

New ancient otter species among largest ever found

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Credit: Cleveland Museum of Natural History

Dr. Denise Su, curator and head of paleobotany and paleoecology at the Cleveland Museum of Natural History was co-author on new research

that described a species of otter new to science and that is among the largest otter species known.

The new species, *Siamogale melilutra* lived 6.24 million years ago in in the Yunnan Province in China. It weighed approximately 110 lbs and was roughly the size of a modern wolf.

Dr. Su and co-author Dr. Xiamong Wang, curator and head of vertebrate paleontology at the Natural History Museum of Los Angeles County, published their findings in *The Journal of Systematic Paleontology*.

Siamogale melilutra belongs to an ancient lineage of extinct otters that was previously known only from isolated teeth from a different, much older species that was recovered in Thailand. What is unique about the new discovery is that researchers recovered a complete cranium, mandible, dentition and various skeletal elements—offering a wealth of insight into the taxonomy, [evolutionary history](#) and functional morphology of this [new species](#).

"While the cranium is incredibly complete, it was flattened during the fossilization process. The bones were so delicate that we could not physically restore the cranium. Instead, we CT-scanned the specimen and virtually reconstructed it in a computer," said Dr. Su.

The CT restoration revealed a combination of otter-like and badger-like features, giving way to the species name "*melilutra*," which combines the Latin names for badger (*meles*) and otter (*lutra*).

Siamogale melilutra had a large, powerful jaw with the enlarged, bunodont (rounded-cusped) teeth typical of many otter lineages. This raises the question of whether these bunodont teeth were inherited by all otters from a common ancestor, or evolved independently in different [otter](#) lineages over time because of the evolution of similar adaptations

to thrive in similar environments—a phenomenon called "[convergent evolution](#)." Drs. Su and Wang, through their analysis, found that bunodont teeth independently appeared at least three times over the evolutionary history of otters, suggesting convergent evolution to be the cause.

The completeness of the specimen allows researchers to better understand the evolutionary history of otters, and one obvious enticing question jumps out.



Credit: Cleveland Museum of Natural History

"Why did this [species](#) grow so large?" asks Dr. Su. "How did its size affect its movement on land and in water? And most importantly, what types of advantages did its size give?"

Answers to these questions and more lie in future research.

More information: Xiaoming Wang et al. A new otter of giant size, sp. nov. (Lutrinae: Mustelidae: Carnivora), from the latest Miocene Shuitangba site in north-eastern Yunnan, south-western China, and a total-evidence phylogeny of lutrines, *Journal of Systematic Palaeontology* (2017). [DOI: 10.1080/14772019.2016.1267666](https://doi.org/10.1080/14772019.2016.1267666)

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