

THE EVOLVING HORSE

Early horses of the forest

Equus, the modern horse, is the latest in an extraordinarily diverse and successful group of mammals that flourished throughout the Cenozoic Era. Its evolutionary history began in North America and Europe over 55 million years ago at the dawn of the Eocene. The first horses bore little resemblance to those of today. These small forest-dwellers had relatively short limbs, walked on three or four padded toes, and browsed on leaves, seeds and fruit.

Adapting to a changing landscape

Beginning about 24 million years ago during the Miocene, the climate changed and some forests gave way to grassland savannas. Horses rapidly diversified within this mosaic of habitats. Grassland dwellers, including the ancestors of modern horses, became increasingly specialized. They evolved high-crowned teeth for chewing abrasive grasses and longer, more streamlined limbs to escape from predators.



A "bushy" root
 Horse evolution is better represented by a bush than a straight line. During horses' 55 million year history, many branches died out for millions of years before eventually meeting extinction. Today, *Equus* is the only survivor of this ever-flourishing group.



Merychippus: Miocene Grazing Horse
 Equipped with springy ligaments supporting elongated feet and a larger hoof-tipped middle toe, *Merychippus* was one of the first horses built for speed on the open plains. As a modern horse, its deep jaw housed high-crowned cheek teeth specialized for a diet of abrasive grasses.



Archithorax: Miocene Forest Horse
 This hoofed forest dweller had a large brain, a long neck, and a large eye. Although it lived alongside the grazing ancestors of modern horses, it diverged from their specialization. *Archithorax* retained primitive feet, teeth and a diet similar to that of early horses.



Drekippon: An Early Horse
 These are casts of a skull and foot from a small primitive horse that lived 45-50 million years ago during the Eocene. Quite unlike modern horses in overall appearance, *Drekippon* had a short snout, relatively simple teeth, and walked on four toes in the front and three in the back.

