

Scientists say the American lion is not a lion after all

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Panthera atrox skull. Image credit: Wikipedia.

(PhysOrg.com) -- There has been some debate over the last century or so about whether the extinct American lion, *Panthera atrox*, which dates from the Pleistocene, is related to present day African lions (*Panthera leo*) or to the jaguar (*Panthera onca*). Most paleontologists consider *P. atrox* as a lion, and have in the past even classified the American lion as *Panthera leo* rather than a separate species. Now a new study has challenged previous classifications and found the American lion was a distinct species and more similar to the jaguar than the lion.

The best preserved fossils of *Panthera atrox* have been found in the La Brea tar pits in Los Angeles and are mostly housed in the University of California Museum of Paleontology. Over the last 40,000 years the tar

pits have trapped and preserved many animals in the thick asphalt deposits, because they were attracted to water that often covered and concealed the asphalt. Around 90 percent of the large animals found in La Brea were carnivores, presumably attracted to the area by the animals trapped in the sticky asphalt, and then becoming trapped themselves. The largest of the cat family found in the tar pits is the *Panthera atrox*.

The new study, by Per Christiansen of the Zoological Museum in Copenhagen, Denmark, and John Harris of the George C. Page Museum in Los Angeles in the U.S. used a range of statistical and shape analysis methods to compare large numbers of skulls of modern and extinct pantherine cats. They analyzed 23 dimensions on the skulls and found *P. atrox* has some similarities to lions but also many differences. The mandibular morphology is closer to jaguars and tigers than to lions.

The researchers concluded that *P. atrox* was evolved from a line of cats that immigrated into the Americas in the mid Pleistocene, and which gave rise in the late Pleistocene to *P. atrox* and the jaguar.

Panthera atrox was one of the largest cats ever, weighing in at over 350 kg and attacking prey animals as large as the wild horse and bison. It is believed to have inhabited open habitats, like the largest individuals of the modern jaguar, and became extinct around 10-12,000 years ago. At its height the American [lion](#) ranged from Alaska and the Yukon to Mexico.

The paper was published in the *Journal of Vertebrate Paleontology*.

More information: Per Christiansen and John M. Harris, Craniomandibular Morphology and Phylogenetic Affinities of *Panthera atrox*: Implications for the Evolution and Paleobiology of the Lion Lineage, *Journal of Vertebrate Paleontology* 29(3):934-945. 2009. [doi:10.1671/039.029.0314](https://doi.org/10.1671/039.029.0314)

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