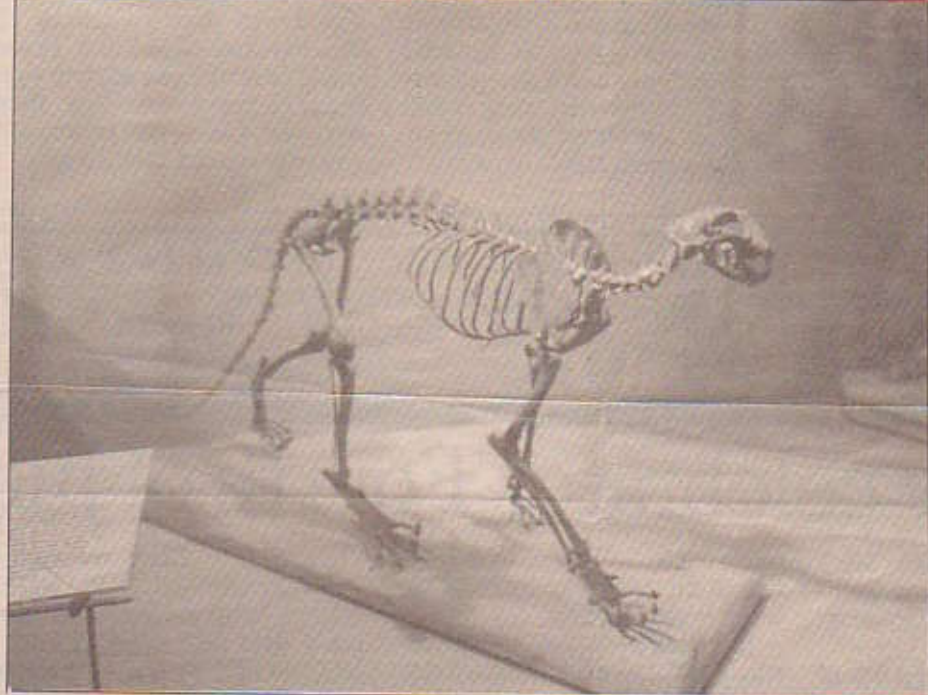


Johnson KR. 1995. Cheetah provides clue to pronghorn speed. Rocky Mountain News.

Keywords: 3NAm/Acinonyx jubatus/cheetah/fossil/paleontology/predator/pronghorn/speed

Abstract: Paleontologists found fossil animals from a cave floor. This natural trap has preserved direct evidence that cheetahs lived in North America as recently as 18'000 years ago. This also explains why pronghorn in America evolved a high speed ability which was not explainable before finding the fossil predator.



This 18,000-year-old fossil cheetah skeleton is a hint to the puzzle of why pronghorns are the fastest mammals in North America. The skeleton is on display in the museum at the University of Kansas in Lawrence.

Kirk R. Johnson /
Special to the News



Cheetah provides clue to pronghorn speed

By Kirk R. Johnson

During a recent drive through the rain-soaked plains of eastern Colorado, a friend and I saw dozens of pronghorn. These animals have always fascinated me because of their speed.

On a good day and on level ground, a pronghorn can achieve 50 mph. This makes the pronghorn the fastest animal in North America. The only animal that can run faster is the African and Asian cheetah, which can sprint at speeds in excess of 70 mph.

The ability to run fast is a trait many mammals developed over the last 60 million years. Speed allows peaceful plant eaters to make a rapid exit when predators show up. Predators have responded by running faster. And, over thousands of generations, both the predators and the prey in wide-open habitats have gotten faster and faster in the evolutionary equivalent of ever quickening track and field records.

Why are pronghorns so fast? The only common predators of the American grasslands are coyotes. Before settlement of the west, wolves and grizzly bears lived on the plains.

While I wouldn't want to try to outrun a hungry grizzly or a wild wolf pack, neither of these animals are in the same speed league as the pronghorn. Clearly a piece of the puzzle is missing.

The history of life on Earth is complicated and has been for at least 545 million years since the first major wave of animal evolution. Reconstructing ancient ecosystems or extinct animals is like trying to complete a puzzle when many of the pieces are mangled or missing.

But every once in a while, paleontologists are lucky enough to find a fossil that makes sense out of a previously unsolved conundrum.

Since 1974, Larry Martin, a paleontologist from the University of Kansas, has excavated a unique fossil site in the Bighorn mountains of northern Wyoming.

Natural Trap is a large deep cave with steep walls and a wide opening. Animals unlucky enough to slip into the cave fell 85 feet to their bone-crushing death. Over time, hundreds of animals fell into the cave. Since the only way into the cave was a fatal tumble, the carcasses of the fallen animals weren't destroyed by scavengers.

Radiometric dating of volcanic ash that drifted into the cave suggests the mouth of the cave has been open for at least 100,000 years. Martin and his crew have retrieved the skeletons of a number of different and interesting fossil animals from the cave floor. These fossils include such ice age oddities as giant mountain sheep, musk oxen, camels, horses, mammoths, short-faced bears and pronghorns.

But the find that really caught my eye was the complete skeleton of an ice age cheetah.

Natural Trap has preserved direct evidence that cheetahs lived in North America as recently as 18,000 years ago.

This may or may not be the puzzle piece that explains why pronghorns are so fast, but it is an interesting possibility.

Kirk R. Johnson is curator of paleontology at the Denver Museum of Natural History, where Prehistoric Journey, a look at life on Earth for the past 3.5 billion years, opens in October 1995. Questions and comments may be sent to the Prehistoric Journal, Denver Museum of Natural History, 2001 Colorado Blvd., Denver 80205.