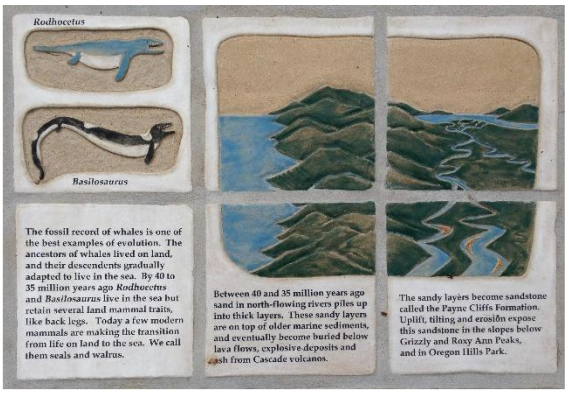
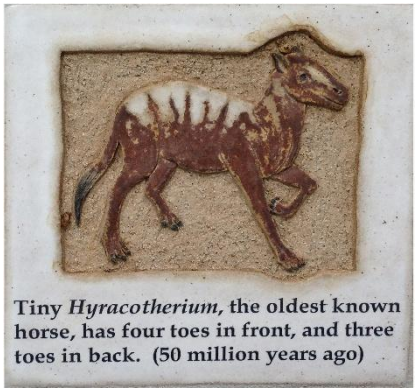


13. **<u>Rodhocetus/Basilosaurus</u>, Eocene 25m**

Rodhocetus kasrani is one of a series of early whale finds (in Pakistan of all places). There appears to have been just the right factors in place for a long time to preserve a reasonably good evolutionary sequence of the transition of whale ancestors from the land to the sea. It appears that whales are descended from artiodactyls (even-toed mammals like deer, camels, cows, pigs and hippopotamus.) *Rodhocetus* was semi-aquatic, and had limbs adapted for walking on land as well as swimming, but more like a hippopotamus than a seal in its form of locomotion. The telltale tie to the artiodactyls is found in the form of an ankle bone, known only from this group of animals, and *Rodhocetus* had it.

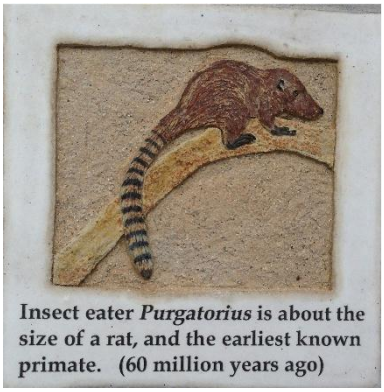
PAYNE CLIFFS FLUVIAL SANDSTONE 40 Ma

Between 40 and 35 Ma, sediments deposited in north-flowing rivers piled up on top of older rocks in the area that would one day become southwest Oregon. The sand and gravel laid down by these rivers were buried under younger volcanic rocks of the first Cascade volcanoes. Recent erosion has exposed these old river sediments, and we call them the Payne Cliffs Formation. They can be seen as light-colored, cliffy outcrops on the lower slopes of Grizzly Peak and in Oregon Hills Park.


Tiny *Hyracotherium,* the oldest known horse, has four toes in front, and three toes in back. (50 million years ago)

14. **<u>Hyracotherium,</u> E. Eocene 23.8m**

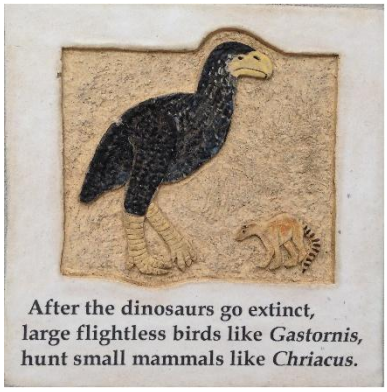
Hyracotherium sp. ('hyrax-like beast') is thought to be a part of the early evolutionary line that eventually led to modern horses, donkeys, zebras, etc. *Hyracotherium* was a small animal, only half a meter long, and seems to have lived a quite forest life looking for leaves nuts and shoots to eat and avoiding predators, like giant birds in the Gastornis mold. The teeth of *Hyracotherium* had the beginnings of the ridge's characteristics of horse teeth. It also had four hooved toes on the front feet and three on the back feet. Horses have hooved feet also but only one toe, The fossil record has yielded a fairly good record of the shrinkage loss of toes, the increase in leg length and body size, and other gradual changes that led to the modern horse. This reasonably good record of gradual change through time from a small forest animal to a swift plains-dwelling horse is one of the better records of evolutionary change. Another is the record for human evolution.


Insect eater *Purgatorius* is about the size of a rat, and the earliest known primate. (60 million years ago)

15. <u>Purgatorius</u>, Paleocene 23.3m

Purgatoriius sp. is thought to be an early form of primate, although its exact place in the evolutionary history of primates is unknown. This is mostly because the only fossils we have of this animal are its teeth and jaws. But paleontologists can make a reasonable estimate of the animal's size and character because teeth are so distinctive.

Purgatorius's teeth have primate characteristics, and by association with other mammals of the time, it can reasonably be thought to have been a rat-sized creature that spent most of its time in the trees feeding on fruit and insects. It is important to remember that the fine illustrations one sees of ancient animals can be based on almost complete skeletons, but also, for some species, can be based on only a few teeth and bones.



16. <u>Gastornis/Chriacus</u>, Paleocene 22.8m

Gastornis sp. (Gaston's bird, after the man who discovered the first fossils) was a successor to the large predatory dinosaurs, to which it was distantly related. *Gastornis* was almost two meters tall, strongly built, and had a massive, powerful beak. It was too solidly built to have been a fast runner, so it probably was an ambush hunter and scavenger. For millions of years after the demise of the dinosaurs, giant predatory birds were the top predators on Earth.

Chriacus sp. was a mammal that shared the post-dinosaur world with *Gastornis*. *Chriacus* was a versatile creature, able to climb trees using its rear feet claws and prehensile tail, and able to dig for food with its robust front feet. It probably was an omnivore and ate insects and other invertebrates, fruit, eggs, and probably whatever else it could find. In terms of size and habits, although not climbing ability, it resembles the modern raccoon.