

EVOLUTION

No Great Ape Was Your Ancestor

Giants Do Not Produce Other Types of Giants; Evolution Of Man Must Have Been From Some Smaller Mammal

By DR. FRANK THONE

NEITHER GORILLA, nor chimpanzee, nor orang-utan, nor any other great ape of their size and kind was ever ancestor to man. So declares Gerrit S. Miller, Jr., of the U. S. National Museum.

This dictum, in flat contradiction to the orthodox Darwinian thesis still stoutly adhered to by very many zoologists and anthropologists, calls for an equally stout defense. Mr. Miller is prepared to offer it.

The great apes, he says, are giants of their tribe, too big to become ancestors of man, who is also a giant but of a radically different type. Giants, he explains further, have never been shown to have begotten anything but creatures of their own kind; or at most they have become ancestors to other giants very much like themselves. Citing an evolutionary chain with fewer missing links than there are in man's, he calls attention to the fact that present-day elephants are descendants of other elephants of types now extinct, but they do not trace any part of their ancestry back to the mastodons, giant beasts like elephants but distinct from them, and having no modern descendants. Other lines of big animals whose evolutionary history is well established show the same thing: giants do not beget other kinds of giants. The great apes are too big to be our grandsires.

Not Anti-Evolutionist

However, Mr. Miller wants it to be distinctly understood that in repudiating the great apes as ancestors he is not denying man's kinship to other mammals. He has not turned anti-evolutionist. He still holds that man's relations, "according to the flesh," are to be sought among the primates, or lemur-monkey-ape order of animals, where evolutionists of all colors of opinion have always placed them; where, indeed, the great Linnaeus, who was not an evolutionist, classified man himself. But he would seek man's direct ancestry among smaller extinct creatures in this

order rather than among the limited group of great apes, highly specialized along different lines from those of his own development.

The idea that man is a giant may come as a surprise, but if we take a look through the monkey house in the zoo, or through a reasonably complete zoology book, we see at once that it is so. The great bulk of the hundreds of primate species—monkeys, apes and kindred animals—are much smaller than we are. They are of sizes that range, as Mr. Miller puts it, between that of squirrels to that of bird dogs, of a dozen or two that are somewhat larger, and of four whose great bulk makes them wholly exceptional,—gorilla, orang, chimpanzee and man.

Man is Tallest

And even among these four "giants" of his miscellaneous kinship, man takes foremost rank in at least one respect. He is the tallest. Six-footers are not uncommon among men, and seven- or even eight-footers, though rare, are not unknown. Six-footers among the great apes must be excessively rare. There have been some monsters reported among them, but authentically recorded specimens of gorillas and orang-utans all fall short of a tall man's height.

This is mainly because of their relatively short, bandy legs, for their bodies are long, and often terrifically bulky. One well-measured gorilla five feet seven and one-half inches tall weighed 360 pounds, and not nearly as large a proportion of his weight went into legs as would be the case in a man.

One thing that has undoubtedly helped in getting apes a reputation for being taller than they are is their relatively enormous arm length. Former heavyweight champion Jack Dempsey was sometimes called a "gorilla" by sports writers because he had a 74-inch reach, yet a real gorilla 5½ inches shorter than he is had a reach of 97 inches! An ape like this with its legs imperfectly seen in the underbrush but waving its great arms in the air, would undoubtedly add several cubits to its

stature in the mind of an awed and imaginative traveler.

But regardless of which of the big primates can claim the honors of being the biggest, it is undoubtedly true that we are all giants together, and that the organ-grinder's monkey, not much larger than an ordinary cat, comes closer to being an "average" specimen of the great mammalian order to which we all belong.

Anthropoids Not All Giants

In excluding the great apes from man's ancestry, Mr. Miller makes it specifically clear that he does not mean all the anthropoids, or man-like apes. From his exception he excuses the gibbons, which are small anthropoids of southeastern Asia and the East Indies. These are most obviously not giants, for the average weight of grown-up animals is only about ten pounds—just the weight of a big new-born human baby.

Yet even so, Mr. Miller emphatically disclaims any implication that gibbons are ancestral to human beings. The existing and known fossil gibbons are highly specialized tree dwellers, with enormously elongate arms and hook-like hands and relatively short legs. Man is specialized in exactly the opposite direction, with all the work of getting about delegated to his long, ground-adapted lower limbs and his arms only moderately developed. So the gibbon as we know him could hardly have been ancestral to man on this one count alone.

The whole point is, Mr. Miller says, that we simply do not have enough fossil material as yet to build any kind of a reasonably solid bridge between man and any specific line of primates. All the factual evidence points backward to some such connection, but it does not point definitely enough to justify us in saying just where that connection was, or when it existed.

Mr. Miller's unwillingness to accept a verdict based on insufficient fossil evidence is not limited to the scanty fossil remains of extinct species of great apes. He is even more skeptical about two of the most famous skulls usually classified as primitively human, the Ape-Man of Java and the Dawn-Man of Piltdown, England. Both of these have been hailed as undoubtedly human by some

scientists, restorations have been built around their fragments and are now on view in the biggest museums, and lengthy discourses on the positions of these two extinct human or humanoid species have been spoken in scientific meetings and printed in the literature of science.

All this, Mr. Miller is convinced, is most unseemly and premature. In the first place, he points out, there is only one specimen of each kind,—a very imperfect specimen at that. But it is well known to all anthropologists that the skeletons of both man and the great apes vary so much from individual to individual that we must have many complete specimens before we can safely venture on drawing general conclusions. The great differences that can exist even between brothers are proverbial. Yet many scientists have not hesitated to base the most sweeping generalizations on single imperfect specimens when it comes to early man. Mr. Miller feels that they should resist this impulse, entirely natural though it may be, and patiently hunt for more material before they try to tell us all about *Pithecanthropus* or *Eoanthropus*, or set up their statures in museums.

Furthermore, he continues, skull tops are not at all the most important things to have as bases for the reconstruction of fossil species, whether human or ape. Skull-tops of large apes can be astonishingly human in their outlines. Neither do teeth help greatly, especially molar teeth. It is almost impossible to distinguish with certainty between some ape teeth and some teeth from human jaws.

Over-Sanguine?

The thigh-bone of the Java Ape-man is undoubtedly human; but is it really the thigh-bone of the Java Ape-Man? It was found at some distance from the skull, and there is a definite possibility that the two bones did not come from the same creature at all. Similarly, the strongly ape-like lower jaw usually associated with the skull of the Dawn-Man of Piltdown, England, may not have belonged to that skull at all. In calling attention to these possibilities, Mr. Miller is only raising anew the objections that other scientists have advanced in the past to what they have regarded as the over-sanguine views of their associates.

What we really need to establish the nature of these doubted skulls, Mr. Miller holds, is their basal portions. These would tell us decisively how man-like

or how ape-like the two early human or pre-human races were. One of the things that sets man and the apes most sharply apart is the position of the big hole in the base of the skull through which the spinal cord passes. In man, this opening is well forward, and the skull balances on the end of the spinal column like a basket of laundry on a Negro wash-lady's head. In all the apes and monkeys, on the other hand, the opening is way aft, and the skull does not balance, but juts forward and is held up by the pull of powerful muscles in the back of the neck and on the shoulders. Until we can find the bases of the skulls of Ape-Man and of Dawn-Man, we shall not know definitely their places in the animal kingdom.

Pelvis Also Important

Another bone, or group of bones, necessary for establishing the correct zoological status of any supposedly human fossil, according to Mr. Miller, is the pelvis. This is the irregular ring of bone at the base of the trunk, attached to the spine and in turn serving as attachment-point for the legs and as partial support for the vital organs in the abdomen. In upright-walking man, the legs are extended in the same direction as the spine itself, instead of being at right angles to it as in the ancestral quadruped pattern; and it is to give efficient leverage to the leg muscles in this new and "unnatural" position that



MIGHT BE IN VAUDEVILLE

The long-nosed monkeys are of "average" size for primates, and have faces like human caricatures

the pelvis has had to become profoundly modified. Furthermore, since it now has to bear all of the body weight instead of only half of it, as in the quadrupeds, it must be solidly constructed. In the apes and monkeys it is narrower and not so rigidly built, because these animals are not primarily leg-walkers. Even the least arboreal of them goes on all fours more than he does on his hind legs. For these and other reasons, there is a great difference between the pelvic bone structure of man and the apes, which no anatomist could escape noticing. So Mr. Miller demands, not the head of primitive man, but his pelvis.

There is a third striking difference between man and all the apes, though Mr. Miller stresses this rather less than he does the skull-base and pelvis differences. This is the position of the big toe. Man's foot is built for walking on flat surfaces, and the big toe is its principal lifting lever for the last thrust of each step. It is in the position of greatest efficiency for delivering that thrust—pointing straight forward. The feet of apes, on the contrary, are climbing feet, and their big toes are their principal grasping organs, pointing sidewise at a considerable angle. Even when he is walking erect the ape is unable to line up his big toe; it continues to point sidewise.

Until paleontologists are able to dig up the bases of the earliest skulls and the pelvises that go with them, therefore, Mr. Miller believes students of evolution should venture opinions only very conservatively. And he'd like to have a few big toes as well.

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MEDICINE

Lower Tuberculosis Deathrate For 1934

A LARGE reduction in the tuberculosis deathrate during 1934 is foreseen by statisticians of the Metropolitan Life Insurance Company who have been studying the mortality figures for the first quarter of the year. They expect the deathrate from this disease among the industrial population to run about 60 per 100,000 for this year. For the first quarter of the year the rate among insured white persons was 51.2 per 100,000, a "remarkably low figure."

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