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1 June 2020

Giant mustelids roamed South Africa 5 million years ago - study

Over five million years ago wolf-sized otters and leopard-sized relatives of living wolverines (members of the weasel family that look more like badgers than wolves) lived along the West Coast of South Africa. This is according to recent discoveries by scientists at the University of Cape Town (UCT) and Iziko Museums of SA.

These animals known as mustelids – a family of carnivorans that include weasels, otters and badgers among others – represent the first mustelid specimens described from Langebaanweg in over 40 years.

In an article published in the journal *PeerJ*, Dr Alberto Valenciano and Dr Romala Govender of UCT's Department of Biological Sciences, describe the teeth, forelimb and hindlimb skeletons of these giant mustelids: the wolf-sized otter (*Sivaonyx hendeyi*) and the leopard-sized wolverine (*Plesiogulo aff. monspesulanus*).

“Our work has led to important new data about the locomotion and diet of the rather poorly known giant otter (*Sivaonyx hendeyi*), that is unique to Langebaanweg. In addition, we confirm that Langebaanweg's wolverine (*Plesiogulo aff. Monspesulanus*), is a different species to that of the large bodied *Plesiogulo botori* from Kenya and Ethiopia,” shared Valenciano.

The carnivores at the Langebaanweg fossil locality are quite common and they include a minimum of 20 different species of mustelids, bears, seals, jackals, hyenas, saber-tooth cats, giant civets and mongoose. “We report for the first time the presence of both giant mustelids in the main members at Langebaanweg,” Govender added.

The team hypothesises that the wolf-sized otter (*Sivaonyx hendeyi*), that lived five million years ago, had a role similar to that of the living African clawless otter and the Asian small-clawed otter. While less semiaquatic, it could still have possibly been able to dig occasionally. Additionally, its robust dentition suggests a diet based on armoured catfishes, molluscs, crustaceans or even bones.

Over the past seven to two million years giant otters (*Sivaonyx* and *Enhydriodon*) evolved in Africa, with terminal forms approximately the size of modern black bears and body masses exceeding 200kg, which make them the largest mustelids ever. “This group of giant otters are all extinct, and their new fossils enable us to unravel their biology and evolutionary relationships,” said Valenciano.

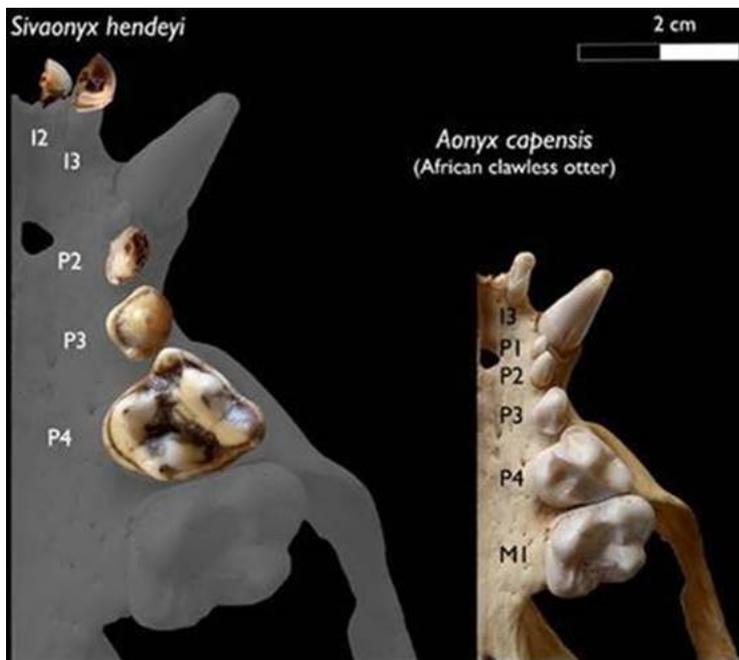
This study also confirms that between 6.5 to five million years ago (end of the Miocene,

beginning of the Pliocene era) there were two large species of wolverines in Africa i.e. from Langebaanweg, and from East Africa. These animals were later replaced by hyenas, canids and felids.

UCT palaeobiologist Professor Anusuya Chinsamy-Turan, who was not involved in the study, said: "I am thrilled to hear about these five-million-year-old giant mustelids that lived on the West Coast of South Africa. This work highlights that although it is important to unearth new fossils, it is essential that existing collections in museums be actively researched."

According to Govender, "This study shows that there is a need for new and detailed studies of Langebaanweg fauna housed at Iziko in the Cenozoic Collections. These studies will not only give us insight into the fauna that lived along the West Coast five million years ago but will also allow us to study and understand the faunal change that has occurred over the last five million years".

[Read the full study.](#)



Comparison of the maxilla of *Sivaonyx hendeyi* from Langebaanweg, showing the new upper dentition described and the previously known P4, with the living African clawless otter, showing the difference in size.

Image: Alberto Valenciano

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Romala Govender, co-author of the project, taking pictures of the bone-bed at Langebaanweg displayed in West Coast Fossil Park (South Africa).

Photo: Alberto Valenciano

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Alberto Valenciano, digging at the Langebaanweg fossil site in 2019.

Photo: Romala Govender

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Reconstruction on Langebaanweg's ecosystem five million years ago, showing *Plesiogulo* feeding on the giant pig (*Nyanzachoerus*) chasing away a primitive hyena.

Art by: Maggie Newman (GSSA and Wits University)

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