**PARAPITHECUS**

 **TAXONOMIC CLASSIFICATION**

**Order: Primate; Sub-order: Haplorrhine; Infraorder: Anthropoidea**

**Series: Catarrhine; Superfamily: Hominoidea; Family: Parapithecidae**

**Taxonomic Classification:**

**Kingdom**

Parapithecus is an extinct genus of primate that lived during the Early Oligocene. The first fossil of Parapithecus was unearthed from the Jebel Qattrani formation of Fayum province of Egypt at the eastern edge of the Sahara Desert in 1907 by Richard Markgraf and was named as *Parapithecus fraasi*, meaning 'next to an ape' in 1910. Later on, another fossil named as *Parapithecus grangeri* was unearthed from the same deposit by E.L.Simons and his team.

The Parapithecus were small basal anthropoids. This cranium is larger than the size of the cranium of its contemporary and close relative Apidium phiomense. It is about the same size as that of the gray gentle lemur. They retain a small brain. The skeletal features are characterized by presence of small and less frontally developed orbits*,* bony partition behind the eye sockets, fused mandibular symphysis, fusion of metopic suture, formation of auditory aperture by tympanic ring, etc. The dental formula of the Parapithecids was 2.1.3.3/0.1.3.3,

The unique characteristics of this genus are that they were devoid of lower incisors and that the symphysis was fused. Comparatively small orbits and size differences in jaws and teeth show it was both diurnal and dimorphic. This is the only specimen of the species that shows (from sockets) that there were four small upper incisors. Like other early anthropoideans this species possessed a lower encephalization quotient and less-developed orbital frontality than later anthropoideans.

 Parapithecus were belief to have the direct ancestral relationship with cercopithecids and can be considered as a representative of early anthropoids of monkey grade.

DRYOPITHECUS

 **TAXONOMIC CLASSIFICATION**

**Order: Primate; Sub-order: Haplorrhine; Infraorder: Anthropoidea**

**Series: Catarrhine; Superfamily: Hominoidea; Family: Homonidae; Tribe: Dryopithecini; Genus: Dryopithecus.**

Dryopoithecus is a genus of great extinct apes from the middle-late Miocene boundary of Europe of around 12.5-11.1 million years ago. In 1856, the first fossil evidence of Dryopithecus was found in the south of France near the village of Saint Gaudens. The geological time period has been estimated to be from 13 million to 10 million years ago. The fossil of Dryopithecus was described by E. Lartet and he attributed the name *D. Fontani* after the name of its discover M.Fontan. The fossil finds consist of several mandibles and a part of humerus. Later on, several fossils were recovered from Spain, Hungary and other places of Europe.

 Dryopithecus teeth are most similar to those of modern chimps. The sizes of the teeth are large with interlocking canines. The molars are wide, and the pre-molars are wider. Diastema is present. The roof of the mouth was wide with a long muzzle and a large nose which is oriented nearly vertically to the face. They have a slender jaw indicating that they were not well adapted of eating hard food. One of the most important features of the 3rd molar of Dryopithecus is the presence of *Y-5 cusp pattern*. This pattern is similar to the great apes and man and supports the argument that it may be the common ancestor of both apes and man. The face was downward, similar to chimpanzees and gorillas. The opening of the tear ducts anteriorly, with a relatively wide interorbital pillar are also similar to African apes. The post cranial evidences of Dryopithecus are not well documented, but the forelimbs and feet are reasonably close to great apes and humans. The morphology of the fingers and elbows indicate well developed suspensionary capabilities with wide ranges of joint mobility. Wrist and foot bones also indicate mobility similar to the modern hominoids. The skull has also some characteristics that are more advanced than the earlier hominoids. According to some paleoanthropologists, Dryopithecus migrated to Europe around 8 mya and then in Africa, and they gave rise to the ancestors of chimpanzee, gorilla and humans.

PITHECANTHROPUS ERECTUS

The first type specimen of the P.erectus consisting of a skull cap and few teeth were discovered by Dutch anatomist Eugene Dubois and his team from the bank of the [Solo River](https://en.wikipedia.org/wiki/Solo_River) at [Trinil](https://en.wikipedia.org/wiki/Trinil), in [East Java](https://en.wikipedia.org/wiki/East_Java) in 1891. Initially Dubois named the species as *Anthropithecus* meaning *man-ape* but later in 1892*,* after the recovery of a femur which possesses features that suggest their capabilities of standing erect, he renamed the specimen as *Pithecanthropus erectus*, meaning *an ape like man that can stand erect*. Later on, several fossils of pithecanthropus were recovered from different parts of Southeast Asia, more particularly from China and Indonesia. Considering the close similarities among the different varieties of Pithecanthropus discovered from different parts of world, Ernst Mayr brought all these varieties under the common name *Homo erectus.* Some of the characteristics of the skull of Pithecanthropus erectus are :.

 The length of the skull is 185cm and the breadth is 130 cm and the cranial index is 70. The cranial capacity is estimated to be around 850cc. The frontal lobes of the brain are slightly larger than apes, but smaller than the man. The vault of the skull is relatively low with marked frontal recession and occipital angulations. The frontal bone has a median keel, but lacks any trace of sagittal crest. The face is less prognathic than Australopithecines and H.habilis. It is more akin to the modern humans. The nose is broad. No chin is seen as in apes. They have protruding brow ridges, which are continuous and fuse to form a massive torus. The teeth are of enormous size. The roots are similar to the apes which are widely separated. The mastoid process is small, but large in other varieties of Pithecanthropus. The zygomatic bones are smaller.

**NEANDERTHAL MAN**

Neanderthals are our closest extinct human relatives who lived in between 400,000- 40,000 years ago during the Pleistocene Epoch. The name Neanderthal derives its name from the Feldhofer Cave of Neander valley, near Dusseldor, Germany from where its fossil was first recovered in 1856. Later on, towards the end of the nineteenth century and in the beginning of the twentieth century, several fossils of Neanderthal man were discovered from Belgium, Croatia, France, Italy, Hungary, Israel, Cech republic, Uzbekistan, Iraq, Netherlands, Greece, Spain, and Siberia. Some of the characteristics of Neanderthal man were:

The cranium was low-vaulted, with large orbital and nasal openings, and prominent brow ridges compared to the modern man. The occipital region of the skull was more pronounced than the modern man. The incisors and canines were larger than the modern humans, but the molars and the premolars were of similar size. The average cranial capacity of male and female Neanderthals were 1600 cm3 and 1300 cm3, respectively which were more or less similar with modern man. The chin was less protruding but robustly built. The mental foramen in the mandible was placed farther back in the Neanderthal compared to modern humans. The average height of Neanderthal males and females were 164 to 168 cm and 152 to 156 cm, respectively. The average weight is 77.6 kg for males and 66.4 kg for females. In general, they possessed relatively short lower limbs compared to the upper limbs. They have very long clavicles, broad shoulders, barrel-shaped or bell-shaped rib cage, large, wide shoulder blades, more laterally curved radius, larger round finger tips, bowed shaft of the thigh bones, short tibiae and short fibulae.

**CRO-MAGNON MAN**

The Cro-Magnon man was discovered in 1868 by Louis Lartet from a shallow cave at Cromagnon near the town of Les Eyzies-de-Tayac in the Dordogne region of Southwestern France. The fossil remain consist of four adult skeletons, one infant and some fragmentary bones along with vast stone and bone implements and art objects. Later on, several fossils similar to Cro-Magnon man were discovered from different parts of Spain, Germany, Italy, Russia, Western Asia, China and all over Africa. The geological age of the fossils recovered from the Les Eyzies is estimated to be around 40000 years old.

 The physical characteristics of Cro-Magnon man exhibit similarities with modern humans, with fewer exceptions. They differ from modern humans in having a more robust physique and slightly higher cranial capacity. Their cranial capacity, which was estimated as 1600 cc was higher than the average cranial capacity of modern man. The skull is comparatively low with wide faces, having robust mandibles, blunted chins and narrow noses. No prominent pragnathism is seen in face and jaws. A distinctive trait of the Cro-Magnon man was the rectangular orbits which is similar with that of the modern Ainu people. The average height of Cro-Magnon man ranges in between 1.66m to 1.71m. Their vocal apparatus was similar to modern day humans which suggest that they could speak.