

HOBBIT

newly found our tiny ancestor

When scientists discovered the hobbit remains, they thought it was the skeleton of a child. There was no record of human adults that were that small. The discovery of *Homo floresiensis* is considered one of the most spectacular discoveries in paleoanthropology.

The word hobbit reminds us of the tiny creatures that appeared in the famous novel, the Lord of the Ring. Hobbit became even more popular after the production of the award winning film based on one of the books in the series. However, this article is not to discuss about the imaginary hobbit, but to discuss the fossil skeletons of the miniature humans recently discovered. This discovery was done by Australian and Indonesian researchers in a cave in Flores, an island east of Bali, midway between Asia and Australia. The skeleton was named *Homo floresiensis* after the island where it was found.

Directions in human evolution

Paleoanthropologists (scientists who study human fossils), think that the modern humans and the modern apes have evolved into two different directions from a common ancestor who lived nearly five to six million years ago. The four modern apes, Gibbon, Orangutan, Gorilla and Chimpanzees are considered as our closest relatives among other animals. The Chimpanzee shares 98.5% common genes with the modern man.

It has been identified that the hominid fossils belong to two difference Genera. The earlier Genus was named *Australopithecus* (Southern man) because the first

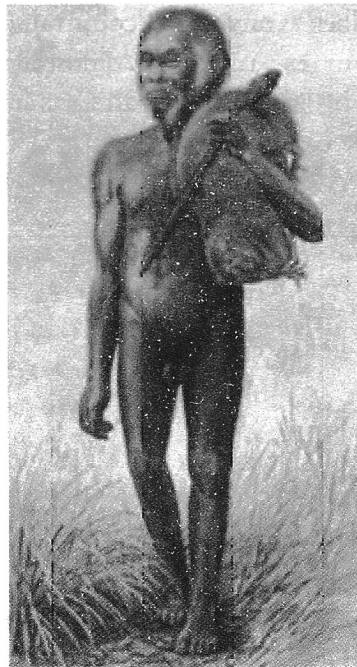
discovered fossil was found in the southern part of Africa. Even these early hominids expressed three important characteristics that distinguished it from apes.

These are

1. Small canine teeth
2. Bipedal walking (walking on two feet)
3. Gradually increasing size of the brain

The most popular fossil belonged to the Genus *Australopithecus* was the female fossil Lucy, discovered in Ethiopia in 1974.

The Genus *Homo*, to which the modern humans belong, evolved two and a half million years after the first emergence of the Genus *Australopithecus*. It is believed that the hominids belonging to both Genera, *Homo* and *Australopithecus*, must have shared the earth for at least half a million years. The significant difference between these two Genera is that the hominids of the Genus *Homo* had considerably larger brain size than the members of Genus *Australopithecus*.



The Genus *Australopithecus* was completely extinct nearly 1.6 million years ago. Subsequently, the Genus *Homo* evolved further to form the modern man. Scientists have identified three major eras of the Genus *Homo*. They are *Homo erectus*, *Homo sapiens neandertalensis* and *Homo sapiens sapiens*, the modern man.

Size of our ancestors

The height of the individuals of the Genus *Australopithecus* ranged from 4 feet to 5' 2". They showed erect posture and walked on two feet. Members of the Genus *Homo* have expressed those

features in a more advanced manner. Their height ranged from 5' to 5'6" on average.

Recently discovered tiny human species *Homo floresiensis*

Paleoanthropologists, and, most of the biologists in general, were surprised at the discovery of the fossils of a tiny human species that lived 13,000 years ago in South East Asia. Scientists believe, with this new finding, the story of human evolution will expand towards new dimensions. The first discovered fossil of *Homo floresiensis* was 1 meter (3 feet) in height and weighed 25 Kg. It was of a 30 year old female who lived 13,000 years ago! Subsequently, a large number of fossils belonging to the same species were excavated from the area.

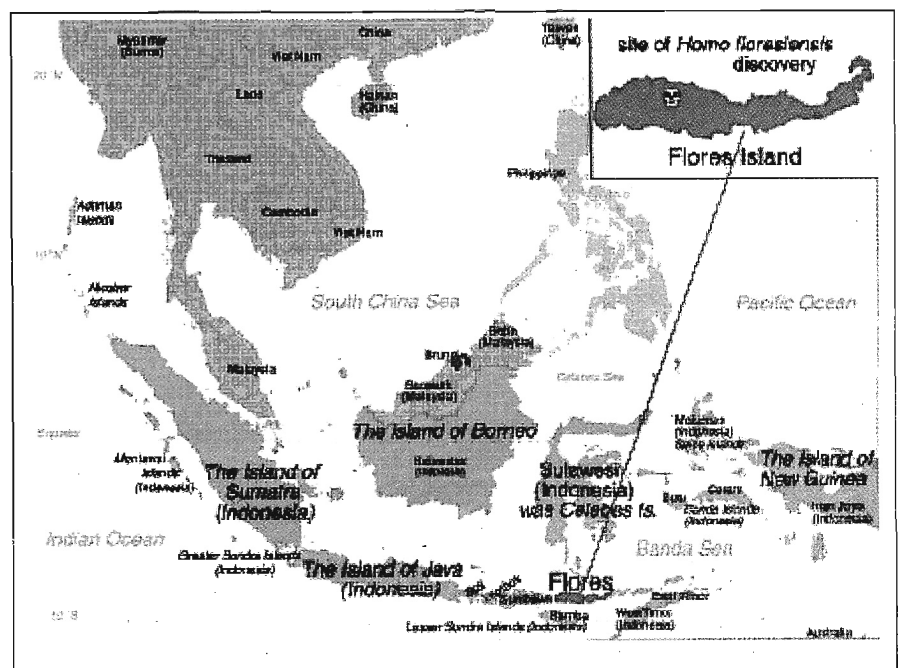
The same sediment where these fossils were found in Flores, contained a large number of stone tools and bones of dwarf elephants, giant rodents and Komodo dragons (lizards that can grow upto 10 feet and living even today). *Homo floresiensis* has been described as one of the most spectacular discoveries in paleoanthropology in half a century. It is, by far, the most extreme human ever been discovered!

“To find that as recently as, perhaps 13000 years ago, there was another upright bipedal, although a small brained creature, walking on the planet at the same time as modern humans is exiting and was unexpected” said Peter Brown, a paleoanthropologist at the University of New England, Australia. “It is totally unexpected” said Cris, the Director of the human origin programme at the Natural History Museum, London. To have tiny humans in the remote island of Flores is surprising enough.

Considering all the facts, the researches estimated that these tiny people may have lived in Flores from 95,000 years ago to at least 13,000 years ago. They base their theory on charred bones and stone tools found in the island. The blades, perforators, points and other cutting and chopping utensils were apparently used to hunt big animals.

Scientists believe that these tiny people had proportionately longer arms than us, sharply sloping forehead, hard and thicker eyebrow ridges but no chin. Though they did not look like modern humans, some of their behaviours may have been surprisingly close to humans.

The Flores people used fire in hearths for cooking and hunted *Stegodon*, a species of primitive dwarf elephant found on the island. Although small, the *Stegodon* still weighed around 1,000 Kg. They would have posed a significant challenge to a hunter of the size of a three-year-old human child. Hunting must have required joint communication and planning, the researchers say. Almost all the animal bones associated with the human artefacts are of smaller animals, suggesting that the tiny



humans selectively hunted the smaller *Stegodon*. The diet of the Flores people also included fish, frogs, snakes, tortoise, birds and rodents.

This recent discovery shows that the Genus *Homo* varied and was more flexible in its ability to adapt than was previously thought. The genus *Homo* also includes modern humans, *Homo erectus*, *Homo habilis*, *Homo sapiens neandertalensis*. All of these are marked by relatively larger brain case, erect posture, opposable thumbs (thumb that can be placed opposite other fingers) and the ability to make tools. "*Homo floresiansis* is an addition to the short list of other human species that lived at the same time as modern humans. I think people will be surprised to learn that not so long ago, we were not alone" said Brown, co-author of the research programme.

Some researchers speculate (assume without hard evidence) that the hobbit and her peers evolved from a normal-size, island-hopping *Homo erectus* population that inhabited Flores around 849,000 years ago. Robert Foley of the Centre for Human Evolution, University of Cambridge says that the hobbit survived along side us for at least 30,000 years and we have not been very amiable eco-companions. The hobbits managed to do some extraordinary things; manufacturing sophisticated stone tools, hunting pygmy elephants and crossing at least two water barriers to reach Flores from the main land, Asia. They did all these, equipped with a brain only 1/3 of the size of the modern human brain! Both these tiny humans and the pygmy elephants appear to have become extinct at the same time as a result of a major volcanic eruption.

Researchers are also anxious to investigate how and why the hobbits came to be so small. When scientists discovered the hobbit remains, they thought it was the skeleton of a child. There was no record of a human adult that small. The most likely explanation is, that over thousands of years, the species became smaller in body size. Dwarfing of mammals on islands is a well-known process and is seen worldwide.

Islands often provides a limited food supply with few predators and few species competing for the same environmental niche. Survival would depend on minimizing daily requirements. However, there is no absolute proof that this is what happened with our tiny ancestor.

This discovery shows us how much we still have to learn about human evolution, particularly in Southeast Asia.

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