

Ad closed by Google

https://www.sciencedaily.com/releases/2016/05/160509101722.htm



- Health
- Physical/Tech
- Environment
- Society/Education
- Quirky

A- A A+ Search

Science News

from research organizations

Print Email Share

Further evidence found against ancient 'killer walrus' theory

Ad closed by Google

Date: May 9, 2016

Source: University of Otago

Summary: A team of scientists using techniques from the field of dentistry is shedding new light on the evolution of walruses, fur seals and sea lions. The researchers have cast further doubt on previous claims that an ancient 'killer walrus' was a marine mammal eater. The multidisciplinary research team analyzed the internal structure of tooth enamel in a fossil walrus from California, *Pelagiartcos thomasi*, and in teeth of New Zealand fur seals and sea lions.

Share: Facebook Twitter Google+ LinkedIn + Email

RELATED TOPICS

Plants & Animals

- Fish
- Marine Biology
- Mammals

Fossils & Ruins

- Early Mammals
- Fossils
- Dinosaurs

RELATED TERMS

- Sea Lion
- Walrus
- Polar Bear
- U.S. Navy Marine Mammal Program
- Krill
- Tooth

See Also

Top 10 Brain Supplements

How to Burn Belly Fat

Immune System Vitamins

Schizophrenia Therapy Techniques

Marine Biology Degree

Marine Biology Programs

Marine Biology Summer Camps

About Marine Biology

Aquarium Supplies

Pictures of Fish

Marine Aquarium Fish for Saltwater

Tropical Fish for Sale



Artist restoration of the head of *Pelagiartcos thomasi*, a fossil walrus from California. Once thought to be a "killer walrus" that ate marine mammals, new tooth enamel research is bolstering the case that it likely had a diet similar modern New Zealand fur seals and sea lions.

Credit: Robert Boessenecker

An Otago-led team of scientists using techniques from the field of dentistry is shedding new light on the evolution of walruses, fur seals and sea lions. The researchers have cast further doubt on previous claims that an ancient "killer walrus" was a marine mammal eater.

In a newly published article in the international journal *The Science of Nature* the multidisciplinary team of researchers report their analysis of the internal structure of tooth enamel in a fossil walrus from California, *Pelagiartcos thomasi*, and in teeth of modern pinnipeds the New Zealand fur seal and sea lion.

Study co-author Dr Carolina Loch says this was the first time the enamel ultrastructure of fur seals and sea lions, as well as the extinct walrus *Pelagiartcos*, was studied using scanning electron microscopy.

"*Pelagiartcos* was originally thought to have been a "killer walrus" that fed on large prey such as other marine mammals, but we found it has an enamel layer reasonably similar to that of modern New Zealand fur seals and sea lions, which are fish and squid eaters," Dr Loch says.

The enamel structure the researchers identified in *Pelagiartcos* meant the walrus was unlikely to be up to crunching through large bones without cracking its teeth -- suggesting that it was a dietary generalist like the modern New Zealand pinnipeds studied, she says.

Dr Loch says the study showed how using techniques and methods commonly employed in dentistry can answer questions with broader implications in the biology and evolution of animal species.

"Features and structures of the enamel layer have long been associated with differences in diet and tooth usage among animals, and can also help in the understanding the relationships among fossil and living species.

"Teeth are not only the focus of modern dentistry, but also valuable tools for biologists, archaeologists and paleontologists," Dr Loch says.

The study was conducted by Dr Loch, research fellow at the University of Otago's Sir John Walsh Research Institute, Faculty of Dentistry (and Otago alumna -- Department of Geology and Faculty of Dentistry); Dr Robert Boessenecker, College of Charleston USA (and Otago alumni -- Department of Geology); Dr Morgan Churchill (New York Institute of Technology College of Osteopathic Medicine, USA) and the late Professor Jules Kieser (Otago Faculty of Dentistry) -- who is always remembered for his prolific multidisciplinary dental research.

A 2013 paper by Drs Boessenecker and Churchill was the first to cast doubt on the "killer walrus" claims and the latest findings bolster their case, Dr Loch says.

Story Source:

The above post is reprinted from materials provided by University of Otago. Note: Materials may be edited for content and length.

Journal Reference:

- Carolina Loch, Robert W. Boessenecker, Morgan Churchill, Jules Kieser. Enamel ultrastructure of fossil and modern pinnipeds: evaluating hypotheses of feeding adaptations in the extinct walrus *Pelagiartcos*. *The Science of Nature*, 2016; 103 (5-6) DOI: 10.1007/s00114-016-1366-z

Cite This Page:

MLA APA Chicago

University of Otago. "Further evidence found against ancient 'killer walrus' theory." ScienceDaily. ScienceDaily, 9 May 2016. <www.sciencedaily.com/releases/2016/05/160509101722.htm>.

See Also

1 Marine Biology Degree

2 Marine Biology Programs

3 Marine Biology Summer Camps

4 Marine Aquarium Fish for Saltwater

5 Marine Recruiter

6 Tropical Fish for Sale

Related Stories



First Global Review of Arctic Marine Mammals

Apr. 30, 2015 — A multinational study attempted to gauge the population trends of Arctic marine mammals and changes in their habitat, identify missing scientific information, and provide recommendations for the ... [read more »](#)



Oldest Fur Seal Identified, Ending 5-Million-Year 'Ghost Lineage'

Feb. 11, 2015 — The oldest known fur seal has been discovered by a Geology PhD student at New Zealand's University of Otago, providing a missing link that helps to resolve a more than 5-million-year gap in fur ... [read more »](#)



New Research Throws Doubt on Earlier 'Killer Walrus' Claims

Jan. 17, 2013 — Palaeontologists who examined a new fossil found in southern California have thrown doubt on earlier claims that a "killer walrus" once ... [read more »](#)



Pacific Walruses Studied as Sea Ice Melts

Aug. 24, 2011 — U.S. Geological Survey Alaska Science Center researchers, in cooperation with the Native Village of Point Lay, will attempt to attach 35 satellite radio-tags to walruses on the northwestern Alaska ... [read more »](#)

See fewer ads and support this site.

Contributor works on millions of sites and all of your devices.

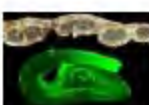
Contributor by Google

Strange & Offbeat

PLANTS & ANIMALS



First Sensory System That Detects Air Humidity Described



Intestinal Worms Boost Immune System in a Surprising Way



New Evidence Connects Dung Beetle Evolution to Dinosaurs

How Tree Crickets Tune Into Each Other's Songs

EARTH & CLIMATE



Endangered Venomous Mammal Predates Dinosaurs' Extinction, Study Confirms

Can Mountain-Climbing Bears Rescue Cherry Trees from Global Warming?

Adding Some Salt to the Recipe for Energy Storage Materials



Forest Discovery: Trees Trade Carbon Among Each Other

FOSSILS & RUINS

Medieval Women Better Dressed Than Men



Do Bearded Dragons Dream? Reptiles Share Sleep Patterns With Mammals and Birds



Giant Dinosaurs Hatched With Adult-Like Proportions

Ancient DNA Reveals Evolution of Giant Bears in the Americas

Print Email Share

Powered by Google



PROMOTED ON ecer.com

circular polarized 3d glasses



sciencedaily.com

Why wolves are forever wild, but dogs can be tamed



sciencedaily.com

Using fungi to decrease need for chemical ferti...



sciencedaily.com

Critically endangered species should be left to...



sciencedaily.com

Color of robins' eggs determines parental care



sciencedaily.com

Carotenoids Are Cornerstone Of Bird's Vitality

NEXT >

Recommended Articles

New research throws doubt on earlier 'killer walrus' claims

University of Otago, ScienceDaily, 2013

Oldest fur seal identified, ending 5-million-year 'ghost lineage'

University of Otago, ScienceDaily, 2015

Researchers identify three new fossil whale species of New Zealand

University of Otago, ScienceDaily, 2015

Seal evolution: Sexual dimorphism in pinnipeds arose around 27 million years ago as climate changed

Canadian Museum of Nature, ScienceDaily, 2014

Ancient New Zealand 'dawn whale' identified

University of Otago, ScienceDaily, 2014

Breathing through mouth during sleep may increase tooth decay risk

Catharine Paddock PhD, Medical News Today

Water fluoridation 'does not lower IQ'

Medical News Today, 2014

UCLA study clarifies the oral consequences of methamphetamine use

MDLinx

Saliva protects teeth against cavities more than we thought

Catharine Paddock PhD, Medical News Today, 2014

How sharks could aid human tooth regeneration

Honor Whitefeman, Medical News Today

Powered by Trend MD

Free Subscriptions

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

Email Newsletters

RSS Feeds

Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

Facebook

Twitter

Google+

LinkedIn

Mobile Apps

Get the latest news from ScienceDaily via our free mobile apps, available for download on the following platforms:

iPhone/iPad

Android

Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

Leave Feedback

Contact Us