

Cenozoic Mammals

THE EVOLUTION OF HOOFED MAMMALS

Ungulates—the hoofed mammals

Ungulates, or hoofed mammals, are the most diverse group of mammals living today. With few exceptions, they are herbivores. The most well known are the Artiodactyla—ungulates that walk on an even number of toes such as sheep, deer, pigs and camels—and the Perissodactyla, odd-toed ungulates such as horses, rhinos and tapirs. But modern ungulates also include the diminutive hyrax, elephants and even whales!

An evolutionary radiation

The first cat-sized ungulates appear in the fossil record near the end of the Mesozoic, but they bore little resemblance to modern hoofed mammals. After the extinction of large Mesozoic reptiles 65 million years ago, ungulates and other mammals began to diversify into the myriad forms we know today. This marked the beginning of the Cenozoic Era—The Age of Mammals.

The Cenozoic was a time of dramatic climatic change



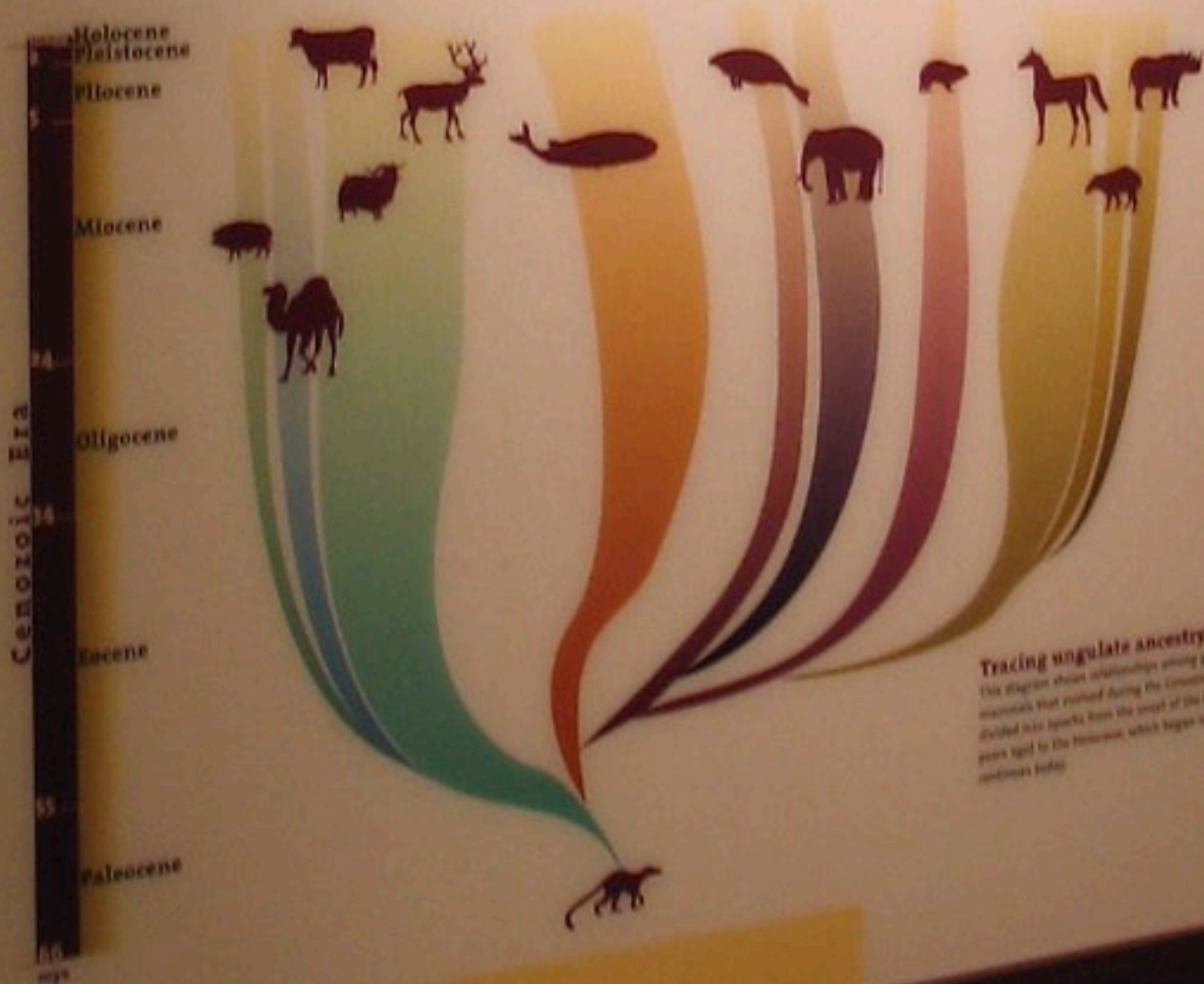
63 million years ago

When the Cenozoic began Earth's climate was almost uniformly warm and damp. As compared with today there was relatively little contrast between the equator and the poles. Tropics of forests (orange) and subtropical woodland (yellow) extended much farther north and south than they do today and temperate woodlands (green) even covered the poles.



20 million years ago

Midway through the Cenozoic the climate became cooler, drier and more seasonal. Many more environmental zones began to form. Tropical forests (orange) became centered near the equator. Subtropical (yellow or brown) and temperate (green) vegetation occupied mid latitudes. Tundra (blue) and ice (white) gradually settled around the poles. These ecological changes helped to shape the diversification of ungulates and other mammals during the Cenozoic.



Tracing ungulate ancestry

This diagram shows relationships among groups of modern hoofed mammals that evolved during the Cenozoic Era. The Cenozoic is divided into epochs from the onset of the Pleistocene (2 million years ago) to the Pliocene, which began 3 million years ago and continues today.