

ON GIANTS AND MEN

by

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In ancient Mythology and in the Bible, the remembrance of Giants has been kept. Modern commentators believe that, a long time ago, some Giants have developed civilizations comparable to our own, even substantially in advance ! Other researchers assume that these Giants have existed long before us, and that they have passed on their knowledge to men 'smaller size', their successors...

So were really Giants the initiators of Humanity ? Or were they simply people just a bit taller than we ? The nuance is significant... In one case, we would deal with an ancient civilization of true Giants. In the other case, there were only isolated "giant" individuals who became later famous !

Disagreeing with my habits as sceptical scientist, I would range me here rather on the side of the scientific orthodoxy... Indeed, I would think that the Giants in History were people like us. As a matter of fact, it's the real expression of natural variability in size, within a biological species like ours : *Homo sapiens* !

Therefore, I will not finish this present article without focusing on what ultimately could be a "proof" of the existence of Giants in past times on Earth ! To my knowledge, this information was not reported in these terms, until now. But we have first to wait till the end of this article...

The following discussion summarizes what a zoologist can write today on Giant human forms, in *Homo sapiens* and in related species, now extinct or presumed to be extinct.

Stories of Giants

We all know about such stories. In books, Giants (but also, dwarves) are often tale characters for children. Throughout folklore narrative or origin myths, everyone may encounters Giants. Researchers as Pascal Cazottes [1] or Jean-Philippe Camus [2] related about in well documented articles.

The most famous of all biblical Giants is definitely Goliath. This very tall Philistine warrior was defeated in a single combat by the young David. In this episode, there are no names of other giants, but the Bible has other stories that are evoking giants...

We are aware of a well-known quote about such giants, highlighted by many commentators, like Jean Sendy, Denis Saurat, Jimmy Guieu, Robert Charroux or Erich von Däniken : « *The Nephilim were on the earth in those days — and also afterward — when the sons of God went to the daughters of humans and had children by them. They were the heroes and famous warriors of ancient times* » [Genesis, VI, 1-4].

As we already said, the mention of large men in the Bible is common. One can think of very tall people, very strong, who were "put forward" on the battlefield by their smaller compatriots... Such giants thus became representatives of a whole nation ! They were also often the leaders. Thus we speak of Nephilim, Anakim, Emim, Zuzim or Raphaim...

In this perspective, not all people were 'giants' : only their king or 'hero' was a giant, like the famous king Og of Bashan (at north of modern Jordan). In the Bible (Deuteronomy, III, 1), we can read about the colossal stature of this king. French researcher Pascal Cazottes makes the comparison with *Ogmios*, a Galian name of Hercules, which is probably at the origin of our word '*ogre*'.

Among the Greeks, the hero Heracles, with superhuman strength, was

himself probably very tall ; he went to war against other huge men, such Geryon, Cacus or the famous Antaeus.

In the Epic of Gilgamesh, the Sumerian king was opposed to Enkidu, a big and hairy man (maybe a *relict hominid*?). He lived with wild beasts. Then as they became friends, Gilgamesh and Enkidu went to fight against a terrifying giant, *Huwawa*.

Closer to us, in space and in time, the bones of a 2 m tall Celtic giant Celtic were found in 1987 in Blieskastel, a small town in the Saarland [3].

All this relates to rather tall or huge men. Therefore, the Giants of Antiquity, or the more recent ones, are part of the natural variability of *Homo sapiens*, yesterday and today. Everything ultimately depends on the perspective in which we are placing ourselves... For a professional basketball player, 2 m it is almost the minimum size !

Anatomical and biological criteria

If we open a popular book, like the "*Guinness Book of Records*", we can easily have a glimpse on human variability.

The tallest man in medical history was the American Robert Wadlow, who died in 1940, it reached 2.72 meters. The tallest living man was long time Radhouane Charbib, from Tunesia, with 2 meters and 359 millimeters. He was now dethroned by a Chinese, Xi Shun, for only 2 millimeters more !

The doctors who examined Xi Shun in 2005 found no evidence of *acromegaly* (pathological hypertrophy of the bones of the face and of the limbs). We never knew why Xi Shun started to grow up. Until the age of 14, he had a normal size for his age, and then he grew until 2 meters and 361 millimeters. Recruited by the Chinese military for its basketball talent, he has now returned to live as a shepherd in Inner

Mongolia [4].

What tell us biological science about such giants ? Man is not alone in developing such large forms. We know the example of domestic animals : dogs, horses and rabbits, especially, show considerable variability in size. This can range from simple to double !

Moreover, there are "laws" (or *general principles*) in Biology.

There is the law of Cope (or law of *non-specialization of stem forms*). Any ancestral form shows anatomical characters that can give rise to various specialized types, appearing later in the history of the same phylum.

This means that we must seek the origin of each group in a so-called 'generalist' ancestral form. Given as an example [5] is *Phenacodus*, a condylarthre mammal of the Paleocene (55 million years here), probable ancestor of *both* herbivores and carnivores mammals !

In the theoretical framework of « Initial Bipedalism », Man appears to be the ancestral form of other primates – even of mammals as a whole. Indeed, it is conceivable that there has been a gradual differentiation in different lines – including condylarths – from an original lineage of mammalian bipeds, issued themselves from a previous aquatic stage [6].

Let us remember here that ancestral forms are necessarily *non-specialized*.

A second biological law is the *Law of specialization in lineages*. It can be illustrated by the example of the *Equidae* (horses). It is generally assumed that this family originated from the condylarths mentioned above. They were characterized by the possession of members with 5 fingers and toes, suitable for plantigrade gait. At lower Eocene (50 million years ago), the first equine known is *Hyracotherium* (*Eohippus*), of small size (equal to a fox), with 4 fingers or toes. Thereafter there is a general trend of increasing size and reduction of fingers and toes. This went hand in hand with a specialization of the teeth : horses become eaters of grass in the meadow.

When we reconstruct the history of a plant or animal phylum, one is struck by the phenomenon of progressive *specialization* that causes the appearance of secondary lines, arranged on the main axis of the phylum, like twigs around a tree .

We inevitably think here of *Australopithecus*, and more precisely of the *robust australopithecines* whose jaws and teeth had become huge and massive, because of the food specialization. Indeed they nourished on large amounts of tough plant materials : nuts, roots and tubers.

A third biological law is that *of the increase in size* in evolutionary phyla, also called *Law of Depéret*. There is generally an increase in size of the representatives of the same branch, beginning from the oldest up to the newest forms. The classic example is that of the *Titanotheriidae* described by HF Osborn in 1929. We note a clear increase in size by gradually changes from one form of the lower Eocene, *Eotitanops*, to a form of the Oligocene, like *Brontotherium*, through *Protitanotherium* and *Manteoceras* during the upper Eocene. In addition, the increase in size is accompanied by progressive development of nasal protrusions resembling pair horns.

Similar examples can be found, particularly among dinosaurs, whose lines of the Mesozoic Era tended to produce forms ever larger !

Of course, this can be explained by a simple imperative : the more one becomes large, and the less it's vulnerable to predators... unless they also grow, as it was the case, for instance, of *Tyrannosaurus rex* !

In many groups, dwarf forms can intervene locally. We know the dwarf elephants (*Elephas melitensis*) in the Pleistocene of Sicily, Malta and Cyprus.

In 2004, paleontologists found a dwarf form of the human branch, *Homo floresiensis*, but in this article we will focus our attention on giant primates : *Gigantopithecus*, *Meganthropus* and... *Homo sapiens* (*in parte*)!

In any case, the application of biological rules, as listed above, refers to

Giants rather as specialized forms, arrived at the end of their evolution, on divergent branches of our lineage. It is thus difficult to imagine, as some would admit it, that such Giants were at the origin of our lineage or even of our civilization !

But there is still a troubling mystery we're dealing now...

The mystery of the elongated skulls

Such skulls are mainly known by the photographs of Robert Connolly in 1995 [7]. What attracts the attention is not only their elongated shape, but also their size, and consequently, the volume of cranial cavity !

We think of other examples of "bandaged heads", like in Nubia, in ancient Egypt, but also in China or even in Europe : Kronberg (Austria), where 9 specimens were dated from the 5th century.

In the Museum of Lima (Peru), we can see more famous elongated skulls, from the civilizations of Paracas and of Nazca (200 BC – 600 AD). What is amazing, is not only their deformation in length, which can be performed in young babies by the use of rods and strips, but especially the reality of skulls with amazing *brain volumes*, nearly double of the normal volume (1500 cm^3) !

There is indeed a biological problem, because we can certainly stretch the skulls of newborns, but even only by flattening the forehead – which cannot increase cranial capacity by double !

As medical literature is concerned, the record for a normal *Homo sapiens* skull is around 2000 cm^3 . But the elongated skulls of South America would present cranial volumes of 2200 to 2500 cm^3 , up to 3200 cm^3 !

The only possible explanation is that these skulls – even if they were normal and not deformed – may already have presented a brain capacity far superior to ours...

Unless by involving a mysterious genetic mechanism that would make grow a huge head on a normal body, the evidence would be that we are here in presence of skulls of ***real giants*** !

It can be supposed that those men were indeed very huge, between 2,3 and 2,6 meters.

This would certainly fit into human variability, but it becomes very interesting, as many individuals are concerned. This makes it possible to assume that we are in presence of a particular lineage !

And this comes to remind us a story that relates Jean-Philippe Camus (in his article "Le Règne des Géants") : « *The Spanish chroniclers of the conquest of Peru have left us surprising accounts. The Dominican Reginaldo de Lizarraga, who lived in Peru from 1555 to 1559 and wrote about "Descripcion y poblacion de los Indios", reported a myth referring to beings of incredible stature. Furthermore, Cieza de Leon told the story of an invasion of giant, narrated by the natives of Santa Elena, in today Ecuador State : From the sea arrived on boats of balsa and straw as large as vessels, men so immense that an ordinary man of good stature only stood up to their knees* ».

Did these giants coming from the sea have a relationship with the enigmatic elongated skulls from Peru and Mexico ? This is the question that may be asked here.

Conclusion

By studying Giants, we must remember that :

- 1) Even if stories about Giants are based on some truth, historical facts may have been truncated or exaggerated.
- 2) The characteristics of a single large warrior – or war chief – could have been related to an entire people.
- 3) Not only in modern times, 'giant' bones are likely to be founded... Some occasional discoveries of big animal remains, as

Dinotherium, may largely contributed to the myth of Giants in old times.

- 4) Some authors may have intentionally or unintentionally confused the designations of giant primates (like *Gigantopithecus*) and supposed giant men (*Homo*), chronologically situated before us, to sit a theory that we descended ourselves from Giants.

Many doubtful – or completely invented – reports, like the alleged discovery of mummified giants in caves in Tibet or elsewhere, encumber in fact our historical chronicles...

As a matter of fact, untill we really discover true remains of Giants in prehistoric tombs, an interesting trail to follow is, in any case, that of the deformed skulls of large brain capacity, found in Peru and Mexico !

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