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By: Stefan Anitei, Science Editor

Woolly mammoth (Mammuthus primigenius) rhul.ac.uk

Mystery Solved: Why Mammoths Were Humped

Ice frozen baby mammoth explains

The increasing melting of the permafrost, the frozen ground of the north, due to the global warming, is exposing increasingly more frozen mammoths. Now, even calves. In May 2007, a complete frozen body of a 6-year-old mammoth calf was found in the Yamalo-Nenetsk region of the Arctic Russia. On September 27, 2004, the front part of a mammoth calf was discovered in the Olchan mine in the Oimyakon Region of Yakutia (famous for being the place where the world's lowest temperature ever was recorded), and it seems to come with a trove of explanations about mammoth anatomy and biology.

The results of the first analyses made by a team at the Museum of Mammoth of the Institute of Applied Ecology of the North, Academy of Sciences of Sakha Republic (Yakutia), have been revealed by Informnauka (Informscience) Agency.
The team had at its disposal the head, part of the proboscis, the neck and part of the chest, as the body was cut off behind the withers and shoulders.

The skin of the forehead and most of the proboscis were missing, while the skull was damaged. The rest of the body was in good condition, being smooth, grayish-brown, with the tawny hair detached and embedded in the ice surrounding the body. Muscles were preserved under the skin, and the tooth alveoles bore permanent 7.6 cm (3 in) long tusk.

As milk-tusks were replaced by permanent ones at about the age of one year in the case of the mammoths, the team already knew the mammoth was at least one year old. The small size of the tusks pointed that the calf was female. X-ray tomography revealed a calf's more accurate age estimation: 1-1.5 years, when it could feed on vegetation.

No infections were found in the mammoth body, and the calf apparently got stuck into the mud and drowned. The hair shedding and skin exfoliation on some body parts show that the body remained in water for a long period. The death seems to have occurred in autumn, when the body froze rapidly and then it was wrapped by mud, a process that allowed the preservation of the body. The mammoth calf is still frozen.

What was the mammoth hump for?

[img=2]Adipose deposits were detected along the neck, from the skull base through to the withers, being 7 cm (2.8 in) thick. The adipose deposits formed "pockets" in some areas and stretched over to the body sides.

The Paleolithic people often drew mammoths with a big hump on the shoulder. The hump was thought to be adipose tissue on the withers, just like in modern zebu, camels or even brown (grizzly) bears, but other disagreed, pointing that the hump could have been muscle tissue or just a large mane. This analysis strongly supports the adipose tissue theory.

Fat reserves enabled mammoths to stand food and water shortage during severe dry winters. Radiocarbon dating made at the University of Groningen (Netherlands) showed the mammoth calf had died during the Kargin interglacial period, about 413,000 years ago. The sediments surrounding the body contained preserved pollen coming mainly from grasses and shrubs, pointing that the mammoth had lived in a grass-rich swamp. Today, the area is

covered by larch (the most cold tolerant existing tree) woodland mixed with some alder trees.