

# **A fossilized giant rhino bone questions the isolation of Anatolia, 25 million years ago**

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Contrary to generally accepted belief, Anatolia was not geographically isolated 25 million years ago (during the Oligocene epoch): this has just been demonstrated by researchers from the Laboratoire des Mécanismes et Transferts en Géologie (LMTG) (CNRS/ University of Toulouse 3/IRD) and the Paléobiodiversité et paléoenvironnements laboratory (CNRS/Muséum national d'histoire naturelle/University of Paris 6).

These results were obtained thanks to analyses of the first fossilized giant rhinocerotoid bone discovered in 2002 in an Anatolian deposit during a Franco-Turkish paleontology expedition funded by the ECLIPSE INSU-CNRS program.

The presence of this bone in Anatolia, with the remains of associated fauna, are indicative of animal migrations between Europe and Asia. The results, published online in the March 2008 issue of the Zoological Journal of the Linnean Society, thus call into question the isolation of Anatolia, which until now was considered to have been an archipelago.

This is the first time that a fossilized giant rhinocerotoid bone dating from the Oligocene epoch (a period corresponding to intense tectonic movements around the Mediterranean Sea) has been found in Anatolia. Discovered in 2002 during a Franco-Turkish paleontology expedition in the region of ÇankiriÇorum (Central Anatolia, Turkey), the bone fragment from the forearm (radius) described by the scientists measures 1.20 meters long and probably belonged to a very large male (about 5 meters to the shoulder), attributed to the Paraceratherium genus. These

herbivorous animals, also called baluchitheres or indricotheres, are considered to have been the largest terrestrial mammals that ever existed, equal in size to the largest mammoths (with a height to the shoulder estimated to be 5 meters or more, and a body weight of 15 to 20 tons).

As well as this specimen of *Paraceratherium*, known to have existed notably in Pakistan, China, Mongolia and Kazakhstan, the remains of ruminants and rodents were also found in the deposit. They enabled dating of the specimen to about 25 million years, and also exhibited close affinities with contemporary fauna in Asia and/or Europe.

This observation is particularly surprising in that Anatolia was until now considered to have been an archipelago at that time, separated from both Europe and Asia by what is referred to as the Paratethys Sea; the Black, Caspian and Aral seas are today the only remaining vestiges of this body of water. The discovery thus proves the existence of terrestrial communication and close links at that period between Europe (including France) and Asia (China, Mongolia, Pakistan). Thus, during the Oligocene epoch, Anatolia was not isolated by the sea and was at least an isthmus: animals could therefore cross on dry land from continental Asia to Anatolia.

On the other hand, this discovery also tends to confirm that there was indeed a separation from Africa, as to date no species of African affinity has been found in the Oligocene soils of Anatolia.

Source: Wiley

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