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MON TUE WED THR FRI SAT SUN

Dr. Rajesh Verma, Assistant professor and Head, U.G. Department of Zoology, O.K. College. Common Notes for B.Sc part 3rd, paper VII.

Q:- Write Note on Fossil History of man?

Ans:- Human evolution :-

Human evolution is the evolutionary process that led to the emergence of anatomically modern humans, beginning with the evolutionary history of primates - in particular genus Homo - and leading to the emergence of Homo sapiens as a distinct species of the hominid family, the great apes. This process involved the gradual development of traits such as human bipedalism and language, as well as interbreeding with other hominins, which indicate that human evolution was not linear but a web.

The study of human

disciplines, including physical anthropology, primatology, archaeo-logy, paleontology, neurobiology, ethology, linguistics, evolutionary psychology, embryology and genetic studies show that primates diverged from other mammals about 85 million years ago, in the late cretaceous period, and the earliest fossils appear in the Paleocene, around 55 million years ago.

Within the superfamily Hominoidea, the family Hominidae diverged from the family Hylobatidae some 15-20 million years ago; subfamily Homininae (African apes) diverged from pongine (orangutans) about 14 million years ago; the tribe Hominini (including humans, Australopithecus, and chimpanzees) parted from the tribe Gorillini (gorillas) between 8-9 million years ago and, in turn, the

the subtribes Hominina (humans and extinct biped ancestors) and panina (chimpanzees) separated 4-7 million years ago.

Bipedalism :-

Bipedalism is the basic adaptation of the hominid and is considered the main cause behind a suite of skeletal changes shared by all bipedal hominins. The earliest hominin, of presumably primitive bipedalism, is considered to be either Sahelanthropus or Orrorin, both of which arose some 6 to 7 million years ago. The non-bipedal knuckle-walkers, the gorillas and chimpanzees, diverged from the hominini line over a period covering the same time, so either Sahelanthropus or Orrorin may be our last shared ancestor. Ardipithecus a full biped, arose approxi-

-mately 5.6 million years ago.

Encephalization :- The human species eventually developed a much larger brain than that of other primates - typically 1,330 cm³ (81 cu in) in modern humans, nearly three times the size of a chimpanzee or gorilla brain. After a period of stasis with Australopithecus afarensis and Ardipithecus species which had small brains as a result of their bipedal locomotion, the pattern of encephalization started with Homo habilis, whose 600 cm³ (37 cu in) brain was slightly larger than that of chimpanzees. This evolution continued in Homo erectus with 800 - 1,100 cm³ (49-67 cu in), and

reached a maximum in Neanderthals with 1,200 - 1,900 cm^3 (73 - 116 cu in), larger even than modern Homo sapiens. This brain increase manifested during postnatal brain growth, far exceeding that of other apes (heterochrony).

See also :-

- Adaptive evolution in the human genome
- Amity - enmity complex
- The Ancestor's Tale
- Archaeogenetics
- Dawn of Humanity (book)
- Dual inheritance theory
- Dysgenics
- Evolution of hair
- Evolution of human intelligence
- Evolution of morality
- Evolutionary medicine
- Evolutionary neuroscience
- Evolutionary origin of religions
- The Fall of the Earth
- Human behavioral ecology
- Human evolution (origins of society)
- Human origins
- Human vestigiality