

Fossils In North Dakota

FIND is a newsletter dedicated to helping young readers (in age or spirit) express their love of fossils and paleontology, and to help them learn more about the world under their feet. Each issue will be broken up into sections including Feature Fossils, Travel Destinations, Reader Art, Ask Mr. Lizard, and more!

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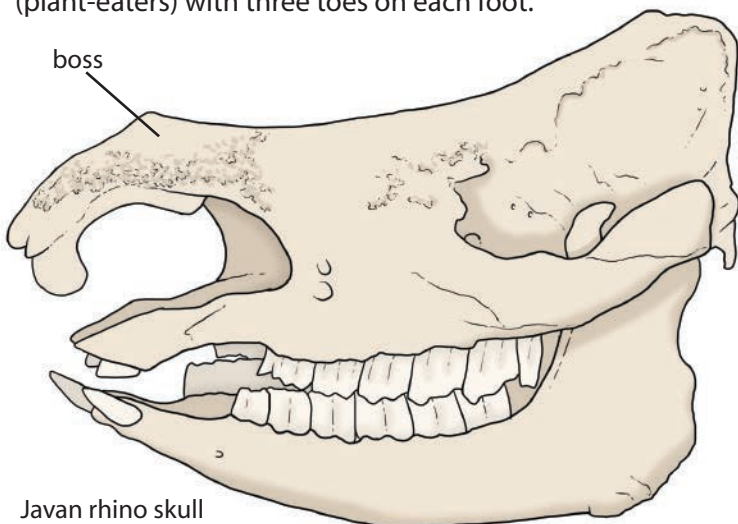
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Feature Fossil: *Subhyracodon*

Along what are now the "Little Badlands" of North Dakota, 33 million years ago it looked very different. During the Oligocene, the climate was more dry, almost savana-like. One of the creatures that roamed the land was called *Subhyracodon* - one of the first rhinos. Unlike their modern relatives, *Subhyracodon* did not have a horn! We know this from studying the skulls of modern and prehistoric animals. Where a horn would attach to the skull is a roughened portion of bone on the nose, called a "boss." This structure, much like muscle scars, tell us that something attached to a specific point on the bone. *Subhyracodon* did not have a boss - their nasal bones were smooth.

An adult *Subhyracodon* was about the same size as a cow or tapir - roughly 8 feet in length. They were **quadrupedal** (walked on four legs) **herbivores** (plant-eaters) with three toes on each foot.



Javan rhino skull

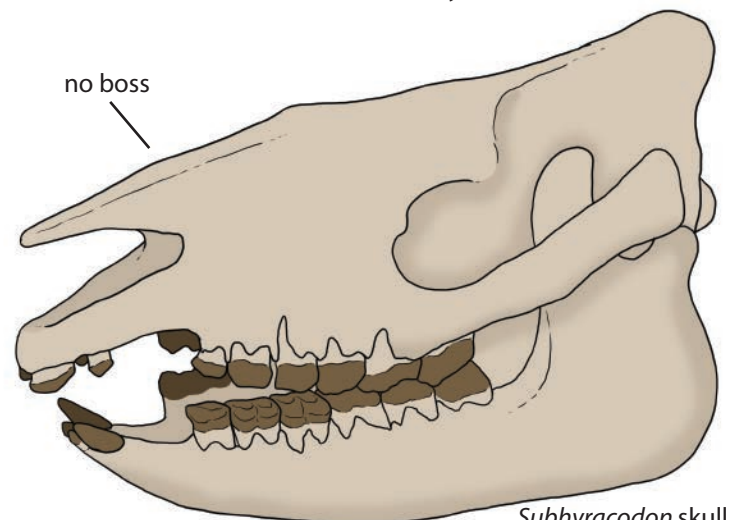
Their teeth had extra ridges to increase the surface area available for grinding, meaning their food source was most likely plants that were very tough.

Their feet, and the number of their toes is important, because it helps us tell what group of animals they belong to. **Plantigrade** animals walk on the flats of their feet, from heel-to-toe (like humans or bears). **Digitigrade** walk on their toes (like cats or dogs). Raise yourself up onto the balls of your feet, so your toes are flat - that's digitigrade. **Ungulates** walk on the tippy-tip of their toes, like a ballerina 'en pointe'.

Ungulates are divided into two big groups: **Artiodactyls** and **Perissodactyls**. Artiodactyls are called even-toed ungulates - so they walk on their tip-toes, and their weight is split evenly between two middle toes. They include animals like deer, bison, or sheep. Perissodactyls are called odd-toed ungulates, even though some have an even number of toes. Their weight is distributed across one middle toe, with possible others to the side. This group includes horses, tapirs, and of course our friendly rhinos.

So what kind of habitat did *Subhyracodon* live in? Some prehistoric rhinos had smaller bodies, and longer legs, meaning they were more **cursorial** (legs adapted for running). *Subhyracodon* had a bulkier body, and more massive, stocky legs. Not that great for running, but perhaps more similar to a modern rhino, or even a hippopotamus.

Modern rhinos live in Asia, Africa, and parts of India. Their habitat includes vast plains, dense rainforests, and sometimes swamps. Perhaps our rhino in question lived in something similar? We already know the environment was more dry than today, with large plains. Did they live in the open areas? Or down by a wandering river? Wherever it was, they weren't alone! Other animals that lived during the same time as *Subhyracodon* include the cat-like *Dinictis*, the tortoise *Stylemys*, small sheep-pig *Merycoiodon*, the pig-like entelodont *Archaeotherium*, and many more.



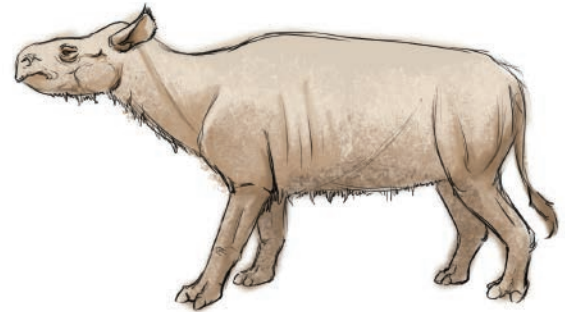
Subhyracodon skull

ND Savana Word Find



Hidden in the letters at left are a number of plants and animals that lived in North Dakota during the Oligocene. See how many you can find!

- Archaeotherium
- Dinictis
- Styemys
- Meshippus
- Hyaenodon
- Subhyracodon
- Celtis
- Daphoenus
- Hesperocyon
- Leptictis
- Merycoidodon
- Skinnerelix
- Trionyx



Amazing Murals

Below is a mural on display at the Heritage Center, in Bismarck, North Dakota. Each of the animals and plants painted have been found in the Little Badlands of southwestern ND. While most of the animals are long extinct, their descendents live on today. Tiny *Leptomeryx* are seen in modern deer. Horses were once as miniscule as *Meshippus*. Hackberry trees are still flourishing today, and may even be grown in the current ND climate. Turtles and tortoises can be found on many continents. Although extinct in North America, rhinoceros descendents spread to Asia, Africa, and parts of India.

