

Mammals triumphed with oxygen increase

September 28 2005

The first high resolution, continuous record of oxygen in the Earth's atmosphere indicates a sharp rise in oxygen about 50 million years ago.

And Rutgers University scientists in Piscataway, N.J., say that gave mammals the evolutionary boost needed to dominate the planet.

Rutgers Marine Science Professor Paul Falkowski and colleagues measured carbon 13, a byproduct of photosynthesis, in deep-sea core samples dating to 205 million years.

Since photosynthesis produces oxygen and leaves carbon 13 behind, scientists were able to estimate precisely how much oxygen was in the atmosphere at any given time.

From a steady 10 percent -- the level at which dinosaurs flourished -- the oxygen percentage rose to 23 percent by 40 million years ago.

"In the fossil record, we see this rise in oxygen content corresponds exactly to a really rapid rise of large, placental mammals," Falkowski said. "The more oxygen, the bigger the mammals."

He added: "We argue that the rise in oxygen content allowed mammals to become very, very large ... like 12-foot-tall sloths and huge saber-toothed cats. They paved the way for all subsequent large mammals, including ourselves."

The study appears in the Sept. 30 edition of the journal Nature.

Copyright 2005 by United Press International

Citation: Mammals triumphed with oxygen increase (2005, September 28) retrieved 25 April 2024 from <https://phys.org/news/2005-09-mammals-triumphed-oxygen.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.