

seen as corollary to the King James Version text; in that the primal act of God in bringing forth the Flood was the breaking of fountains of the deep giving rise to heaping up of water which, in order to conserve total volume, would be followed by an overall land subsidence that would unleash associated up and down land motions. Furthermore, as already discussed, the spreading forth would carve out valleys and deposit mountains elsewhere at water impact regions. The rendering given by the modern translations seems to be favored by many creation scientists; for example see Whitcomb's discussion.<sup>10</sup>

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## A PLEA FOR CAUTION ABOUT SKULL 1470

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*The well known skull 1470, found by Richard Leakey, has been cited by many Creationists as evidence that man appears in the fossil record as early as other hominids, and that when he does appear he is fully a man. However, the skull has ape-like, as well as man-like, features. The author urges that Creationists be very cautious in using this skull as evidence, for if it should be decided later that it is not a human skull after all, they would have been leaning on a broken reed. It is suggested also that there is other evidence which Creationists should consider, and which they might find to be more conclusive and more helpful.*

In 1973 Richard E. F. Leakey cautiously announced the astounding find of a human-like fossil skull that possessed features too advanced for its tremendous antiquity of 2.8 million years. KNM-ER 1470, better known simply as "Skull 1470", immediately became controversial. Most evolutionary anthropologists were at first unwilling to accept its antiquity. Gradually acceptance was gained as several prominent scientists attested to its genuineness. The find of the decade shocked the world of anthropology. The neat textbook scenario of human evolution that pictured primitive forms progressing to modern man was suddenly all wrong. Of the skull Leakey said, "it simply fits no previous models of human beginnings . . . leaves in ruins the notion that all early fossils can be arranged in an orderly sequence of evolutionary change."<sup>1</sup>

Skull 1470 is now regarded, tentatively at least, by some as genus *Homo*, species indeterminate. Marvin Harris assigns the skull to an advanced hominid series called "habilines" which includes the controversial Lothagam mandible fragment and the dubious *Homo habilis*.<sup>2</sup> According to Leakey and others favoring *Homo* status, the creature lived contemporaneously with the australopithecines, considered by most scientists through the decade of the 1960's to be the "missing link" between man (*Homo erectus*) and his earlier ape-like ancestor, *Ramapithecus*.

But 1470 is more advanced than *Australopithecus*. *Australopithecus* cannot, therefore, be a human ancestor. But where did 1470 come from? No one knows. The fossil record, at this point, is not known to contain any ancestral forms for 1470. Even Harvard geologist Stephen Jay Gould is willing to admit that the form "appears suddenly" in the fossil record.<sup>3</sup>

### Creationist Comment on Skull 1470

Creationists welcomed the find joyously, especially when evolutionists emphasized its "human" features and began to call it genus *Homo*. Jon Buell in an article for *Moody Monthly* commented: "(the) find of Skull 1470 is not at all disquieting to the creationist, but it is to the evolutionist".<sup>4</sup> Duane T. Gish in his little book *Evolution: The Fossils Say No!* wrote: "The latest reports of Richard Leakey are startling, and, if verified, will reduce to a shambles the presently held schemes of evolutionists concerning man's origins".<sup>5</sup> And even more recently Marvin Lubenow, in his essay on evolutionary reversals, asserted that fossil skull 1470 "is more 'modern' than either *Homo erectus* or the Neanderthals, both of which, in evolutionary concepts, are supposed to have arisen much later".<sup>6</sup>

### Features of the Skull

Before proceeding further with an interpretation of this "startling" fossil, it is well to pause for a moment to catalogue its "remarkable mixture of both primitive and advanced features".<sup>7</sup>

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(1) The skull lacks the prominent eyebrow ridges common on *Homo erectus* (eg., Java Man), many Neanderthals, and its own contemporary, *Australopithecus*. (2) The brain case is 775 cc. (cubic centimeters) in capacity, which is as large as some rather small human brains. (3) The leg bones (found several weeks after the skull, but from the same 12 square mile area), assuming they belong to 1470, are "almost indistinguishable from those of *Homo sapiens*", and indicate an upright mode of locomotion. (4) The jaw and the molars (these from perhaps a child of the same species) are somewhat larger than the average modern human's. (5) The lack of bony support beneath the nostrils might indicate a rather gorilla-like nose. (6) The individual is thought to have been a mature female who weighed over 100 pound.<sup>8,9</sup> (7) Anatomist Alan Walker from the University of Nairobi, Kenya believes he may have found a Broca's area impression on the underside of the skull.<sup>10</sup> In man Broca's area is that part of the brain which controls articulate speech.

Skull 1470 has been with us for nearly five years. Indeed, there is even another newer find on the record. In August 1975 near Lake Turkana (formerly Rudolf), Kenya, Richard Leakey's team found a man-like creature that Leakey describes as "a dead ringer" for 1470.<sup>11</sup> It seems confirmed, then, that the species did exist.

### The Need of Caution by Creationists

It is at this point that I want to urge caution. I would caution creationists to not be overconfident in assigning Skull 1470 to our genus. I have serious doubts about such an assignment, especially with the announcement of the second find. The reasons for my doubt will be listed below. In doubting that 1470 was a human I am not thereby arguing for evolution. I am a convinced creationist. But creationists should not appear credulous, nor go out too far on a limb. We should have sound scholarly reasons for our position on this or any other skull find. And we should remember that the evolutionists may change their minds. They did about *Australopithecus*.

My point is this. The evolutionary mind thinks in terms of a general trend in time in which it is supposed man has rid himself of primitive or ape-like characteristics. "Advanced", as used of 1470, is therefore a relative term. 1470 is advanced from an evolutionist's point of view when compared with previously known australopithecines: its brain is larger, it lacks prominent orbital ridges, it possibly had better bipedal locomotion. And it had all these things at a time far earlier than the evolutionary mind was ready to accept. There was, in consequence, a great deal of discussion about the advanced features.

Therein, however, lies the very danger for creationists. We must not take the relative term "advanced" used by the evolutionists and make it our absolute. The evolutionary definition of man to such an extent as it is definite at all, falls rather short of a Biblical definition. "Man" is not simply an erect, bipedal, large brained (relatively), tool-making/using creature. Speech, for example, is one item many evolutionists leave out of their definition. Speech was one of the characteristics of the

first created humans according to the Biblical record (Genesis 2:23). 1470 may or may not (the evidence on the fragmentary skull is extremely tenuous) have had the facility for speech. Leakey was apparently assigning 1470 to genus *Homo* before Alan Walker's report that he may have found a Broca's area on the inside of the skull.<sup>12</sup> Indeed, the things which make a being human in the Biblical sense are precisely those which would hardly be preserved in a fossil.

On the basis then of the morphology (shape, form) of the Skull 1470 I want to argue that it is doubtful whether its so-called advanced features are so advanced as to warrant calling it a human skull. We will examine and comment on its features in some detail.

### A Closer Look at Some Features

**Browridges and forehead.** Heavy prominent browridges and sloping forehead are considered primitive features. They are common on monkeys and apes; and humans who possess them may be said to have simian features. Modern man almost always is relatively free of such pronounced ape-like characteristics. Some forms of early man (*Homo erectus*, Neanderthal, others) were characterized by both. If evolution were true one should find them rather prominently displayed on early forms of man, since he would be closer in time and evolution to his ape-like ancestors than is modern man.

The fossil record is rather inconsistent on this matter. Some fossil apes have prominent browridges, some do not. One that does not is *Proconsul*, the reputed ancestor of *Ramapithecus* (the so-called "first hominid"), who lived more than 10 million years ago (ages cited are those used by evolutionists). There are some early men that lack prominent browridges: A Fontéchevade female skull associated with pre-Neanderthal tools; and fossils from Kanjera, East Africa, of about the same antiquity.<sup>13</sup> And there are some very recent men who had them: mineralized bones of some 40 humans who reportedly lived only 10,000 years ago were recently discovered at Kow Swamp, north of Melbourne, Australia. The excavators tell of "massive and prominent" browridges on the skulls.<sup>14</sup>

The browridges on 1470 are not prominent. The forehead does slope backward rather abruptly in simian fashion, but it is more rounded (as is the occipital area of the skull) than that of either ape or robust varieties of australopithecines (Fig. 1). In light of the inconsistent fossil record and normal modern men who have simian features this evidence seems inconclusive by itself as to what genus 1470 belongs.

**Brain.** The absolute and relative sizes of the brain of 1470 seem to me the most damaging features of the skull's claim to *Homo* status. The listed cranial capacity for 1470 is 775 cc.<sup>15</sup> Compared to the gorilla (average, 500 cc.) or to *Australopithecus* (422 cc. to 530 cc.), that is rather large. The average brain size for modern man is about 1,450 cc. The small brain of Anatole France measured 1,000 cc., but very few humans with brains as small as 1470's have been recorded. By modern standards a human with a brain as small as 775 cc. is classified as microcephalic. "Humans with microcephaly are quite subnormal in intelligence, but they still show specifically human behavioral patterns . . ."<sup>16</sup>

As important as absolute brain size are studies of brain size and body weight ratios (or relative brain size), and the neurological organization of the brain. With regard to the first of these two items I quote from McHenry's report of his rather elaborate study of early hominids:<sup>17</sup>

None of these early hominids had brains approaching the size of modern human ones. The indices of encephalization show that australopithecines were only slightly above the great apes in relative brain size and even the largest cranium (KNM-ER 1470) is about as close to apes as it is to humans.

The neurological organization of a fossil brain is more difficult to assess. Casts made of fossil hominid brains can reveal at least the general brain morphology, but precise impressions of the convolutions of the

cerebral cortex and the furrows marking the boundaries between the various lobes are not found on the skull interior. Having made an endocast of 1470, Holloway wrote: "... this very ancient and relatively large brain was essentially human in neurological organization".<sup>18</sup> For those who want 1470 listed as genus *Homo* however, that statement may not be as supportive as it sounds: Holloway, in the preceding paragraph, says that *Australopithecus* also had "an essentially human brain." *Australopithecus* is today considered a primitive evolutionary dead end, an experiment that went nowhere.

For several years the possibility existed that 1470 was a single human fossil that just happened to be a microcephalic. Cranial fragments of possibly a child of the same species found near the original 1470 are inconclusive. But there are now other 1470-type fossils on

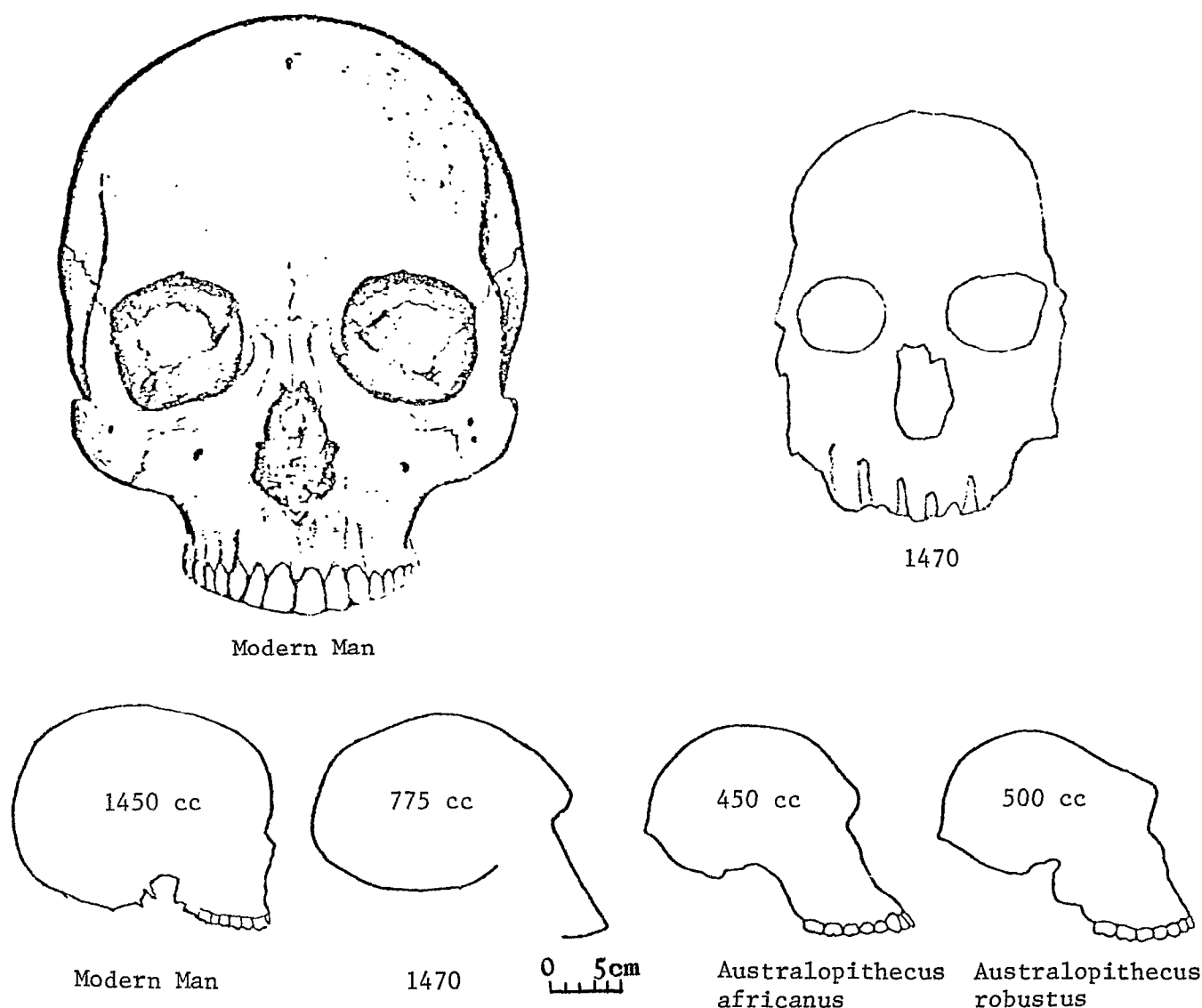


Figure 1. Skull 1470 seems to have more in common with *Australopithecus* than with *Homo*. It may represent an australopithecine variant. The sample is still too impoverished for us to make definitive statements about the relationship of Skull 1470 to the australopithecines and other hominids.

The following may be noted in the line drawings: (i) The prognathous facial profile of 1470 is similar to the australopithecines. (ii) The forehead of 1470 recedes at a rather low angle. (iii) The brain capacity is small compared to the average for modern man and even earlier sapient (for example, the Steinheim skull at 1150 cc.). (iv) The upper lip of Skull 1470 is nearly twice as long as the lip of genus *Homo*. A long upper lip is characteristic of apes.

the record, one of which Leakey describes as the "dead ringer." Not only do the additional finds establish the species, they also confirm that the species was small-brained both in an absolute sense and a relative sense when compared to modern man. This fact is a serious hindrance to placing 1470-types in genus *Homo*.

**Face.** The lower jaw of Skull 1470 was not recovered. In the reconstruction done for *National Geographic* by Jay H. Matternes the lower jaw is pictured as being chinless as is the case with monkeys, apes, australopithecines and some forms of early man. The reconstruction of the mandible was suggested by teeth and fragments of the possible 1470-type child found in the same area. Those teeth and jaw are reported as somewhat larger than ours, and imply, according to Leakey, a mixed diet of raw foods, including meat.<sup>19</sup> No teeth were present in the upper jaw of 1470 but enough of the palate survives to suggest a horseshoe shape (a shape that occurs with small canine teeth and which characterizes australopithecines and man—hominid dentition). The assumed lower jaw and teeth are inconclusive evidence for assigning the skull to a particular genus.

The face below the eyes of 1470, including the upper jaw, is rather prognathous (protrudes forward). Facial prognathism (as opposed to alveolar prognathism when only the tooth-bearing parts project) is the rule among all apes and is true of the australopithecines. Facial skeletons in *Australopithecus* are larger relative to the size of the neurocranium (brain case) than they are in man. A numerical index to express the relationship of the two parts of the skull shows 51.0 to 64.5 to be the range for *Australopithecus*. The range in *Homo* is from 30.0 to 45.0. The face/cranium index for Skull 1470 is 59.0, or about in the middle of the australopithecine range.<sup>20</sup>

Matternes felt justified in portraying a fleshed-out face of 1470 with a gorilla-like nose. The narrow nasal opening and the lack of bony support beneath the nostrils are indicative.

I might also point out that the quite long upper lip is very ape-like in contrast to the relatively short lip of humans.<sup>21</sup>

### Some Attempts at Interpretation

Leakey feels that the gorilla-like nose "is perhaps the most strikingly unhuman feature . . .".<sup>22</sup> My own feeling is that that nose, and that long upper lip on that prognathous face, are too primitive to be found on a member of genus *Homo*. It is true, and Matternes admits it, that soft features such as the nose of the reconstructed visage are conjectural. But, I believe that Gish over-simplified the matter in saying that it is merely necessary to replace the simian-like nose with a modern one in order to produce a human face "indistinguishable from types of individuals we have all seen many times".<sup>23</sup> A very small brained, long lipped, facially prognathous individual, regardless of the appearance of the nose, would not be a familiar looking human.

If not a member of genus *Homo*, what is 1470? Though many evolutionists are willing to assign 1470 to *Homo*, there are a significant number who are more

cautious. Alan Walker, who suggested the Broca's area in the skull, is one of those who urge caution in assigning such a taxonomic designation: "... several features that seem to be constantly found in *Australopithecus* are found in this cranium . . .".<sup>24</sup> (Fig. 2).

Marvin Harris' assignment of the skull to the habilines indicates his decision against *Homo* status for 1470. The best known representative of the habilines is *Homo habilis*. Elwyn L. Simons of Yale University maintains that holding *Homo habilis* as a valid species belonging in genus *Homo* is "defending a very weak case".<sup>25</sup> As Marvin Harris points out, "some experts continue to present persuasive arguments in favor of the theory that habilines, robusts, and graciles (the latter are both australopithecines) all belonged to one species".<sup>26</sup>

If Skull 1470 is not that of a human, what does one conclude? The evolutionist still has his continuing puzzle as to just which hominid(s) represents the ancestral line(s) leading to man. The fossil record at three or four million years ago inconsistently presents the evolutionist with advanced and primitive hominids living side by side with no indication as to where they came from or

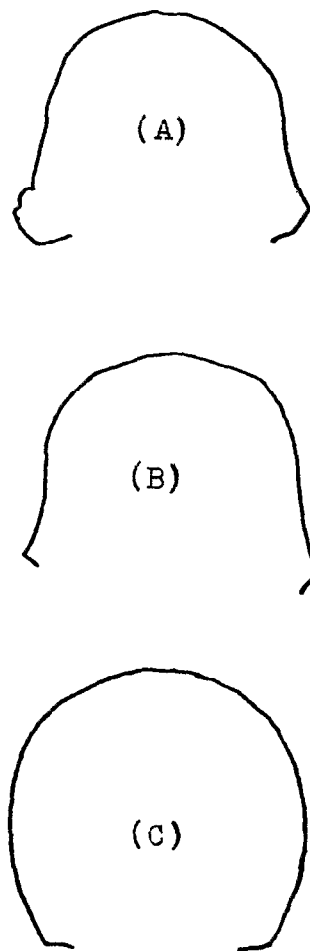


Figure 2. Comparison of *Australopithecus africanus* (A), Skull 1470 (B), and *Homo* (true man) (C). View is from the rear of the cranium. Note that the characteristic skirt-like profile of *Australopithecus* is true also of 1470. The widest part of the cranium is low as in *Australopithecus*.

where they went. No fossils connect either 1470 or *Australopithecus* back over five or more million years to *Ramapithecus*. No fossils connect 1470 forward in time to *Homo erectus*.<sup>27</sup>

If, of course, Skull 1470 is a member of genus *Homo* creationists will welcome it; for it represents the sudden appearance of man in the fossil record without ancestral forms. Its find would be, on that basis, disquieting to the evolutionist.

### Other Evidence Which Needs to be Considered

There are for the creationist some other interesting fossils to study from the supposed ancient time period of 1470 and the australopithecines. There are the femurs that "are unlike those of *Australopithecus*, and astonishingly similar to those of modern man".<sup>28</sup> There are the human-appearing fossil jaws of 11 distinct individuals recovered by Mary Leakey near Laetolil, Tanzania, in December 1974.<sup>29</sup> There is Donald C. Johanson's find of the left hand of an individual from the Afar Valley of Ethiopia that is "surprisingly modern in appearance".<sup>30</sup> What, though, does "astonishingly similar to modern man" mean? Were they or were they not humans whose remains Mary Leakey found? One wishes for clarification.

These new finds, as well as the claims of their finders, must also be treated with caution. Though I, personally, am sceptical of 1470, it should be considered that a scientific creation model would predict the presence of human bones together stratigraphically with other hominid remains in the fossil record. Much study remains to be done in order to clarify the hominid problem. So far there is little more than fragmentary skeletal remains to analyze. In spite of numerous and far ranging occurrences of stone tools (choppers, hammers, hand axes, etc.) and a provocative arrangement of stones suggesting a shelter in Bed I (the bottom!) of Olduvai Gorge, no cultural material has been found in unequivocal, direct and meaningful association with the fossil bones of Skull 1470 and related types. Creationists should be actively involved in hominid excavation, study and interpretation. They are the only ones who will bring to the study a proper definition of man. It may be said that for the evolutionist the definition of "man" is the problem.

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**Editor's note.** In connection with Reference 6, it should be said that, in a subsequent publication, Lubenow, having seen that the very evolutionists were questioning the status of skull 1470, did not depend on it in his argument. See Lubenow, Marvin L., 1977, Reversals in the fossil record: the latest problem in stratigraphy and evolutionary phylogeny. *Creation Research Society Quarterly* 13(4):185-190 and 230.

I understand also that Creationists are often at a disadvantage in discussing such fossils, having to depend on second-hand evidence. For it is likely difficult for them to be able to examine the fossil at first hand.