

By ~~Stefan 2017~~ Stefan 2017, Science Editor

[Giant Jungle Ox, Proven to be Real Species](#)

Nuclear DNA shows kouprey is a real species

When kouprey (*Bos sauveli*) was first found in 1937, nobody could believe it: an almost one tonne heavy beast undiscovered by science until the middle of the 20th century! Wrapped in mystery, this extremely rare ox with curving horns has been an icon of Southeast Asian conservation. But the debate was focused on whether the new ox was a species by itself or just a hybrid. A recent DNA analysis revealed that Cambodia's national animal is a real species and not a hybrid between two related cattle, the banteng (a southeast Asian species) and zebu (a type of domestic cattle), as previously believed. The team made by French evolutionary biologists Alexandre Hassanin and Anne Ropiquet at the National Museum of Natural History in Paris, France, compared kouprey DNA to other wild and domestic oxen species. A hybrid kouprey would carry genes considered a mix of the two hypothetical parent species, but the kouprey's nuclear DNA was distinct from those of banteng and zebu. "Our interpretations are therefore that the kouprey is a real wild species, different from all other wild oxen," wrote Hassanin. In 1960 Cambodia turned the kouprey into its national symbol, but habitat loss and poaching pushed the species to the limit and no scientific observation of the ox in the wild has occurred since 1957. "I cannot imagine that if there were any kouprey left today we wouldn't be aware of them," said Gary J. Galbreath, an evolutionary biologist at Northwestern University in Evanston, Illinois, not involved in this research. In 1961 German zoologist Herwart Bohlken pointed that the kouprey could be a hybrid population of the banteng and zebu due to the similarities between their skulls. Galbreath's team checked this in 2006 by comparing kouprey and banteng mtDNA, which is transmitted just maternally. Hybrids carry the same mtDNA as the progenitor species. "We ran the DNA, and lo and behold, our prediction was correct. We now know that this [new study] is Murphy's law in action, but at the time it seemed very convincing." said Galbreath. Still, in 2004 a kouprey skull was described from the neighboring Thailand, dated about 125,000 to 5,000 years ago. "You can't have a fossil kouprey skull if the kouprey is a recent hybrid," he said. Zebu is a more recent domesticated species. Galbreath's team formally rescinded its previous view in 2007. But the mystery persisted: why do the kouprey and the banteng share mtDNA? The new research points that at some point in the Pleistocene, a female kouprey and a male ancestor of the modern banteng mated, this mix occurring at least once. The resulting offspring spread maternal kouprey mtDNA throughout the banteng population. Thus, the banteng actually has kouprey mtDNA.