University of Edinburgh study shows that mammals lived longer than dinosaurs

A new fossil find is giving scientists clues about an ancient group of animals that flourished when dinosaurs died out.

The discovery by scientists in New Mexico has been identified as a previously unknown species from a group of small, furry mammals that resemble today's rodents.

These mammals, which originated some 100 million years before the dinosaurs were killed off, were distinctive in having strange and complex teeth. Their sharp incisors and molars with lots of cusps were suited to their diet of plants and leaves.

They survived the events that led to the extinction of dinosaurs, and spread through what is now Asia and North America. Studying the creatures may aid understanding of mass extinctions, scientists say.

The group finally died out some 35 million years ago, when it was replaced by emerging rodents. Scientists say it is unclear why the animals – known as multituberculates – were superseded, but it may be because rodents were smarter, grew more quickly, or reproduced faster, giving them an edge in competing for resources.

Uncovering the new species, known as Kimbetopsalis simmonsae, has helped scientists update the mammals' family tree. Their research revealed that the new fossil dates to about 500,000 years after the extinction. It may be from a forebear to the biggest species in this group, which weighed up to 100kg and

might have resembled a large beaver.

The study, carried out by the University of Edinburgh, the New Mexico Museum of Natural History and Science, and the University of Nebraska, was published in the Zoological Journal of the Linnean Society. It was supported by the Marie Curie Foundation, the Natural Environment Research Council, the US Bureau of Land Management, and the National Science Foundation. You can read the paper in full below.

Dr Thomas Williamson of the New Mexico Museum of Natural History and Science, who led the research, said: “Finding this new mammal was a pleasant surprise. It helps fill an important gap in the record of this group of mammals. It’s interesting that this odd, now extinct group, was among the few to survive the mass extinction and thrive in the aftermath. It may be because they were among the few mammals that were already well-suited to eating plants when the extinction came. This new species helps to show just how fast they were evolving to take advantage of conditions in the post-extinction world.”

Dr Steve Brusatte of the University of Edinburgh’s School of GeoSciences, who took part in the research, said: “We could think of Kimbetopsalis as a primeval beaver, which lived only a few hundred thousand years after the asteroid impact that killed the dinosaurs. The asteroid caused apocalyptic environmental change, but it seems like mammals began to recover pretty quickly afterwards. It was in this brave new world that our mammalian ancestors got their start.”

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