

Louis Leakey and Mary Leakey

The First Family of Palaeoanthropology

Rajan Gaur

Louis and Mary Leakey are two famous palaeoanthropologists and archaeologists of the twentieth century whose discoveries have had a major influence on our understanding of human evolution. These discoveries were spectacular and brought popular attention to the field of palaeoanthropology, though at times they also courted controversies. Though, debate on the proper interpretation of many of the fossil hominid finds made by them continues even today, no one questions their tremendous contribution to our knowledge about evolution of humankind. This article is focussed on their life and works.

Introduction

Ever since Darwin published his monumental work in his book ‘*On the Origin of Species*’ in 1859, the idea of evolution has gradually caught the imagination of the scientific community. However, it took a while for the concept of human evolution to be accepted, in the face of the millennia-old and deeply entrenched biblical view of the universe as a static representation of God’s creative device. Before Darwin’s theory, most scholars believed the explanation of Archbishop James Ussher of Armagh, Ireland and John Lightfoot (Vice Chancellor of the University of Cambridge), who in the early 1600s had deduced from a careful study of the Bible that earth had been created at 9 o’clock on October 23, 4004 BC. By the middle of the nineteenth century, fossilized remains of human ancestors had begun to be unearthed from various localities in Europe.

One of the earliest was perhaps some cranial and limb bones recovered in 1856 from the limestone cave in ‘Neander Valley’ near Düsseldorf, Germany, which, a few years later, were referred to as the ‘Neanderthal Man’ (or, *Homo neanderthalensis*,



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Keywords

Palaeoanthropology, human evolution, Louis Leakey, Mary Leakey, Africa, Olduvai gorge, fossil hominids.



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a name first used by an English geologist William King in 1864). For a major part of the 19th century, most discoveries of human fossils were reported from Europe. It was in 1892 that Eugene Dubois, a Dutch doctor working in the army in Dutch East Indies (now Indonesia), reported the first hominid from outside Europe and named it *Anthropopithecus erectus*, popularly known as the 'Java Man' (subsequently named as *Pithecanthropus erectus* and finally as *Homo erectus*).

In the 1920s, several hominid finds were reported from Zhoukoudian in China (named as *Sinanthropus* by Davidson Black in 1927 and now known as *Homo erectus*). Thus, for some time (even beyond the first quarter of the twentieth century), after the discoveries from Java and Zhoukoudian in China, it was believed that humans had had Asian origins and Asia was the cradle of human evolution. The discovery of the fossil skull of a baby from a lime quarry at Taung in the Northern Cape, South Africa by Raymond Dart in 1924 was a significant palaeoanthropological event. This find was published as *Australopithecus africanus* in 1925 in *Nature* as the first evidence of an early fossil link between the apes and humans and Dart boldly proposed Africa as the cradle of humanity, a claim that was largely dismissed by scholars at the time. This find was dismissed as a relative of either a chimpanzee or a gorilla with little bearing on human ancestry, more so, because the specimen was of a child and for the authorities of the time, the matter was not even worth discussing until an adult specimen was discovered [1].

In the middle and late 1930's, fossil remains of adult hominid ancestors were discovered by Robert Broom from South African cave deposits (*Australopithecus transvaalensis* from Sterkfontein in 1936 and *Paranthropus robustus* from Kromedraai in 1938), which lent support to Dart's contention. However, it was the efforts of Louis and Mary Leakey, the patriarchs of the first palaeoanthropology family, which conclusively brought into spotlight the significance of Africa as the cradle of humankind. *Figure 1* shows the timeline of the evolution of the genus *Homo*.



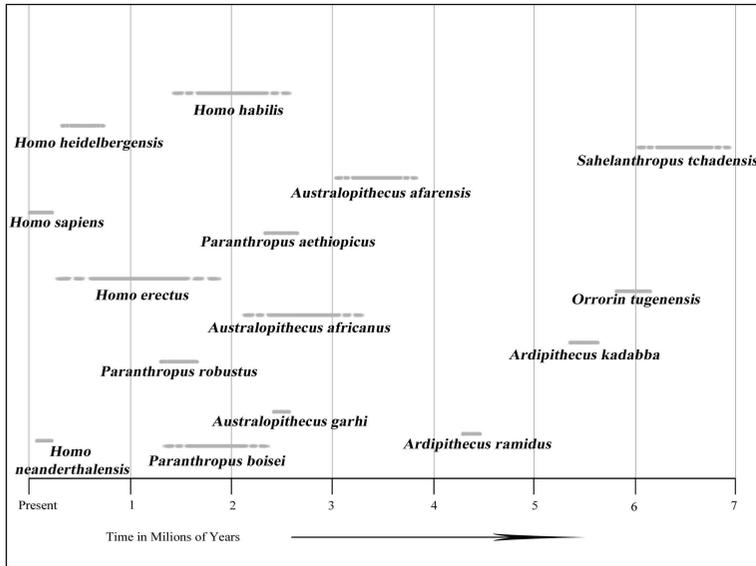


Figure 1. Evolutionary time-line of the hominids.

With this background, the readers will be able to better appreciate the life and works of Louis and Mary Leakey, two of the pioneers of palaeoanthropology and archaeology of Africa, which are being presented here. Louis and his wife Mary Leakey are known worldwide for their several landmark discoveries in Africa connected with early human evolution. Their discoveries helped to shift the opinion of the scientific community to the notion that the earlier phases of human evolution happened in Africa.

Louis Leakey

Louis Seymour Bazett Leakey was the patriarch of a family that stands out due to its profound contributions to the field of palaeoanthropology and archaeology in particular; a family that has dominated the field of anthropology as no other before. The members of the Leakey family have made crucial discoveries which have fashioned our understanding of human origins and evolution. It would not be an exaggeration to state that very few people have had more influence on human origin studies than the passionate, enthusiastic, brilliant and sometimes unconventional and controversial Louis Leakey. Besides palaeoanthropology, he made significant contributions to palaeontology, primatology and archaeology of Africa.

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Early Years

Louis Leakey was born at Kabete, near Nairobi, Kenya on August 7, 1903. His British parents, Harry Leakey and Mary Leakey, were missionaries sent to live among the Kikuyu, the largest tribe of Kenya. As a child, Louis lived among the Kikuyu and learned their language and culture. He grew up in conditions which most people would consider as rough and his first home just had a thatched roof. These early tough experiences probably helped him face the harsh work environments at fossil localities. All through his life, he remained a supporter for the cause of the Kikuyu. In his childhood, Louis was more interested in studying birds and while searching for birds in the Kenyan bush he stumbled upon stone artefacts in river beds at the age of 13 years. These initial finds were to shape his lifetime interest in human origins.

Education and Family Life

In 1922, Louis went to study in England at St John's College, Cambridge University. There he was not very popular for several reasons: his peculiar accent that was tinted with the Kikuyu rhythm, his unique gait, his shyness and his strange stories of life in Kenya [2]. He was forced to postpone his studies on account of a head injury suffered during a rugby match, which doctors diagnosed as post-traumatic epilepsy [2]. With no cure known at the time, he was advised prolonged rest away from Cambridge. In a way, the injury was to shape his destiny that would lead him to become a legendary figure in palaeoanthropology. While recovering from the injury, he left England to take up the management of a palaeontological expedition sponsored by the British Museum of Natural History in what is now Tanzania. He later returned to England in 1925 to resume his education and graduated from Cambridge University in 1926 with degrees in archaeology and anthropology.

Soon after graduating, Louis set out for his first archaeological expedition in East Africa. It is interesting to note that a year



before, Raymond Dart had reported the discovery of first hominid fossil (*Australopithecus africanus*, also popularly known as Taung Child) from the African continent. Louis's main aim was to find the earliest fossils of *Homo*, a genus to which we belong. Contrary to prevailing beliefs of the day that humanity originated in Asia, Louis was of the firm belief that man had arisen in Africa – a notion originally put forward by Charles Darwin. However, for the subsequent nearly two decades, his expeditions could recover mainly stone tools and no early hominid fossil was found. His works, nevertheless, attracted admiration and he was awarded a doctorate degree in 1930.

Meanwhile, in 1928, Louis Leakey married an English lady, Farida Avern, whom he had met in Africa, and the couple had two children. This marriage did not last long and when Farida Avern was pregnant with her second child, Leakey left her and married Mary Nicols in 1936 [3]. Louis had met a very young Mary Nicols in England in 1933. She had been introduced to Louis by Canton–Thompson at the Royal Anthropological Institute. Impressed by her talents, Louis invited her to illustrate for his book *Adam's Ancestors* (first edition, 1934, Box 1). Mary was shy and intelligent while Louis was charming, gregarious and very charismatic. Mary was a distant relative of John Frere, who had done pioneering work on the stone tool culture of Europe and she had had a very unconventional education before becoming a promising archaeologist. She became his field assistant [4].

They soon struck a chord and the ensuing affair culminated in marriage. This launched the beginning of what would prove to be a mutually beneficial and scientifically a very rewarding relationship. Who knows, without this union, some of the stunning hominid fossil discoveries from East Africa could still have eluded the scientific community. At that time, Louis's marriage with Mary was not taken very kindly. A year after their marriage, Louis returned to Africa to conduct a detailed ethnological study of the Kikuyu tribe. Louis and Mary Leakey had three sons: the eldest Jonathan (born in 1940), the middle one Richard (born in 1944), and the youngest Philip (born in 1949).

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During World War II, Louis Leakey also worked for the British intelligence [2]. But in between his wartime duties, whenever he got time, he and Mary continued their archaeological and palaeontological work in Kenya. Louis was made honorary curator of the Corndon Museum in 1941 (the museum was subsequently renamed as the Kenya National Museum). In 1945, he joined as a curator of the museum, a job that was not highly paid but allowed him to continue his archaeological and palaeontological work in Kenya. He successfully organised the first Pan-African Congress of Prehistory, which not only enhanced his reputation but also gave him a chance to showcase his work that he has been doing in Kenya and Tanzania, since the early 1930s.

Major Discoveries

Proconsul africanus

One of the important early discoveries made by Louis and Mary Leakey includes an early Miocene ape, *Proconsul*. During their expedition of 1947–1948 to Rusinga Island in Lake Victoria, Kenya, they uncovered a complete fossil skull of *Proconsul* in 1948 – the first Miocene ape described from Africa [5]. Though the genus had been identified earlier, Leakey’s find was particularly complete with lower and upper jaw, complete dentition and a major part of the cranium. Moreover, it happened to be the first ape skull to be found from Africa. Louis named it *Proconsul africanus*, a name that remained for the find for several decades, until it was reclassified as *Proconsul heseloni* in 1993 by Alan Walker [6]. *Proconsul* is one of the best represented Miocene hominoids in fossil records. It lived from approximately 23–14 million years ago. The Rusinga *Proconsul* skull find gave Leakeys some attention and also led to more funding to continue their explorations.

Zinjanthropus boisei

Subsequent to the Rusinga *Proconsul* find, it took more than a decade for the Leakeys to make another landmark discovery. On



July 17, 1959, Mary Leakey unearthed the remains of a human cranium (nicknamed ‘Nutcracker Man’) eroding out of a site named FLK Zinj, about 22 feet below the upper limit of Bed I at Olduvai Gorge, Tanganyika (now Tanzania) [7]. Incidentally, on that day, Louis Leakey had stayed back at the camp due to fever and a headache. Subsequently, the Leakeys found nearly 400 fragments which were put together resulting in a nearly complete skull. It was a robust specimen that was not greatly different from the finds of Raymond Dart and Robert Broom from South Africa. But Louis Leakey thought it was different enough and published the find in *Nature* in August, 1959 as *Zinjanthropus boisei*; Zinj, after the ancient name of East Africa as a whole and boisei in honour of Charles Boise, who had been funding the Leakeys’ projects since 1948. Stone tools were also reported from the same bed, on the basis of which, Leakey concluded in the paper, “...new find represents one of the earliest Hominidae, with the Olduvai skull as the oldest yet discovered maker of stone tools” [7]. A date of 1.75 million years was suggested for the find. Although the tools were later attributed to *Homo habilis*, this find helped to establish the long-held view of Louis Leakey that Africa, rather than Asia, was the cradle for human evolution.

After this discovery, researchers began to define the roots of human lineage back to Africa, as was once suggested by Charles Darwin. This discovery made the Leakeys a household name and also brought in much needed funding from the *National Geographic*, which permitted the Leakeys to significantly increase the scope of their work. *Zinjanthropus boisei* was eventually referred to as *Paranthropus boisei* [5].

Homo habilis

Another landmark discovery by the Leakeys is that of *Homo habilis* (‘handy man’). *Homo habilis* is a species of the genus *Homo* that lived during the Pleistocene period, between roughly 2.8–1.5 million years ago [8]. The first specimen of this hominid (designated as OH 7) was discovered by Mary Leakey and her eldest son, Jonathan, from a site very near to the *Zinjanthropus*

The Leakeys found nearly 400 fragments which were put together resulting in a nearly complete skull.



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site in the Olduvai Gorge of Tanzania. In 1964, Louis Leakey, along with Philip Tobias and John Napier, published the find in *Nature* as *Homo habilis*, a name that was suggested by Raymond Dart [9]. Leakey believed that *H. habilis* was the first member of the genus *Homo* and a true tool maker and it coexisted with *Zinjanthropus*. In this paper, Leakey and colleagues conclude, “...two different branches of the Hominidae were evolving side by side in the Olduvai region during the Upper Villafranchian and the Upper part of the Middle Pleistocene” [9]. Though interpretations of Leakey’s discoveries are still controversial, it cannot be denied that they had a great significance for studies of human origins.

Early in his career, Louis courted a controversy that did not do much good to his reputation. In 1932, Leakey discovered fossils at Kanam and Kanjera in East Africa, which he claimed as the oldest direct ancestors of modern humans and a proof for the origin of humanity in Africa. But he was unable to show the site, when asked, due to inadequate documentation [10]. In fact, the stratigraphic provenance of these finds was not certain and subse-

Box 1. Major Works of Louis Leakey

Dr Louis Leakey was a prolific writer who wrote a number of books, beginning 1931. Some of his important books are listed below.

The Stone Age Culture of Kenya Colony (1931)

Adam’s Ancestors: The Evolution of Man and His Culture (1934)

The Stone Age Races of Kenya (1935)

Stone Age Africa (1936)

White African (1937)

Olduvai Gorge (1952)

Mau Mau and the Kikuyu (1952)

Animals in Africa (1953)

Defeating Mau Mau, (1954 with Peter Schmidt)

Olduvai Gorge, 1951–61 (1965)

Unveiling Man’s Origins (1969, with Jane Goodall)

Animals of East Africa: The Wild Realm (1969)

By the Evidence: Memoirs, 1932-1951 (1974).



quent studies indicated that these were not much different from anatomically modern humans and the specimens came largely from sub-recent terraces above the recent lake level [11].

Other Interests

Besides archaeology and palaeoanthropology, Leakey had an interest in African palaeontology and he discovered several new fossil taxa of lizards, beetles, gastropods, ostriches, carnivores, rhinoceroses and other mammals. In addition to looking for tools and hunting for fossils, Leakey was also interested in primatology. He believed that one of the keys to sorting out mysteries of human evolution was to study and understand living primates in their natural habitat. He inspired and helped three researchers – who were to later become doyens in the discipline of primatology – to take up research on living apes. The first of these three was Jane Goodall who in 1957 initiated her work on chimpanzees in the Gombe Stream National Park in Tanzania. The second was Dian Fossey who in 1967 started her study of mountain gorillas in Rwanda. And the third was Biruté Galdikas who began her work in 1971 on orangutans in Borneo. These three ladies were the forerunners in living among the great apes to observe their behaviour. They are together popularly known as ‘Leakey’s Angels’.

Through 1960s, Louis became increasingly involved in lecturing, travelling, mentoring young researchers and fund-raising, mostly in the US, where he was very popular. During these years, he turned over most of the archaeological and palaeoanthropological exploration work to his wife, Mary. In the last years of his life, the relations between Louis and his wife Mary remained estranged [12]. At the age of 69, on October 1, 1972, Louis Leakey died of a heart attack in London.

Mary Leakey

Mary (Nicol) Leakey, archaeologist and anthropologist, is best known for her explorations at the Olduvai Gorge of Tanzania. Along with her husband, she made several stunning discoveries,

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Mary's major discovery was however in 1959 when she found *Zinjanthropus boisei* (now *Paranthropus boisei*) from Bed I at Olduvai Gorge, Tanzania.

which helped to focus the world's attention on Africa. The discoveries she made not only suggested that human ancestors arose in Africa but also that human ancestry extended farther back in time than understood then. Her discovery of the footprints at Laetoli pushed back the date of bipedal locomotion to nearly 3 million years. No wonder that Mary and her husband Louis Leakey are often referred to as the first family of palaeoanthropology.

Early Years

Mary Douglas Nicol was born on February 6, 1913 in London. Her father, Erskine Nicol, was a painter whose professional work took him to various countries, such as Switzerland, Italy, France, etc. Mary also moved along with the family and her formal education was limited. In France, she could visit cave art sites and meet famous pre-historians along with her father and thus developed an abiding interest in archaeology. She was only 13 when her father died unexpectedly in France and Mary returned to England along with her mother. This trauma and other changes affected her and she was twice expelled from school due to her rebellious nature.

She did not pursue a formal university degree. Instead, Mary began participating in archaeological expeditions. She had a natural artistic flair and she worked as an illustrator for an archaeological expedition in England at the age of 17. As noted earlier, she had done illustrations for a book entitled *The Desert Fayoum* by anthropologist Gertrude Canton-Thompson, who in 1933 recommended her at Cambridge to Louis Leakey who was looking for an illustrator for his second book, *Adam's Ancestors*. Louis and Mary eventually got married in 1936 after an affair. The couple then moved to Kenya in 1937 where they continued archaeological and palaeoanthropological work and made several landmark discoveries, most from Oduvai Gorge in Tanzania.

Major Discoveries

As noted earlier, the first major discovery by Mary Leakey was



from Rusinga Island in Lake Victoria of Kenya in 1948 when she discovered the first nearly complete skull with lower jaw and all teeth of an early Miocene ape *Proconsul africanus*. Her major discovery was however in 1959 when she found *Zinjanthropus boisei* (now *Paranthropus boisei*) from Bed I at Olduvai Gorge, Tanzania. Next year, she along with her son, Jonathan discovered a new hominid that was published as *Homo habilis* in 1964 by Louis Leakey and colleagues. In fact, she was instrumental in the discovery of all the major fossil hominid finds from East Africa that made the Leakeys famous. While Mary explored and meticulously excavated, Louis publicised and published the fossil finds. In the 1960's, Louis and Mary Leakey got estranged. After her husband's death in 1972, she devoted most of her time exploring the Olduvai Gorge area.

Mary considered the Laetoli footprints her most significant find which conclusively pushed back the age of bipedalism to over 3 million years.

In 1978, Mary, along with her team, made another landmark discovery, when she found volcanic-ash-filled footprints in the mud deposits at Laetoli. These were dated to 3–3.5 million years old and were made by an upright bipedal hominid, probably *Australopithecus afarensis*. Mary considered this her most significant find which conclusively pushed back the age of bipedalism to over 3 million years [12]. After more than forty years of active field explorations, Mary retired in 1983. She passed away in 1996 at the age of eighty-three years. Mary was a meticulous and thoughtful researcher with bundles of energy and lots of patience and doggedness. She wrote such books as *Olduvai Gorge: My Search for Early Man* (1979), and *Disclosing the Past* (1984).

The Leakey Legacy

After Louis' death in 1972, his wife Mary and son Richard continued to explore East Africa for human ancestors. Richard Leakey also made several stunning finds which included ER 1470, a *Homo habilis* skull in 1972, ER 3733, a *Homo erectus* skull in 1975 and WT 15000 – a nearly complete skeleton of *Homo erectus* in 1984, nicknamed 'Turkana Boy'. Richard's



wife, Maeve Leakey, has also significantly contributed to palaeoanthropological researches and described *Australopithecus anamensis* in 1995 and *Kenyapithecus platyops* in 2001. At present, Louise Leakey, who is Richard and Maeve's daughter and Louis and Mary's granddaughter, is continuing the Leakey tradition.

Today, palaeoanthropology is a fast evolving discipline with new discoveries and new techniques that investigate human origins not only through fossil finds but also molecular biology. As a consequence, some of Leakey's fossil discoveries might have been reinterpreted. But their finds never lost significance as they contributed in defining the roots of human ancestry in Africa and confirmed Africa as the cradle of human evolution — a view that was once considered outlandish but is widely accepted today.

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