# New species of Pleistocene stork found on 'hobbit' island

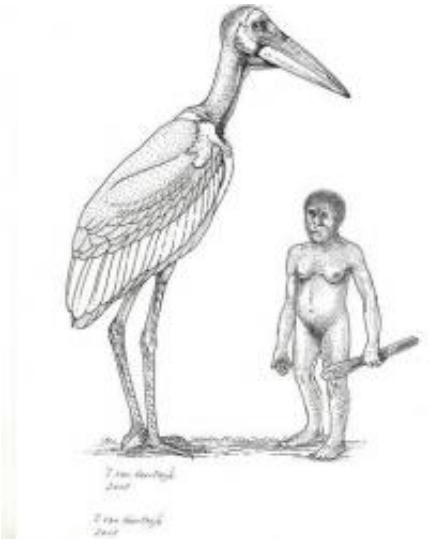
8 December 2010, by Lin Edwards

Marabou Stork (Leptoptilos crumeniferus) in the Oregon Zoo. Image: Wikipedia.

(PhysOrg.com) -- Fossils of a giant Pleistocene stork found on Flores island, Indonesia, belong to a new species according to scientists. The now extinct bird was probably flightless, and lived on the same island as Homo floresiensis, a small hominin species that has come to be nicknamed the "hobbit".

The fragments of fossilized bones were found by Dr. Hanneke Meijer of the Smithsonian National Museum of Natural History in Washington DC and her colleague Rokus Due of the National Center for Archaeology in Jakarta, Indonesia. Dr. Meijer is a paleontologist specializing in fossils of birds found on islands. The giant stork fossils were located in sediments dated at 20-50,000 years old in the Liang Bua cave in which H.floresiensis was found in 2004.

Dr. Meijer said bird fossils are distributed throughout the sediments found in the cave and and provide a unique opportunity to study how birds evolved in an insular environment, including their increasing size and loss of flight. Fossils of other giant species have also been found, including giant rats and lizards, but the island was also home to pygmy elephants as well as the hobbits.



In this undated sketch by Inge van Noortwijk and released by John Wiley & Sons, a six-foot (180 centimeters)-tall giant stork stands next to a dwarf Homo floresiensis that had lived on the remote island of Flores in Indonesia. According to the December 2010 issue of the Zoological Journal of the Linnean Society, fossils of the giant stork, which lived 20,000 to 50,000 years ago, have been discovered on the far-flung Indonesian island that has been home to many extreme-sized creatures, from tiny human-like "hobbits" and dwarf elephants to the world's largest-known rats and lizards. Picture: John Wiley & Sons, Inge van Noortwijk

The extinct marabou stork, Leptoptilos robustus, was around 1.8 meters long and weighed about 16 kg, which makes it larger than modern stork species. It was probably capable of preying on juvenile hobbits, since the adult hobbits were only about one meter tall, but there is no evidence that it did. Modern marabou storks feed mostly on carrion meat but they also eat small mammals, birds, fish

and frogs.

Dr. Meijer said it is not unusual to find large birds on islands, especially if prey species are plentiful and mammalian predator species are scarce, but she said she had not expected to find a giant marabou stork on Flores. The size and weight of the bones suggest the stork was probably too heavy to fly, but it probably evolved from ancestors that flew to the isolated island and colonized it.

Dr. Meijer said the island has always been isolated from other islands in the region and has never been connected to the mainland. She said the isolation had played an important role in shaping the evolution of the fauna on the island.

It is not known why the giant and dwarf species on the island became extinct, but Dr. Meijer said all the fossils of the giant stork, the pygmy elephants and hobbits were found in sediments beneath a layer of volcanic ash, which suggests a volcanic eruption may have caused a major extinction in the region.

The findings, published in the *Zoological Journal of the Linnean Society*, help explain how wildlife in the Pleistocene adapted to island life.

**More information:** A new species of giant marabou stork (Aves: Ciconiiformes) from the Pleistocene of Liang Bua, Flores (Indonesia), *Zoological Journal of the Linnean Society*, 2010, 160, 707 - 724.
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