil and genetic studies said to have demonstrated the “fact” of human evolution over millions of years. Consequently, one need not feel that they are departing the domain of reason if they believe that evidence for human evolution is lacking.

Still, when such underlying objections are raised, the tendency of many Christians is to recollect the artist drawings and other information in high school biology textbooks and in *National Geographic* and reason that, surely, not all of the hominid finds can be without merit. Therefore, leveraging the rules and cautions developed previously, the remainder of this appendix will evaluate the most well known hominids.

## ***Homo Sapiens, Another View***

Despite the claim that *H. sapiens* fossils date only to about 200,000 years ago, fossils described in the scientific literature as indistinguishable from *H. sapiens* or as best assigned to the species date to 4.4 mya. This ancient date suggests that “modern” man may have lived alongside (been a contemporary of) most of his supposed evolutionary ancestors and it leads to doubt as to whether the supposed hominids living later than 4.4 mya are legitimate human ancestors. Four key fossil or artifact finds that support the ancient date for *H. sapiens* are discussed below. This will be followed by a discussion of how evolutionists bypass issues involving an ancient date for *H. sapiens* and his contemporary status with other hominids.

**Supporting Evidence: Java Man.** The association of the Java Man skull cap and femur has been controversial from the start. Dubois maintained very poor records that were compiled only after the fossils were recovered, but best estimates are that the skull and femur were found 45 to 50 feet apart. This is troublesome because the Trinil site was, in essence, a bone pile created by the flow of the Solo River, and another expedition that visited the site in 1907 found hundreds of skeletal remains there. Dubois intentionally downplayed this feature to minimize doubt about the claimed association of the fossils. As one Dubois biographer noted, “There was only the briefest account of the locality...Dubois mentioned that ...the *Pithecanthropus* fossils were found amid ‘many remains of the species of Pleistocene mammals and reptiles...’”<sup>42</sup> If the skull cap and femur were not from the same individual, then there is reason to doubt that Java Man was really an “upright ape.” Perhaps this is why, after his return to Europe, Dubois soon refused access to the fossils.

Other significant issues arise. Most agree that the skull cap has a *H. erectus* morphology, but that the femur is indistinguishable from *H. sapiens*. The femur’s modern morphology was seen by those who first studied the fossil, including anatomist and anthropologist Émile Houzé, who questioned the classification of the femur as anything but *H. sapiens* simply because of the estimated age. In other words, Houzé invoked the logic of Rule 1, as he explained:

I refuse to let myself be influenced by considerations concerning the sediment or age...a bone which shows all the characteristics of a human [bone] must be considered as such. When after determining this, it is said that...the bone could have belonged to an intermediate species, one is abandoning the domain of facts without any plausible reason.<sup>43</sup>

More recent analyses agree that the femur is completely modern and, by implication, should be classified as *H. sapiens*. One study reported in 1973 that “there would seem to be no feature or combination of features that justify Dubois’ assertion of its distinctiveness from modern man...”<sup>44</sup> But if the Java Man femur is properly classified as *H. sapiens* and dates to 1.5 mya, not only does this conflict with the widely publicized date for *H. sapiens* of about 200,000 ya, but the classification creates a contemporary status issue between *H. erectus* and *H. sapiens*. In other words, how can one claim that *H. erectus* was an evolutionary ancestor and gradually evolved into *H. sapiens* 200,000 ya, when *H. sapiens* lived along side *H. erectus* 1.5 mya?

As it turns out, additional contemporary status issues are involved. Dubois also found two modern-looking fossil skulls, called Wadjak I and II, that he believed were the same age as the Java Man skull. As Sir Arthur Keith explained, when Dubois returned to Europe, “he also had in his possession then certain other fossil remains of man, of which, for reasons of his own, he said nothing, until May 1920—twenty-six years after his return from Java.”<sup>45</sup> Why the secrecy? Because Dubois understood that the modern-looking skulls created a contemporary

status issue and would cast doubt on the legitimacy of claim that Java Man was a transitional form. As Keith noted:

There can be no doubt that if, on his return in 1894, he had placed before the anthropologists of the time the ape-like skull from Trinil side by side with the great-brained skulls from Wadjak, both fossilized, both from the same region of Java, he would have given them a meal beyond the powers of their mental digestion.<sup>46</sup>

**Supporting Evidence: KP-271.** In 1965, Harvard's Bryan Patterson discovered a partial humerus (upper arm bone) fossil, now designated KP-271, and described it as "a well-preserved distal end of a left humerus."<sup>47</sup> The fossil dates to 4.4 mya. Following comparative tests with 40 human and 40 chimpanzee humeri, Patterson concluded that "In these diagnostic measurements [KP-271] is strikingly close to the means of the human sample."<sup>48</sup> In the words of William Howells, who studied the fossil with Patterson:

The humeral fragment from Kanapoi, with a date of about 4.4 million, could not be distinguished from *Homo sapiens* morphologically or by multivariate analysis by Patterson and myself in 1967 (or by much more analysis by others since then). We suggested that it might represent *Australopithecus* because at that time allocation to *Homo* seemed preposterous, although it would be the correct one without the time element."<sup>49</sup>

Other studies agreed. Henry M. McHenry concluded: "The results show that the Kanapoi specimen, which is 4 to 4.5 million years old, is indistinguishable from modern *Homo sapiens*..."<sup>50</sup> Charles Oxnard found that KP-271, "a fragment of arm bone perhaps four or more million years old...has already been shown to be very similar to that of modern man, and some of our demonstrations clearly support that contention."<sup>51</sup>

Why then, was KP-271 not classified as *Homo*, and possibly even *Homo sapiens*? Because the fossil fit no evolutionary sequences and was therefore classified as an australopithecine and continues to be so classified (see the discussion of *A. anamensis*).

**Supporting Evidence: The Laetoli Footprints.** In the March 22, 1979 issue of *Nature*, Mary Leakey reported what appeared to be three human footprint trails left in ash from an ancient eruption of the Sadiman volcano in Africa. A date of 3.6 to 3.8 mya is assigned to these artifacts. In the April 1979 issue of *National Geographic* Leakey stated: "we have found hominid footprints that are remarkably similar to those of modern man...the form of his foot was exactly the same as ours."<sup>52</sup> Further descriptions stated that "the longitudinal arch of the foot is well developed and resembles that of modern man, and the great toe is parallel to the other toes...it is immediately evident that the Pliocene hominids at Laetoli had achieved a fully upright, bipedal and free-striding gait..."<sup>53</sup> Tim White who was part of the team explained:

Make no mistake about it...They are like modern human foot prints...The external morphology is the same. There is a well-shaped modern heel with a strong arch and a good ball of the foot in front of it. The big toe is straight in line. It doesn't stick out to the side like an ape toe, or like the big toe in so many drawings you see of australopithecines in books.<sup>54</sup>

At Leakey's request, specialist Russell Tuttle conducted a detailed evaluation by comparing the footprints with those of Peruvian Indians (the Machiguengas) who live barefoot. His report in the *American Journal of*

*Physical Anthropology* stated: “In discernible features, the Laetoli G prints are indistinguishable from those of habitually barefoot *Homo sapiens*.”<sup>55</sup>

Evolutionists dismissed such findings, because they could not accept that *Homo*, possibly even *H. sapiens*, is so ancient. Instead, they attributed the trails to “Lucy” (*A. afarensis*). Objecting to this assignment, Tuttle responded:

...the trails at site G were portrayed as remarkably human. Yet they were presumed to have been created by *Australopithecus afarensis*...My problem in accepting this was that the Hadar beasts had apelike features (notably, down-curved toes) that I just didn't detect in the G prints...The proportions of Laetoli G-1 and G-3 prints are well within the range found among the Machiguenga...[both] exhibit strong heel, ball, and first toe impressions and a well-developed medial longitudinal arch, which is the hallmark of human feet... In sum, the 3.5-million-year-old footprint trails at Laetoli site G resemble those of habitually unshod modern humans. None of their features suggest that the Laetoli hominids were less capable bipeds than we are.<sup>56</sup>

Elsewhere, he commented on the: “remarkable humanness of Laetoli hominid feet in all detectable morphological features. Per contra, the toes of Hadar hominids, which are assigned to *Australopithecus afarensis*, are intermediate in length between those of humans and apes...and, they are curved, like those of apes.”<sup>57</sup>

Indeed, despite the efforts of the Johanson team and other evolutionists to portray *A. afarensis* as a biped that walked like humans do, or at least well enough to make the Laetoli footprints, many subsequent studies raised doubts. Other evolutionists have concluded that the species had “long and curved toes” that “imply a gait that is not identical to modern *H. sapiens*;<sup>58</sup> that the knee of *A. afarensis* “is compatible with a significant degree of arboreal [tree] locomotion;”<sup>59</sup> that the animal “slept, ate, and lived primarily in the trees;”<sup>60</sup> that Lucy's wrist exhibits characteristics “seen today only in the African apes. These features are thought to be associated with knuckle-walking;”<sup>61</sup> and that its inner ear chambers, which house “organs that help us maintain our balance while standing or moving” meant that *A. afarensis* “still tended to clamber in trees rather than amble across the savanna.”<sup>62</sup>

In sum, *A. afarensis* is a questionable candidate for the Laetoli footprints. The most logical assignment of the footprints is to *H. sapiens* or to another *Homo* species.

**Supporting Evidence: The Artifacts at Gona.** In 1997, it was reported that the Gona site in Ethiopia had produced some 3,000 sophisticated artifacts produced by “a species that was technologically adept...most scientists doubt that *Australopithecus* had the mental acuity or manual dexterity to create tools for cutting and chopping.” The artifacts were dated to at least 2.5 mya and show that at this early date, there was a species present that differed markedly in intelligence from its australopithecine contemporaries; *H. sapiens* is a viable candidate to have made the Gona artifacts.<sup>63</sup>

\* \* \*

How do evolutionists address the contemporary status issue involved with the above fossil finds (and in more fossils to follow)?

First, fossils older than 200,000 ya are not assigned to *H. sapiens* and, instead, are assigned to another *Homo* or australopithecine species, or they are classified as “species indeterminate.” The treatment of the Laetoli footprints is an example.

Second, additional studies can always be performed and, focusing on the most minute detail, can conclude that previous studies aligning a fossil with *H. sapiens* have been superseded. KP-271 is a case in point as recent

studies have concluded that KP-271 has australopithecine features and should be assigned to *A. anamensis* (see below). When setting forth a favorite evolutionary sequence or when challenging contemporary status issues, the helpful studies are cited and the opposing studies are generally ignored.

[Note: since any discussion of the fossil evidence must select from the many studies available, one could say that any such discussion is biased toward the author's views, the present study included. For the avoidance of doubt, the first part of this appendix (Human Evolution: The Story) presents the majority view held by evolutionists. While evolutionists admit that there is internal debate as to what sequence leading to modern man is correct, they will insist that human evolution is a fact nevertheless. The purpose of this section is to show that each transitional hominid has been questioned and rejected by respected evolutionists in the scientific literature, as has the entire approach of relying upon fossil evidence to tell us anything about possible human ancestors. Those not professionally or philosophically committed to evolution will see that, when respected evolutionists reject every claimed hominid, it is logical to also reject that human evolution has occurred.]

A third way that evolutionists explain away contemporary status issues involves what will hereafter be called "contemporary status just-so stories." One such story explains that it is not a problem for known *H. sapiens* fossils to predate the known fossils of their supposed ancestor since one can never eliminate the possibility that there are undiscovered australopithecine fossils that predate *H. sapiens*. This is a just-so story because, while true, it is a speculative argument based on a lack of evidence. One could also speculate that that additional *H. sapiens* fossils could be found that will date older than any forthcoming australopithecine fossil find.

Another contemporary status just-so story is often used when *H. sapiens* or other *Homo* fossils are found in the same strata and location as an australopithecine fossil. A just-so story is needed to explain why these two species would co-exist in the same geographical area and compete in the same ecological niche if one descended from the other and both were supposedly in a battle for survival. The just-so explanation is that perhaps *H. sapiens* evolved from an australopithecine population in a distant location and, after evolving enough to be in a different ecological niche, *H. sapiens* migrated to the area where the fossils were found side by side. The two would be contemporaries and the australopithecines would have given rise to *H. sapiens*, yet the two would not have been competing in the same ecological niche. Yet another contemporary status just-so story would claim that the australopithecine fossil was from a late surviving member of a species on its way to extinction because it could not compete with *H. sapiens*.

Again, such scenarios are a possibility, but when considered along with the general difficulties of the fossil record and the lack of a sufficient genetic mechanism, one soon realizes that such stories are extremely speculative and often fail to qualify as real science. This conclusion is justified because, as will be seen, an increasing number of evolutionists are rejecting just-so stories that try to downplay contemporary status issues between *H. erectus* and *H. sapiens*, as well as between *H. erectus* and *H. habilis*. If committed evolutionists reject such just-so stories, it is acceptable for others to reject them as well.

### ***H. Erectus, Another View***

*H. erectus* fails as a transitional form leading to *H. sapiens* for the following reasons: 1) fossils described as having a *H. erectus* morphology date as recent as 10,000 years ago; 2) *H. sapiens* and *H. erectus* fossils occur at the same site for extended periods of time, thereby creating a contemporary status problem; 3) *H. erectus*

generally fits within the range of normal variation seen in *H. sapiens* and fossils displaying features of both are relatively common; 4) the scientific literature explains that non-evolutionary factors are sufficient to explain the variation between *H. erectus* and *H. sapiens*, which is why; 5) even notable evolutionists have called for the “sinking” (eliminating the classification) of *H. erectus* and acknowledge that *H. sapiens* appears in the fossil record as early as 2 mya.

**Supporting Evidence:** A 1972 article in *Nature* reported of fossils found in Kow Swamp, Australia: “...human remains from Kow Swamp display archaic cranial features which suggest the survival of *Homo erectus* in Australia until as recently as 10,000 years ago.”<sup>64</sup> Similarly a re-dating of a number of Javan fossils announced in *Science* in December of 1996 concluded:

an interdisciplinary team of scientists suggests that one relative, *H. erectus*, was still alive in Java, Indonesia, as recently as 27,000 to 53,000 years ago—at least 250,000 years after it was thought to have gone extinct in Asia. If so, this remnant population of *H. erectus*, a species that first appeared in the fossil record about 2 million years ago, would have been alive when modern humans and Neandertals roamed the earth...<sup>65</sup>

How is this contemporary status issue resolved? Prominent anthropologist Milford Wolpoff is the leading evolutionist calling for the outright elimination of the *H. erectus* classification. Wolpoff explains:

We regard the species distinction between *Homo erectus* and *Homo sapiens* as being problematic. The issue we address stems from the difficulty in clearly distinguishing an actual boundary between *Homo erectus* and *Homo sapiens*...In our view, there are two alternatives. We should either admit that the *Homo erectus*/*Homo sapiens* boundary is arbitrary and use nonmorphological...criteria for determining it...or *Homo erectus* should be sunk...sinking *Homo erectus* would carry the advantages of explicitly recognizing the arbitrariness of the boundary, and eliminating the perceived need to “explain” how a “new “species (*Homo sapiens*) could have appeared in so many different regions. More importantly, it would eliminate the necessity of relying on dates to determine which species a number of specimens belong to.<sup>66</sup>

In Wolpoff’s college textbook, *Paleoanthropology*, he explains:

...there is no distinct beginning for *H. sapiens* as long as *H. erectus* is recognized. The earlier species can be seen merging into the later one everywhere they both are found, and because each has some of the morphology of the other there is continued and unresolvable confusion about whether they overlap in time...The best solution...is to cease distinguishing the earlier specimens on the lineage as *H. erectus*, and instead include them in *H. sapiens*.<sup>67</sup>

In other words, according to Wolpoff and Thorne, “*H. sapiens* has evolved in several parts of the world for approximately 2 million years.”<sup>68</sup>

Thus, while most evolutionists do not entertain the possibility that *H. sapiens* lived well before 200,000 ya, there are exceptions. Milford Wolpoff concludes in his college textbook, *Paleoanthropology*, that *H. sapiens* appears at about 2 mya and precedes the earliest appearance of *H. habilis*.<sup>69</sup> Such a recognition would arguably eliminate every *Homo* species in Figure A-1 as a legitimate transitional form, except possibly *H. rudolfensis*.

Other scientists agree with the logic of sinking *H. erectus*. William Laughlin studied the variation among Aleutian populations during the last 5,000 years (i.e., all were *H. sapiens*). His studies noted that the skull shape changed dramatically over this period, as the older skulls were long from front to back and narrow from side to side, while the modern skulls were broad from side to side and short from front to back. Laughlin also compared the Aleut skulls (*H. sapiens*) with that of Peking Man (*H. erectus*). He noted that some traits that led to Peking Man's classification as *H. erectus* are found in modern Aleut and Eskimo skulls, including mandibles with a bony mound behind the bottom teeth (mandibular torus), and the appearance of a "horizontal suture" on the back of the skull, which makes the skull look as though it is a fusion of four pieces of bone instead of three, as is more common in modern man. Due to the dramatic similarity between modern Aleut skulls and those of Peking Man, Laughlin concluded:

...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 of *Homo sapiens*, it seems justifiable to conclude that *Sinanthropus* [Peking Man, now *H. erectus*] belongs within this same diverse species.<sup>70</sup>

In his textbook *Physical Anthropology*, Gabriel Ward Lasker writes:

*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 most features of *Homo erectus* falls within that of modern man.<sup>71</sup>

The conclusion that *H. erectus* and *H. sapiens* are similar from a morphological perspective is supported by many recent finds, including the 2003 announcement in *Science* of the first-ever *H. erectus* fossil (Sm 4) that enabled researchers to glimpse a *H. erectus* cranium base, which was found to be "unexpectedly modern" in anatomy.<sup>72</sup>

Likewise, Susman, Stern and Rose conclude in the *American Journal of Physical Anthropology* that "changes in locomotor anatomy from *H. erectus* to modern man were relatively minor and by earliest *H. erectus* times body size was essentially modern..."<sup>73</sup> Indeed, far from appearing as an intermediate between the small australopithecines and *H. sapiens*, *H. erectus* actually had a larger average body mass than *H. sapiens* (58 kG vs. 53 kG).

Probably the most significant difference between *H. sapiens* and *H. erectus* is that the latter had an average cranial capacity of 1,016 cc versus about 1355 cc for *H. sapiens*. However, *H. sapiens* has a very large range in cranial capacity. One estimate places the range from 700 cc to 2200 cc, while other estimates more commonly place the range for humans to be 850 cc to 900 cc on the low end, which is assumed in the discussion below.<sup>743</sup>

By comparison, the range of *H. erectus* is generally from 700 cc to about 1300 cc. It is noted, however, that the Dmanisi *H. erectus* finds in the country of Georgia reported in 2000 and 2002 contained an individual—thought to be an adolescent female—with a cranial capacity of 650 cc that dated to 1.7 mya and another

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<sup>3</sup> The low end estimate of 700 cc was used in *Repairing the Breach*, but since the low end estimates in the 850 cc to 900 cc range are better documented, the discussion here proceeds assuming the 850-900 cc lower end range.

individual, also thought to have been an adolescent—with a capacity of 600 cc.<sup>75</sup> While the cranial capacity of these individuals would have continued to increase if they were not fully grown when they died, the fossils nevertheless created a stir due to their small size.

While the *H. erectus* range of cranial capacity does not fit entirely within the widely accepted range for *H. sapiens*, recall from the earlier discussion that, as far as cranial capacity is concerned, skulls are assigned to *Homo* when the capacity is 600 cc or larger, so the question with the Dmanisi and other *H. erectus* skulls is whether the relatively small cranial capacity of some fossils would prevent classifying them as *H. sapiens* and attributing their small size to nutrition or other factors.

Wolpoff and others who have observed the gradual transition in size and morphology from *H. erectus* to *H. sapiens* have continued to propose the combining of the two species. After the Dmanisi finds, Wolpoff suggested scrapping “the idea of *Homo erectus* entirely” and reclassifying “everything after *Homo habilis*...[as] *Homo sapiens*.” The report in *National Geographic* quoting Wolpoff concluded that:

The remarkable variability of the specimens found at Dmanisi may support this radical revision...perhaps our ancestors were as variable in size as humans are today. Why not? After all, Shaquille O’Neal and Danny DeVito are members of the same species. Is it possible that the scientists who have given new species names to every early *Homo* find with significant differences have made our family tree more complicated than it really is?”<sup>76</sup> Likewise, a November 2003 *Scientific American* article, although proposing *H. erectus* remain a separate species designation, explained that “the anatomical range evident in the Georgian remains could...underscore how variable a species can be. Viewed that way, some pruning may be in order...”<sup>77</sup>

It should also be kept in mind that a smaller cranial capacity does not correspond to less intelligence and *H. erectus* is widely accepted to have used fire and is even thought to have constructed sea worthy craft by.<sup>78</sup>

The final evidence that would lead one to reasonably conclude that *H. erectus* can be collapsed into *H. erectus* surrounds the Kow Swamp finds that were dated to 10,000 ya. Since this date was inconsistent with accepted theories, the announcement in *Nature* was accompanied by a discussion explaining that differences in morphology between *H. erectus* and *H. sapiens* can be explained independent of evolution. Specifically, in trying to explain why the Kow Swamp fossils may actually be *H. sapiens* fossils that only appear to be *H. erectus*, a commentary in *Nature* stated that any of the following non-evolutionary factors could account for the differences: 1) inbred communities, 2) natural variation may result in certain specimens having thicker bones and giving them a better chance of being preserved, thereby leading to the false conclusion that the whole population was thick-boned, and of a different species; 3) the result of nutritional problems; 4) low-grade anemia; 5) genetic factors; 6) endocrinal factors; 7) a pathological condition; 8) the failure of paleoanthropology to clearly define what separates one *Homo* species from another; and 9) the tendency of those in the profession to “tailor the measurement to fit the skeletal investigation...”<sup>79</sup>

Most evolutionists adopted such reasoning (or allowed for the possibility that the Kow Swamp individuals were *H. sapiens* that practiced head binding). This avoided the needed to consider recent dates for *H. erectus*, although the recent dates again arose after the 1996 announcement, described above, dating a second group of *H. erectus* fossils from Indonesia to as recent as 23,000 ya.

When these recent dates are considered with the 1994 realization that *H. erectus* dates to approximately 2 mya in Asia and southern Europe, it is understandable that evolutionists would declare “Everything now is in



flux...It's all a mess"<sup>80</sup> and "We don't have a clue"<sup>81</sup> as to what migrated from Africa, when it emerged, or even where *H. erectus* itself originated.

### ***Homo Ergaster, Homo Heidelbergensis, and Homo Antecessor, Another View***

According to the scientific literature, *H. erectus* and *H. sapiens* were contemporaries with (and actually preceded) *H. ergaster*, *H. heidelbergensis*, and *H. antecessor*. Thus, unless one chooses to invoke a contemporary status just-so story, one can logically conclude that these so-called transitional forms did not transition into *H. erectus* or *H. sapiens*. In fact, there is support in the scientific literature for sinking all three candidates.

**Supporting Evidence.** *H. ergaster* is the name given to some East African *H. erectus* fossils. Many evolutionists reject the separate species name. David Dean and Eric Delson, for example, employ the logic of the rules established above and stated in a 1995 *Nature* article that "We do not consider that the African Pleistocene fossils sometimes termed *H. ergaster* represent a distinct biological species, given the known ranges of variation..."<sup>82</sup> Similarly, Alan Walker notes in 1993 that when the species was established based on the type specimen, the originators "did not attempt to make a differential diagnosis between this specimen and those attributed to *H. erectus*."<sup>83</sup> These opinions are now widely held based on the Daka fossils, which are *H. erectus* fossils that share certain characteristics with Asian and African sample ranges. Tim White, who co-authored the Daka announcement explained, "This African fossil is so similar to its Asian contemporaries that it's clear *H. erectus* was a truly successful, widespread species..." and that recognition of a "lineage with the separate species name '*H. ergaster*' is therefore doubtfully necessary or useful."<sup>84</sup>

*H. heidelbergensis* is also known as archaic *H. sapiens*, and is thought by some to be the predecessor of Neanderthal.<sup>85</sup> As its alias suggests, there is ample evidence that the species is well within the range of *H. sapiens* and should be so classified. As stated in a 1997 *Science* article, the species is "something of a 'wastebasket taxa' that includes widely varying African and European fossils..."<sup>86</sup>

Finally, *H. antecessor* is another disputed classification and is linked to the Gran Dolina site in Spain. Many evolutionists believe that there is nothing sufficiently distinctive about these fossils to warrant a separate species classification from *H. erectus*. As one evolutionist stated after the hominid's announcement, "This hominid had the face of a sapiens, a mandible approaching *heidelbergensis*, and premolars like *ergaster*. What to call such an *hombre*? If you say it's not *heidelbergensis*, it has to be a new species...and if you don't name it, someone else will." Considering that the species is described as having "a totally modern face," and that the preceding classifications can be placed into *H. sapiens*, *H. antecessor* can also be so assigned.<sup>87</sup>

### ***Homo Neanderthalensis and H. floresiensis, Another View***

*H. floresiensis*, the so-called "hobbit," possibly had the condition of microcephaly (in which the head and brain are significantly smaller than average for the person's age and gender) and won't be discussed in detail here as it is too recent (12,000 years ago) to be considered on the evolutionary path to *H. sapiens*.

The differences between *H. Neanderthalensis* and *H. sapiens* have a long history of being overstated, and there is a strong case to be made that Neanderthal belongs to *H. sapiens*, in fact, many evolutionists classify it as a subspecies (*H. sapiens neanderthalensis*).

**Supporting Evidence.** The primitive nature of the Neanderthals is traced to the reconstruction of Marcellin Boule in the early 1900s. This view was uncritically accepted until 1957, when William Straus and A.J.E. Cave exposed the flawed reconstruction by Boule:

There is thus no valid reason for the assumption that the posture of Neanderthal man...differed significantly from that of present-day men...there is nothing in this total morphological pattern to justify the common assumption that Neanderthal man was other than a fully erect biped when standing and walking...if he could be reincarnated and placed in a New York subway—provided that he were bathed, shaved, and dressed in modern clothing—it is doubtful whether he would attract any more attention than some of its other denizens.<sup>88</sup>

This deceptive portrayal is not limited to the past. Between 1979 and 1991, orthodontist Jack Cuzzo performed X-ray studies of the world's most well-known Neanderthal Man fossils. He concluded in *Buried Alive* that many Neanderthal fossils are intentionally displayed inaccurately in museums, in order to make the specimen appear primitive. This is done by placing the lower jaw forward and out of joint. He found that this had occurred on many of the most famous skulls at the Musée de l'Homme in France, the British Museum, and at museums in Belgium and Berlin.<sup>89</sup>

Once the deceptive reconstructions of Neanderthal Man are considered, there remains little reason to view him as other than *H. sapiens*. His average cranial capacity of 1550 cc is well within the upper range of *H. sapiens* (2200 cc), and “Specialists on human brain evolution are hard put to identify any features on the external surface of the brain (as revealed in casts of the interior of the braincase) that would by themselves suggest any major functional difference between Neanderthal and modern *sapiens* brains.”<sup>90</sup> Also, recent studies examining dexterity suggest that Neanderthals’ “may have been as handy with their tools as modern humans are.”<sup>91</sup> This has been reinforced by the discovery of stone tools, weapons, and decorated grave sites in association with Neanderthals.

Finally, there is good reason to believe that Neanderthals could interbreed with *H. sapiens* and did so. For example, the so-called Hybrid Child from Portugal (25,000 ya) contains features described as “a complex mosaic of Neanderthal and early modern human features” that “indicates that Neanderthals and modern humans are members of the same species who interbred freely.” Paleanthropologist Fred Smith concluded “Neanderthals as organisms no longer exist.”<sup>92</sup> A similar conclusion results from a 30,000 year old skull found in Romania that “firmly place key Neanderthal life history variables within those known for modern humans.”<sup>93</sup> Thus, the fossil evidence suggests that the Neanderthal was closely related to *H. sapiens*.

In 2010, a *Science* article added significant weight to the conclusion that Neanderthals could reproduce with *H. sapiens* and did so in the past. The study was able to evaluate extensive portions of the Neanderthal genome and concluded that between 1 percent and 4 percent of the genomes of present day populations in Eurasia are derived from Neanderthals. The study further concluded that “analysis of the Neanderthal genome shows that they are likely to have had a role in the genetic ancestry of present-day humans outside of Africa, although this role was relatively minor...”<sup>94</sup>

### ***H. habilis* and *H. rudolfensis*, Another View**

Thus far, it has been explained that all *Homo* species dating to *H. habilis* (2 mya) can logically be sunk and that there is support for doing so in the scientific literature. Here it is explained that: 1) the *H. habilis* was created

through a mixture of fossils some of which were australopithecine and some of which best aligned with *H. erectus*, that 2) a *H. rudolfensis* to *H. habilis* sequence produces an unworkable evolutionary U-turn; that 3) the scientific literature calls for the sinking of *H. habilis* as a species classification; that 4) the scientific literature now admits *H. habilis* could not be the ancestor of *H. erectus* due to a prolonged contemporary status issue; and that 5) if the *H. habilis* fossils are assigned to the australopithecines, it leaves *H. rudolfensis* as the earliest *Homo*, and there is reason to sink it into *H. erectus* and, hence, *H. sapiens*.

**Supporting Evidence:** Louis Leakey's announcement of *H. habilis* included fossils from strata called Bed I and Bed II at Olduvai. These fossils generated immediate criticism for the lack of a detailed description, errant measurements, and because some of the fossils appeared to be australopithecine and others, *H. erectus*. In other words, the possibility was immediately raised that *H. habilis* was an invalid taxon (an illegitimate classification). Writing in the January 9, 1965 issue of *Nature*, anthropologist J.T. Robinson stated: "The endocranial capacity of *H. 'habilis'* appears, on the scanty and indirect evidence available, to have differed little from that of the australopithecines with a range overlapping that of the latter substantially." He then explained:

...it must be remembered that two groups of specimens are involved: one from Bed I and the other from Bed II...It is therefore by no means clear that the Bed I and Bed II groups of specimens necessarily belong to the same species...In terms of the available evidence it would seem that there is more reason for associating the Bed I group of specimens with *Australopithecus* and the Bed II group with *Homo erectus* than there is for associating the Bed I and II groups with each other.<sup>95</sup>

A difficulty with *H. habilis* was that no post-cranial material in clear association with a *H. habilis* skull would be forthcoming until the mid-1980s. In the mean time, evolutionists had theorized that, if it really was the intermediate link between *A. afarensis* and *H. erectus*, *H. habilis* would have been intermediate in height, weight, and morphology. However, in 1986, it was revealed that *H. habilis* (represented by the OH 62 fossils) resembled Lucy in morphology and was just over three feet tall, smaller than *A. afarensis*. This constituted an enormous evolutionary U-turn for those proposing an *A. afarensis*—*H. habilis*—*H. erectus* sequence. Further "there are striking anatomical and proportional similarities between the OH 62 postcranial skeleton and small *Australopithecus* individuals (especially A.L. 288-1)."<sup>96</sup> Rather than sink *H. habilis* into *Australopithecus*, however, an outrageous theory was proposed by Tim White and Donald Johanson. They suggested that between 3 mya and 1.8 mya, *H. habilis* underwent no evolutionary progression; then by 1.6 mya, there came an "abrupt transition," in which the three-foot-tall *H. habilis* evolved into the modern sized *H. erectus* over the span of only 200,000 years.<sup>97</sup> This extreme "growth spurt" scenario has since been completely invalidated, as *H. erectus* is now widely dated to 1.9 mya (and earlier by some), or 100,000 years before the supposed abrupt transition leading from *H. habilis* to *H. erectus*.

Further evidence against *H. habilis* as an unworkable transitional form emerged in 2007, when a major announcement in *Nature* explained that, due to a prolonged contemporary status at a single site, *H. habilis* likely did not give rise to *H. erectus* (in other words, **even these evolutionists have abandoned contemporary status just-so stories and now admit that the contemporary status issue is probably fatal to a long-standing evolutionary sequence**):

Anthropologists have tended to see the evolution of *Homo* species as a linear progression, beginning with *H. habilis* and passing through *H. erectus* before ending up with modern humans. But it seems the path through time was broad enough for more than one species to walk abreast, with *H. erectus* and *H. habilis*

living in the same place at the same time for as much as half a million years. Spoor and his colleagues argue that this makes it less likely that *H. erectus* was a direct descendant of *H. habilis*...<sup>98</sup>

Well before this announcement, *Science* published an article in 1999 calling for the elimination of *H. habilis* as a *Homo* classification based on its small brain size (552 cc).<sup>99</sup> Further, 1) the article noted that “*H. habilis* cannot “be assumed with any degree of reliability to be more closely related to *H. sapiens* than to the australopiths” 2) the estimated body mass of 34 kg, is well below that of *H. sapiens* (53 kg) and *H. erectus* (57 kg); 3) the hand bones of the type specimen and long arms of other fossils “suggest that *H. habilis* was capable of proficient climbing”; and 4) they cited other problems leading to the conclusion that *H. habilis* “should be removed from *Homo*” and “transferred to the genus *Australopithecus*.”<sup>100</sup> An article in a February 2003 edition of *Science* similarly concluded that “the smaller brained, small-toothed hominids that have been placed in *H. habilis* do not appear to belong to that species...they may be thought of as a...form of australopithecine...”<sup>101</sup>

The elimination of *H. habilis* leaves only *H. rudolfensis* yet to be addressed among the primary species in *Homo*. *H. rudolfensis* dates to 2.4 or 2.5 mya and, if *H. habilis* is retained, creates an awkward U-turn for evolutionists given its much larger size compared to its supposed evolutionary descendent. *H. rudolfensis* includes multiple fossils that have been described as resembling *H. sapiens* in morphology and approaching the most commonly used lower size range of present day *H. sapiens*. For example the KNM-ER 1470 skull was 752 to 775 cc and described by Richard Leakey as “remarkably reminiscent of modern man, lacking the heavy and protruding eyebrow ridges and thick bone characteristics of *Homo erectus*.”<sup>102</sup> A second skull, KNM-ER 1590 was similar in size even though the individual died at approximately age eight.<sup>103</sup>

In another study comparing endocasts (a mold of the interior of the cranium) between 1470 (752 cc) and a *H. habilis* fossil (KNM-ER 1805 (582 cc)), Dean Falk observed: “The frontal lobe of KNM-ER 1470 lacks a fronto-orbital sulcus that characterizes all extant ape brains...as well as australopithecines from South Africa...the sulcal pattern appears completely human-like in the crucial caudal portion of the orbitofrontal cortex in the left hemisphere.”<sup>104</sup> Sighting a drawing in the article, Falk stated “If Fig. 1 illustrated an endocast of an extant human skull rather than that from KNM-ER 1470, one would conclude that the external gross morphology near and partially in Broca’s area appeared normal and that the human in question had probably been capable of speech, as suggested by Tobias...”<sup>105</sup>

Descriptions of other *H. rudolfensis* fossils confirmed the modern proportions and morphology. According to Henry M. McHenry:

...the proportions of the ilium (KNM-ER 3228) are much like those of later homo and unlike all known australopithecine hips...The proportions of the femora (KNM-ER 1472 and 1481) are more like *H. erectus* than any species of *Australopithecus*...The proportions of the talus (KNM-ER 813) are much more like *H. sapiens* than are other Plio-Pleistocene hominid tali (Wood 1974).<sup>106</sup>

Likewise, Bernard Woods concludes about the KNM-ER 1472 and 1481A femora:

Thus, there are at Koobi Fora leg fossils whose later homo-like morphology contrasts with that of the more australopithecine-like morphology of the Olduvai remains. These relatively derived remains...are found alongside a specimen such as KNM-ER 3735, which is judged to resemble the more primitive OH 62 skeleton.

An analysis of estimated stature/body weight relationships has also shown that whereas predictions based on the two Koobi Fora femora are in line with modern human and archaic *H. sapiens* relationships, they are substantially different from predictions based on the australopithecine-like Olduvai *H. habilis* remains, which instead conform to predictions based on the living African apes.<sup>107</sup>

Clearly, a number of *H. rudolfensis* fossils resemble *H. erectus* size and *H. sapiens* in size and morphology. Thus, had it not been for their ancient date, assignment to *H. erectus* and the sinking into *H. sapiens* would have been an option. Even so, some now classify the fossils as *A. rudolfensis*, and even claim that the *rudolfensis* fossils are the east African variety of *A. africanus*. But as is so often the case, this assignment is made primarily because *A. africanus* happens to date to this period. When one considers the findings of recent studies concerning *A. africanus*, discussed below, the proposed assignment is seen as completely unsatisfactory.

### **The Australopithecines, Another View**

The australopithecines are widely claimed by evolutionists to be the genus leading to early *Homo*. The most common sequence endorsed is *A. afarensis*, to *A. africanus*, to early *Homo*. However, this claim is suspect for two reasons. First, respected evolutionists who have studied the australopithecines have concluded that if it evolved into anything (it may have simply gone extinct with no descendants), it most likely gave rise to the orangutan or to another non-human primate, not *Homo*. Second, an *A. afarensis* to *A. africanus* transition involves a huge evolutionary U-turn, and must logically be rejected. These two conclusions are explained below.

**Supporting Evidence.** It is important to realize that paleoanthropologists come to their field of study with the firm and required conviction that human evolution is a fact—it is the only possible perspective if one wishes to enter and remain in the field (of course, they claim that it is because of the strength of evidence that they are all evolutionists and not because of a shared worldview). Also, since the only possibility allowed is that *Homo* arose in Africa, the next step is to determine what African genus most resembles and predates early *Homo*. Most studies do not even question whether the australopithecines are closely related to *Homo*; it is the assumed starting point.

Prior to the early 1980s, however, it was still permissible for those in the scientific establishment to question whether the australopithecines were, in fact, closely related to *Homo*. Reviewing the scientific literature from the 1980s, it is clear that there are sound reasons to reject an evolutionary relationship between the australopithecines and *Homo*.

Widely respected evolutionist Charles Oxnard, described by Stephen Jay Gould as the “leading expert on the quantitative study of skeletons,”<sup>108</sup> has studied the australopithecines extensively using multivariate analysis, a complex quantitative approach to evaluate form and function. He observes:

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 these fossil fragments are in fact, uniquely different from both man and man’s nearest living genetic relatives, the chimpanzee and gorilla. To the extent that resemblances exist with living forms, they tend to be with the orang-utan.<sup>109</sup>

In his work *The Order of Man* (1984), Oxnard explains further that the conventional evolutionary view holds that nine key australopithecine structures (the shoulder blade, clavicle, arm bone, elbow, finger bones, pelvis, ankle bone, foot arches, and toe phalanx) are either human-like or aligned much more closely with humans than with the African apes. His own studies strongly align five of these features more closely with the African ape, and the remaining four (the arm bone, elbow, pelvis, and toe phalanx), not with humans, but as uniquely different from both modern man and the African apes. Thus, while he does not dispute that the australopithecines may have had bipedal capability, Oxnard is adamant that the type of bipedality differed greatly from that of modern humans, and that the australopithecines were not on the evolutionary path leading to *H. sapiens*:

Everyone believes that, of all extant forms, humans are closest to [the australopithecine] fossils in an evolutionary sense. But, given that anatomical parts speak most to the function of those parts, these findings raise doubt about functional adaptation in the fossils. Such findings must make us wonder whether the australopithecine pattern of bipedal adaptation really reflects a transitional phase to man. We can only come to the conclusion that, however able these creatures were at walking on two legs, they were also convincing quadrupeds and perhaps excellent climbers, feats denied to man today. It is therefore likely that, irrespective of how close these fossils are to human evolution, they must have been upon some side-path that did not lead to human-like functions... We may well have to accept that human bipedality is far older than previously guessed, and that australopithecine locomotion included one or more parallel experiments in this direction.<sup>110</sup>

He observes further:

...the australopithecines known over the last several decades from Olduvai and Sterkfontein, Kromdraai and Makapansgat, are now *irrevocably removed from a place in the evolution of human bipedalism*, possibly from a place in a group any closer to humans than to African apes and *certainly from any place in the direct human lineage.*<sup>111</sup> [emphasis added]

He also notes the unique nature of australopithecine teeth:

...the general consensus is that the evidence clearly supports their near human status. What, however, are the facts? Some studies show that in some features (incisors, canines and lower first premolars) the australopithecines are indeed man-like, and this has been emphasized in the literature. But in other features (remaining premolars and molars) other studies show that they are ape-like. Assessment, with hindsight... shows that some features are neither man-like nor ape-like but absolutely different from each... these creatures possess a combination of dental features rendering them distinct among the hominoids.

The distinctive australopithecine morphology, together with contemporary status issues raised by fossils such as KNM-ER 1470, leads Oxnard to conclude the following:

Almost every year, it seems, are revealed new fossil specimens which are much more like man than the original australopithecines from Olduvai and Southern Africa, and which, at the same time, are at least as old geologically or even older than them. The Olduvai and Southern Africa australopithecines must have been, on the basis of this information alone, a long way from the lineage leading to man...<sup>112</sup>

Again:

It is now being recognized widely that the *australopithecines* are not structurally closely similar to *humans*, that they must have been living at least in part in arboreal environments, and that many of the later specimens were contemporaneous or almost so with the earliest members of the genus *Homo*.<sup>113</sup> [emphasis added]

Thus, if the australopithecines align with any living group, it would be with the orangutan, not *Homo*. It is therefore questionable to represent that the evidence unequivocally indicates an australopithecine-to-*Homo* sequence. The australopithecines were unique in many respects, and it is simplistic and naïve to conclude that crude bipedal capability or reduced tooth size indicate that the group was the direct ancestor of *Homo*.

The second major point is that an *A. afarensis* to *A. africanus* evolutionary sequence is not workable. This is due to the fact that *A. africanus* is much more primitive in morphology than *A. afarensis*, even though it lived roughly a million years later. In May of 1996, *Science* reported that much had been learned from the study of South African *A. africanus* fossils previously unavailable during the years of apartheid. It was found that:

...the body proportions of *africanus* were actually more apelike—and perhaps more suited to a life in the trees—than those of *afarensis*, its presumed ancestor...the skeleton suggests that the path from the apes, toward humanlike body proportions—shortened arms and longer legs—and the terrestrial way of life that went with them, was not at all straightforward. It may have included a temporary return to a lifestyle that included more tree-time.<sup>114</sup>

In 1996, the *Journal of Human Evolution* featured an article by two leading experts on *africanus*. They concluded about an *africanus* tibia, Stw 514:

The total morphological pattern of the Stw 514 tibia is certainly the most ape-like of any Pliocene of Pleistocene hominoid tibia yet recovered, being even more ape-like than those of *A. afarensis*...We, thus, question the ability of this tibia to function in the same way as in a human obligately terrestrial biped...*A. africanus* was extremely ape-like in its morphology, and possibly arboreally adapted...We are struck by the fact that no single feature can be used to separate this tibia unequivocally from that of a chimpanzee...[and] begs a re-analysis of the phylogenetic relationships of *A. africanus* and *A. afarensis*...it is difficult to reconcile these features with the interpretation of White et al. (1983) that *A. afarensis* was ancestral to *A. africanus*.<sup>115</sup>

Likewise, a 1995 *Science* article stated: “A discovery at Sterkfontein near Johannesburg, South Africa, of four foot bones provides evidence that the australopithecine foot possessed an apelike great toe that diverged from the other toes and was highly mobile...Its foot has departed to only a small degree from that of the chimpanzee.”<sup>116</sup> Since most evolutionists claim that Lucy had lost its divergent toe, *A. africanus* is a very unlikely descendent from *A. afarensis*, to put it mildly.

A few evolutionists have tried to salvage a meaningful evolutionary role for *A. africanus* by claiming that it, and not *afarensis*, led to *Homo* because *A. africanus* was more similar to *H. habilis*. This argument is doubtful, however, in that it has already been shown that *H. habilis* (absent fossils belonging to *H. rudolfensis*, *H. erectus*, or *H. sapiens*) should be assigned to the australopithecines, and that some evolutionists now admit that *H. habilis* did not lead to *H. erectus* due to the half-million year contemporary status of the two species.

Finally, *A. africanus* has its own contemporary status issues that eliminate it as an ancestor to *Homo* because it appears to have lived more than 1 million years after *H. sapiens* was on the scene. Recall that the first specimen

found was the Taung Child, dated to more than 2 mya initially. In 1973, *Nature* contained an article that reported the cave in which the Taung skull was less than 1 million years old (so the contents would have been even more recent). As Phillip Tobias conceded in the same issue, it should seriously be considered that the Taung child could be “a later survivor of *A. robustus*...” which no one claims led to *Homo*.<sup>117</sup>

The remaining australopithecines deserve little coverage as possible transitional forms leading to *Homo*, and the evolutionary establishment similarly downplays their importance. *A. garhi*, a contemporary of *affricanus*, is described in *Science* as having “a brain but a third the size of modern humans, a projecting lower face like a chimp or Lucy, and immense teeth with broad incisors and molars.”<sup>118</sup> A *Science* editorial concluded: “*A. garhi* has few traits that definitively link it to *Homo*, and like other hominids from the same period, it may simply be an evolutionary dead end...”<sup>119</sup> Paleoanthropologist Fred Grine concluded “It’s a possible candidate [for *Homo* ancestry], but no better than *affricanus*.”<sup>120</sup> Another candidate (not shown on Figure A-1) is *A. aethiopicus*, which lived 2.5 mya but is usually not seen as a predecessor of *Homo*.

Another recently introduced australopithecine is *A. anamensis*. This species is notable only in that to help bolster the creation of a separate species, the team claimed that the KP-271 arm bone found by Patterson and the Laetoli footprints, which have long been associated with *afarensis* by the evolutionary community, belonged to their new species. Team members explained in *Scientific American*, “After careful study of the fossils...including Patterson’s fragment of an arm bone—we felt that in details of anatomy, these specimens were different enough from previously known hominids to warrant designating a new species.”<sup>121</sup> Indeed, Patterson’s fossil was one of the reasons why the team concluded that *A. anamensis*, possessing a mosaic of modern and primitive features “like humans...did not walk on its knuckles.”<sup>122</sup>

In April, 2010, the newest australopithecine was announced in *Science* as *A. sediba*. The creature lived between 1.95 and 1.78 mya, had a cranial capacity of 420 to 450 cc, and stood just over 4 feet tall. While some evolutionists would like to classify the find as *Homo* or ancestral to *Homo*, due to the small size of its teeth and other characteristics, this would be difficult to justify, especially considering that *H. erectus* is dated to 2 mya. The announcement of *A. sediba* acknowledged this difficulty, stating “The discovery of a < 1.95-million-year-old australopith that is potentially ancestral to *Homo* is seemingly at odds with” *Homo* fossils that predate *A. sediba* and with “approximately contemporaneous fossils attributable to *H. erectus*.”<sup>123</sup> The announcement concluded that “The possibility that *Au. sediba* split from *Au. Africanus* before the earliest appearance of *Homo* cannot be discounted.”<sup>124</sup> Perhaps not, but then neither can one discount the probability that the australopithecines have nothing to do with human evolution, and this holds especially true for *A. africanus*, to which *A. sediba* is linked in the 2010 announcement.

Finally, it should be noted that a new genus has been introduced in the 3 to 4 mya time frame that challenges the australopithecine claim as leading to *Homo*. Based on a cranium fossil from Kenya (KNM-WT 4000), the new classification is *Kenyanthropus platyops*. The cranium size is within the range of *A. afarensis* and *A. africanus* and “does not show the derived features associated with *Homo*,” except for some shared with *H. rudolfensis* and *H. habilis* that, it is argued, weaken the case for *A. afarensis* as the taxon giving rise to *Homo*.<sup>125</sup> Most in the evolutionary community have not been very open to arguments linked to the cranium, which was pieced together from 1,100 fragments and, warns Tim White, has “extensive deformation.” White believes it is a variant of *A. afarensis*.

## **Our Distant Past, Another View**



In recent years, many finds that pre-date the 3-4 mya time frame have been announced and are seen as the probable ancestors of the australopithecines. Given that there is no viable transition from the australopithecines to *Homo*, it is clear that these finds very likely have nothing to do with human evolution. What is interesting to note, however, is that these finds expose many long-held assumptions about human evolution as false.

In July of 2002, a new discovery from Chad was announced as one of the greatest fossil finds of the past 100 years. The find was a fossil cranium, TM-266, discovered by Michel Brunet's team and reported in *Nature* as being 6 to 7 million years old.<sup>126</sup> The fossil was given a new genus and species name, *Sahelanthropus tchadensis* and had a small cranial capacity of 320 – 380 cc. What was especially interesting about the fossil is that it has a very modern face when evaluated against features evolutionists have long viewed as belonging to *Homo* or very near *Homo*. As Bernard Wood explained in *Nature*: “a hominid of this age should only just be beginning to show signs of being a hominid. It certainly should not have the face of a hominid less than one-third of its geological age. Also, if it is accepted as a stem hominid...all creatures with more primitive faces (and that is a very long list) would, perforce, have to be excluded from the ancestry of modern humans.”<sup>127</sup> In other words, the find adds further support to the conclusion that fossils are not good indicators of genetic relationships.

Other fossils dating to 6 mya and vying with TM-266 for the title of “oldest hominid” are from Kenya and are identified as a new taxon: *Orrorin tugenensis*. The fossils, found by a French team including Marvin Pickford and Brigitte Senut, consist of small jaw fragments, isolated teeth, finger and arm bones, and some partial femurs. The find has caused much sparring with the TM-266 team and both teams question whether the other team's fossils should be considered as more closely related to the chimpanzee. Speaking of TM-266, one paleoanthropologist explains, “If you define hominids by a reduction in the canines and premolars, then it's a hominid...But if a hominid is going to be defined by walking upright on two feet, you can't tell...”<sup>128</sup> Pickford and others fired back in a letter to *Nature*, “...we believe that *Sahelanthropus* was an ape.”<sup>129</sup> Brunet replied that other researchers were trying to promote their find at the expense of TM-266, while misrepresenting its morphology.<sup>130</sup> *Orrorin tugenensis* is also vulnerable to criticism as a valid ancestor of *Homo*. C. Owen Lovejoy believes that the femur resembles that of a chimpanzee, and that the animal spent most of its time in trees.<sup>131</sup>

The final taxon discussed concerns the 2009 announcement of “Ardi,” which is assigned to *Ardipithecus ramidus* (*Ar. ramidus*). The first fossils were announced in 1994 and were initially classified as *Australopithecus ramidus*. The fossils dated to about 4.4 mya.<sup>132</sup> The key fossils behind the initial classification were ten teeth that were “far closer to that of a chimpanzee than to any known hominid,” and “centered in the chimpanzee ranges for these measures.” Other cranial fossils were described as having “a strikingly chimpanzee-like morphology.” While some were skeptical and explained that “the published fossils are so chimp-like that they may represent the long-lost ancestor of the chimp, not human lineage” others were not discouraged, realizing that the age of the fossils (and those of *Ar. kadabba* introduced in 2004, which dated to more than 5 mya) were very close to the long-agreed upon date for the common ancestor between the chimpanzee and humans, of 5 to 7 mya. Thus, so the reasoning continued, it would be expected that a hominid in this time frame would have been very chimp-like.

Finally, in October of 2009, Ardi and multiple other *Ar. ramidus* fossils were described in *Science*.<sup>133</sup> The species was described as a biped, able to walk upright but also able to maneuver well in trees. This description was based on the presence of an opposable toe, hands and long fingers that hung down past its knee, and a hand so flexible that it was likely used to support weight and to aid in locomotion when in trees. The basis for the biped claim is the hip, which team member C. Owen Lovejoy claims was suited for upright walking. The species was described as weighing about 50 kG and having the cranial capacity comparable to the chimpanzee. Dubbed

by *Science* as the “Breakthrough of the Year” all seemed to neatly fall in place. Three key issues should be noted, however.

First, the biped ability of *Ar. ramidus* is in question and if this does not hold, the hominid status of *Ar. ramidus* is immediately suspect. The biped status is argued based on the work of C. Owen Lovejoy, who previously assured the world that “it would have been as hard for Lucy to climb a tree as for us” and also claimed that the Laetoli footprints settled the question of locomotion for *A. afarensis*. However, others are skeptical and see Lovejoy’s conclusions as “framing the debate” over bipedal status that will now follow, much as he did with Lucy. As stated in *Science*:

But not everyone agrees with the team’s interpretations about how *Ar. ramidus* walked upright and what it reveals about our ancestors...researchers are focusing intently on the lower skeleton, where some of the anatomy is so primitive that they are beginning to argue over just what it means to be “bipedal.” The pelvis, for example, offers only “circumstantial” evidence for upright walking, says Walker.<sup>134</sup>

Second, if *Ar. ramidus* is put in an evolutionary sequence between TM-266 and *A. afarensis*, a significant evolutionary U-turn is involved with regard to cranial capacity and body mass. For example, TM-266 had a cranial capacity estimated at 360 cc, while the best estimate with *Ar. ramidus* is 300 cc, and with a range of 290 – 310 cc considered most likely.<sup>1354</sup> Likewise, TM-266 had an estimated body mass of 60 kG versus 50 kG for *Ar. ramidus*.<sup>136</sup>

Third, the 2009 articles confirmed yet again that fossil teeth (relied upon in the 1994 announcement) are very unreliable for making inferences about human evolution. That is, while the first teeth found suggested that *Ar. ramidus* was very chimpanzee-like, *Science* editor Ann Gibbons explained in the 2009 issue announcing Ardi: “The authors repeatedly note the many ways that *Ar. ramidus* differs from chimpanzees and gorillas”<sup>137</sup> This position is based on the finding that while Ardi would have “moved capably in trees”, it “lacked any characteristics typical of the suspension, vertical climbing, or knuckle-walking of modern gorillas and chimps.”<sup>138</sup> Thus, *Ar. ramidus* was significantly different from the chimpanzee in contrast to initial expectations.

But this issue goes much deeper than misdiagnosing the implications of fossil teeth. For, given the dates of *Ar. ramidus* and *Ar. kadabba* between 4.4 and 5.8 mya, why do they differ so significantly from chimpanzees? What about the common ancestor between chimps and humans that was supposed to date 5 to 7 mya according to fossil evidence and genetic studies?

The team announcing Ardi clearly had to develop an explanation, and they had two primary options. First, they could have decided that *Ar. ramidus* should not be placed on the path of human evolution though, one can surmise that if this option were followed, the announcement of Ardi would not have been proclaimed as the scientific achievement of 2009. Alternatively, perhaps the whole concept of the chimp-like common ancestor—including the dates of 5 to 7 mya and the concept of what the ancestor must have looked like—has been in error

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<sup>4</sup> While the announcement of Ardi mentioned a range of 300-350 cc in the primary article about the skull (*Science*, vol. 326, 2 October 2009, p. 68), the supporting on-line documentation states that the single best estimate is 300 cc, the “most probable range” is 290-310 cc, with an extended possible range of 280-350 cc (see “Supporting Online Material for The Ardipithecus Ramidus Skull and Its Implications for Hominid Origins,” 2 October 2009, *Science* 326, 68 (2009), DOI: 10.1126/science.1175825). The 300-350 range in the more widely read article was used to avoid an obvious evolutionary “U-turn.” At up to 350 cc, the species cranial capacity can be represented as “comparable to TM-266” and as overlapping the range for female chimpanzees (listed as 344 cc).

for decades. The team announcing Ardi opted for the latter option, revealing how speculative and unreliable the so-called “fact of human evolution” and the accompanying time lines have always been.

The team announcing Ardi concluded that: 1) the date of the common ancestor must be on the order of 7 to 10 mya (not 5 to 7 mya) due to the significant differences between Ardi and chimpanzees, and 2) “*Ar. ramidus* thus indicates that the last common ancestors of humans and African apes were not chimpanzee-like and that both hominids and extant African apes are each highly specialized, but through very different evolutionary pathways.”<sup>139</sup> To this, one can only point out that the last common ancestor remains theoretical and the more evidence is uncovered, the less likely it is that the common ancestor ever existed. Further, should a specimen ever be discovered in the 7 to 10 mya time frame that does appear as an acceptable candidate, human evolution will still fail as plausible because there is arguably only one viable *Homo* species, *H. sapiens*, and there is no viable candidate leading to *Homo* in the fossil record.

## Piecing It All Together

Figure A-4 and Figure A-5 illustrate some of the previously discussed evolutionary “U-turns” and unworkable transitions between the claimed hominids (note: *H. habilis* is labeled to suggest that *A. habilis* is a more appropriate classification). Shown are the U-turns and abrupt transitions seen in cranial capacity and body mass that occur in the most widely accepted human evolution scenario, which consists of the following sequence:

***S. tchadensis* to *Ar. ramidus*; to *A. afarensis*; to *A. africanus*; to *H. (or A.) habilis*; to *H. erectus*; to *H. sapiens***

An objective consideration of the cranial capacity and body mass plots in Figure A-4 and A-5 would conclude that the graphs do not represent an evolutionary sequence due to multiple “U-turns” and abrupt transitions. For example, at the key australopithecine to *Homo* transition, evolutionists would have us believe that the small *A. africanus* (36 kG, 440 cc), which lived more recent than 2.5 mya, somehow transitioned to the large *H. rudolfensis* (55 kG, 775 cc) nearly instantaneously, as the latter dates to between 2.4 and 2.5 mya. *H. rudolfensis* then evolved into *habilis* approximately 2 mya, even though the species was only 34 kG and had a cranial capacity of just 552 cc. To complicate matters further, for half a million years and for the species’ entire duration, (approximately 2 mya to 1.5 mya), *habilis* was contemporary with the much larger *H. erectus* (early *H. sapiens*) into which *habilis* supposedly evolved. Additional problematic U-turn sequences are clearly present when arguing that *S. tchadensis*, *Ar. ramidus*, and *A. afarensis* are on the same evolutionary path leading to *Homo*.

Realize, too, that Figure A-4 and Figure A-5 only indicate the problematic U-turns found with cranial capacity and body mass. Many other U-turns exist. For example, when viewing the cranial capacity and body mass plots of *A. afarensis* and *A. africanus* in the figures, it seems that at least these two species could be viewed in an evolutionary light. But recall that *A. afarensis* was widely hailed as the ancestor of man because it was supposedly an upright biped that had lacked an opposable toe. Yet an opposable toe is present in *A. africanus*, the supposed evolutionary descendent of *A. afarensis*. Moreover, *A. africanus* is described as having a morphology much more primitive than *A. afarensis* and, in fact, *A. africanus* is nearly indistinguishable from the chimpanzee in certain features. This is not an evolutionary sequence.

How does one make sense of it all? Based upon the arguments herein, all of which are supported by the scientific literature, Figure A-6 presents an alternative and more logical interpretation of the fossil record. In the figure, all *Homo* species are collapsed into *H. sapiens* with the exception of *H. habilis*, which is reassigned to

*Australopithecus*. The figure also indicates that there is no reason to read an evolutionary history into the fossils, as the arrows for each genus in the figure are horizontal and do not lead to another genus. In short, one can reasonably conclude **based on the scientific evidence that the so-called hominid fossils are not transitional but are from extinct primates that had nothing whatsoever to do with the appearance of *H. sapiens*. The scientific evidence supports *Special Creation*.**

## Conclusions

Paleoanthropology has been and remains dominated by those who have turned contradictions in logic, special pleading, just-so stories, and the selective and deceptive presentation of evidence into a sophisticated art form. By its very nature, the fossil evidence is subject to such a wide range of interpretation that personal bias and underlying worldviews inevitably enter the picture. Yet because of the worldview issue, alternative interpretations are rejected. David Pilbeam, who for 20 years was convinced that *Ramapithecus* was man's ancestor based on the species' fossil teeth, explained after he recognized his errant conclusions:

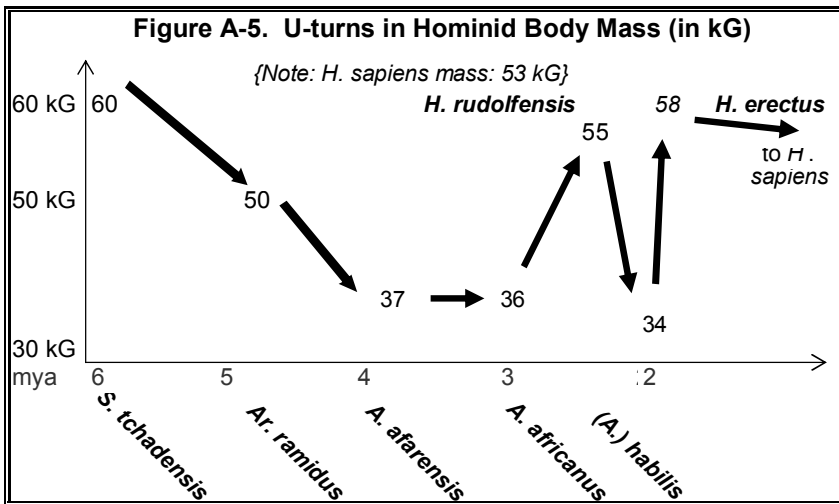
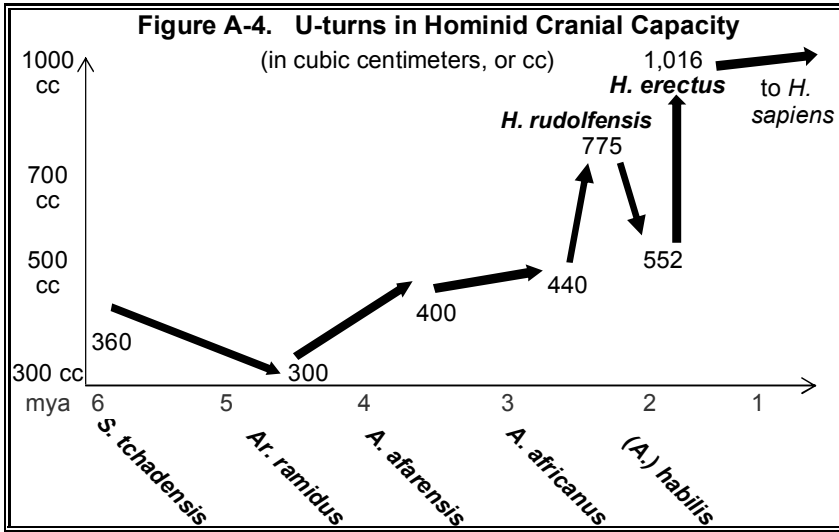
In the course of rethinking my ideas about human evolution I have changed somewhat as a scientist. I am aware of the prevalence of implicit assumptions and try harder to dig them out of my own thinking. I am also aware that there are many assumptions I will get at only later, when today's thoughts turn into yesterday's misconceptions. I know that, at least in paleoanthropology, data are still so sparse that theory heavily influences interpretations. Theories have, in the past, clearly reflected our current ideologies instead of the actual data...we should not promise too much. In my newly reflective state I am more sober than I once was about what the unwritten past can tell us. Too often it has reflected back only what we expect of it.<sup>140</sup>

The reader has learned the truth of these reflective words and now is aware that enormous uncertainty surrounds the validity of all claimed hominids. And still, human evolution is staunchly defended as a fact of science and only one interpretation of the evidence is presented to students in the classroom. This classifies as deception.

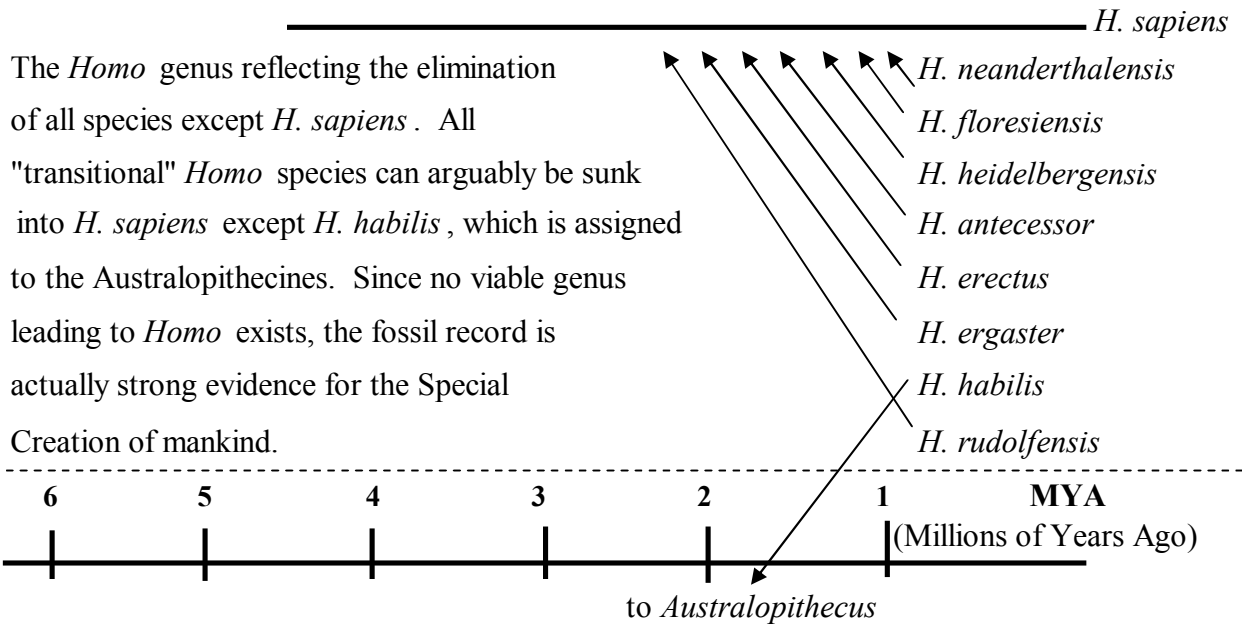
The deception occurs out of the desire to provide intellectual support for alternative worldviews and to teach children that they are the result of an unguided, purposeless process. The deception will continue unless a strong force rises to oppose it and successfully fights for the critical and objective presentation of evidence in the classroom, which would expose Darwinism and all the philosophies it supports as baseless.

Unfortunately, at the present time, the field of paleoanthropology is largely immune from objective, outside criticism, because few other than the self-deceived and self-promoting understand the terminology and methods used, only they have direct access to the evidence, and their unfounded conclusions are welcomed by like-minded educators who seek to indoctrinate children.

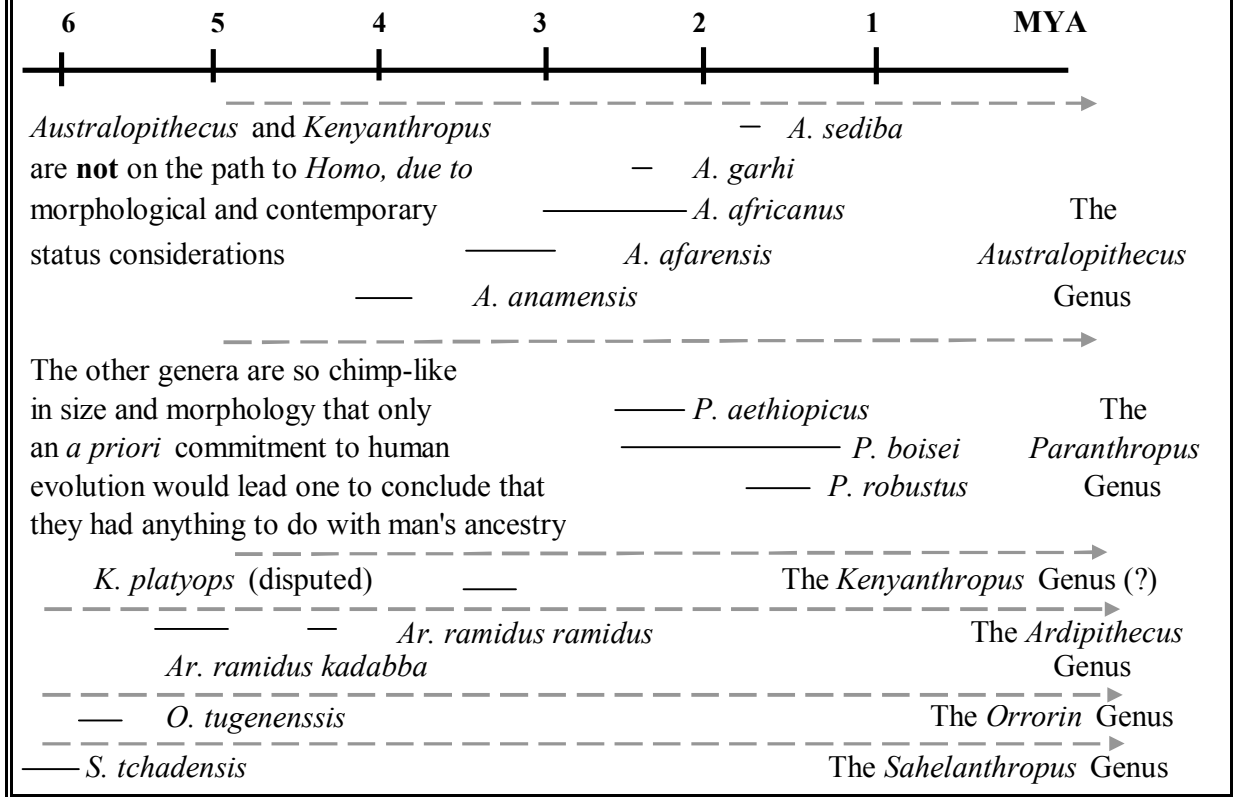
Meanwhile, men of good will outside of the field (this includes many clergy and apologists) must either *presume* that there is real science behind the claims for evolution, or express uncertainty about the "fact" of human evolution at the risk of being ridiculed as Biblical literalists, ignorant and opposed to science. In turn, those who presume that there is real science behind evolutionary claims often buy-in to the accompanying rhetoric and may also denounce criticisms of evolution. The evolutionists are only too glad to use such men when it helps hide the many shortfalls in their story, which are readily evident and even admitted to in the scientific literature. When evolutionists and trusting men of faith join to discourage or "shout down" the opposition, the case for human evolution is never called to the witness stand, so to speak, where even basic exercises in logic expose the story as untenable.



**Figure A-6 Human Evolution: The Full Story Based on Fossil Age and Morphology (page 1 of 2)**



**Figure A-6 Human Evolution: The Full Story (continued)**



Unfortunately, there is little reason to expect the future of this presumed biological science to differ from its past, for the truth is that evolutionists are not free to follow the evidence where it leads. Regardless of where the truth lies, they are philosophically and professionally committed to the “fact” of human evolution. Their task is to devise the best argument possible for human evolution, and then to sell this to the public, primarily through classroom education. The possibility that human evolution did not occur is not even a live option to be entertained.

Given the history of deception and flawed reasoning in paleoanthropology, and given the historical consequences of evolutionary thought, why would not *every* Christian teacher, *every* pastor member, and *every* apologist be *actively* involved in exposing the myth of human evolution? And how can Christian scientists fail to denounce as deceptive and irresponsible the National Academy of Sciences claim, through its book *Teaching About Evolution*, that “It is not longer possible to sustain scientifically the view that...the human species was not produced by the same evolutionary mechanisms that apply to the rest of the living world?”<sup>141</sup>

Perhaps the answer is ignorance, which this appendix has at least begun to address, but perhaps pride also plays a role. Whatever the case, all Christians who seek the truth can now draw courage knowing that, **beyond the high school text books and *National Geographic*, the scientific literature calls into question every assumption on which paleoanthropology has been based for the past century.** Included is the assumption that the change in tooth size from large to small has anything to do with evolution, that an ape-like common ancestor lived 5 to 7 mya and, as stated in *Nature*, that “bipedality is a diagnostic hominid trait. In other words, bipedality, as an habitual form of locomotion, might have occurred in lineages of apes that are now extinct.”<sup>142</sup> Perhaps most damaging of all are studies concluding that craniodental evidence is not even a reliable basis for constructing genetic relationships.

Little wonder, then, that leading anthropologist Bernard Wood has confessed: “I just told my students, ‘I’m sorry, but I don’t know how to distinguish the earliest hominid from the earliest chimp ancestor anymore.’”<sup>143</sup> As a 2002 *Science* article observed, “Into the trash, in fact, may go the very definition of what it means to be a hominid, as there is now little agreement on what key traits identify an exclusively human ancestor. Nor is there agreement on which species led to *Homo*, or even whether the fossils represent different species or variation within a single species.”<sup>144</sup>

Given recent developments, it is not an overstatement to conclude that paleoanthropology is, literally, in danger of becoming clueless. Unfortunately, some Christian teachers, clergy, and apologists now express more faith in human evolution than do the paleoanthropologists themselves. It is past time for all Christians to follow the direction in 2 Timothy 2:15 “Be eager to present yourself as acceptable to God, a workman who causes no disgrace, imparting the word of truth without deviation” and we must realize that we live in times described in 2 Timothy 4: 3, 4:

For the time will come when people will not tolerate sound doctrine but, following their own desires and insatiable curiosity, will accumulate teachers and will stop listening to



the truth and will be diverted to myths. But you, be self-possessed in all circumstances; put up with hardship; perform the work of an evangelist; fulfill your ministry.

For the sake of the children and of those who question or reject Christianity because of evolutionary science, let us not delay restoring truth. Again, any who doubt the seriousness of this task should consider the consequences of evolutionary thought and reflect on Matt. 18:6:

On the other hand, it would be better for anyone who leads astray one of these little ones who believe in me, to be drowned by a millstone around his neck, in the depths of the sea.

Truth matters and lies have consequences, both for the victims who believe the falsehoods, and for those who commit the sin of silence while generations are led astray.

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Students and teachers are encouraged to make this material part of the discussion of Darwinian science. Where schools are not willing to allow criticisms of Darwinism, it is all the more important for the Tear Sheets to be distributed outside of class and for students to ask questions about the deceptive Darwinian claims presented in textbooks.

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<sup>1</sup> From Jean Jacques Rousseau, *A Dissertation on the Origin and Foundation of the Inequality of Mankind*, in *Great Books of the Western World, Vol. 38, Montesquieu, Rousseau*, Robert Maynard Hutchins, ed. in chief (Chicago: Encyclopedia Britannica, Inc., 1952), p. 334, see also *Repairing the Breach*, p. 166.

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<sup>2</sup> From Sir Solly Zuckerman, *Beyond the Ivory Tower: The Frontiers of Public and Private Science* (New York: Taplinger Publishing Co., Inc., 1970), pp. 19-20, see also *Repairing the Breach*, pp. 605-606.

<sup>3</sup> From Bernard Wood and Mark Collard, "The Human Genus," *Science*, vol. 284, 2 April 1999, p. 66, see also *Repairing the Breach*, p. 37.

<sup>4</sup> From "Leakey's new skull changes our pedigree and lengthens our past," *Science News*, vol. 102, November 18, 1972, p. 324.

<sup>5</sup> From National Academy of Sciences, *Teaching About Evolution and the Nature of Science* (Washington, DC: National Academy Press, 1998), p. 40, see also *Repairing the Breach*, p. 104.

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