

RNA recovered from extinct animal in world first

September 26 2023



Daniela Kalthoff, in charge of the mammal collection at Stockholm's Museum of Natural History examines a dry specimen of a Tasmanian tiger.

Scientists have for the first time recovered RNA from an extinct species, the Tasmanian tiger, raising hope for the resurrection of animals once

thought lost forever, Stockholm University researchers told AFP.

"RNA has never been extracted and sequenced from an extinct species before," said Love Dalen, a Stockholm University professor of evolutionary genomics who co-led the project.

"The ability to recover RNA from extinct species constitutes a small step (toward) maybe being able to resurrect [extinct species](#) in the future," he said.

Dalen and his team were able to sequence RNA molecules from a 130-year-old Tasmanian tiger specimen preserved at [room temperature](#) in Sweden's Museum of Natural History.

With this they were able to reconstruct skin and skeletal muscle RNA.

RNA is a molecule that is used to convey information from the genome to the rest of the cell about what it should do.

"If you're going to resurrect an [extinct animal](#), then you need to know where the genes are and what they do, and in what tissues they are regulated," Dalen said, explaining the need for knowledge about both DNA and RNA.

The last known living Tasmanian tiger or thylacine, a carnivorous marsupial, died in captivity in 1936 at the Beaumaris Zoo in Tasmania.



The last known living Tasmanian tiger, a carnivorous marsupial, died in captivity in 1936 at the island's Beaumaris Zoo.

After European colonization of Australia, the animal was declared a pest and in 1888 a bounty was offered for each full-grown animal killed.

Scientists have focused their de-extinction efforts on the Tasmanian tiger as its natural habitat in Tasmania is largely preserved.

'Exciting idea'

Daniela Kalthoff, in charge of the mammal collection at the Museum of Natural History, said the idea of possibly resurrecting the Tasmanian

tiger was an "exciting idea".

"This is a fantastic animal and I would love to see it live again," she said, demonstrating the black-and-brown striped skin the researchers used in their study.

Their findings also have implications for studying pandemic RNA viruses.

"Many of the pandemics that have happened in the past have been caused by RNA viruses, most recently the coronavirus but also ... the Spanish flu," Dalen explained.



The scientists sequenced RNA molecules from a 130-year-old Tasmanian tiger preserved at room temperature.

"We could actually go and look for these viruses in [wild animal](#) remains stored in dry museum collections. That might actually help us understand the nature of pandemics and where pandemics come from," he said.

The study opens the door to using museum collections in this new way.

"There are millions and millions of dried skins and dried tissue from insects, mammals and birds and so on in museum collections around the world, and one could actually now go and recover RNA from all these specimens," Dalen said.

More information: Emilio Mármol-Sánchez et al, Historical RNA expression profiles from the extinct Tasmanian tiger, *Genome Research* (2023). [DOI: 10.1101/gr.277663.123](https://doi.org/10.1101/gr.277663.123)

© 2023 AFP

Citation: RNA recovered from extinct animal in world first (2023, September 26) retrieved 27 April 2024 from <https://phys.org/news/2023-09-rna-recovered-extinct-animal-world.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.