

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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Editor: Becky Barnes
North Dakota Geological Survey
600 East Boulevard
Bismarck, ND 58505

becbarnes@nd.gov

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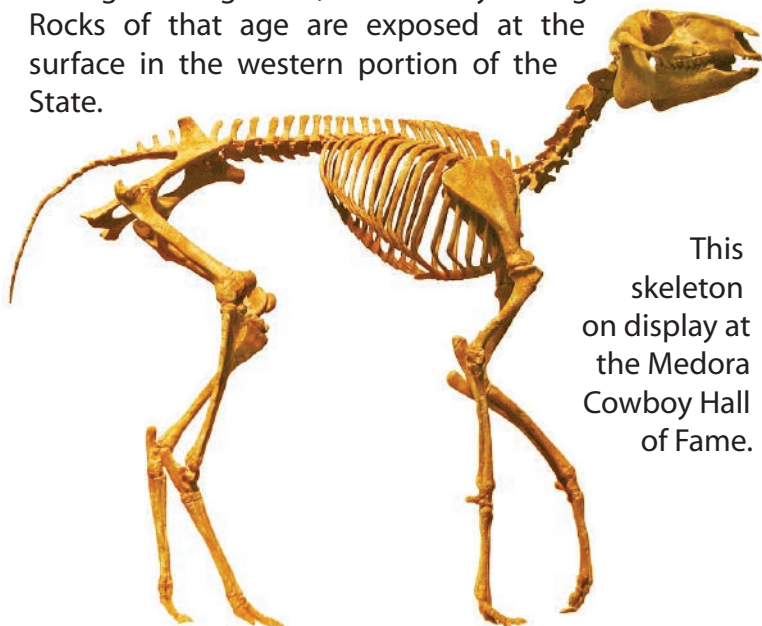
Please e-mail us if you wish to receive the electronic version of FIND, or view past issues at:
<https://www.dmr.nd.gov/ndfossil/kids/>



Feature Fossil:

Meshippus

The history of horses in North Dakota is an interesting story. How they first evolved here, moving from 5 toed leaf-browsing animals, to single-toed grass-grazing animals, becoming extinct after the last Ice Age, and finally being reintroduced in the 1500s by exploring Spaniards. For this section, we will focus on one of the smaller horse ancestors, *Meshippus* (Greek: meso = middle, hippos = horse). *Meshippus* were three-toed animals that roamed through the State during the Oligocene, 30 million years ago. Rocks of that age are exposed at the surface in the western portion of the State.



This skeleton on display at the Medora Cowboy Hall of Fame.

Meshippus would have lived with other animals such as the pig-like *Archaeotherium*, the hornless rhinoceros *Subhyracodon*, and fierce cat-like predators *Dinictus*.

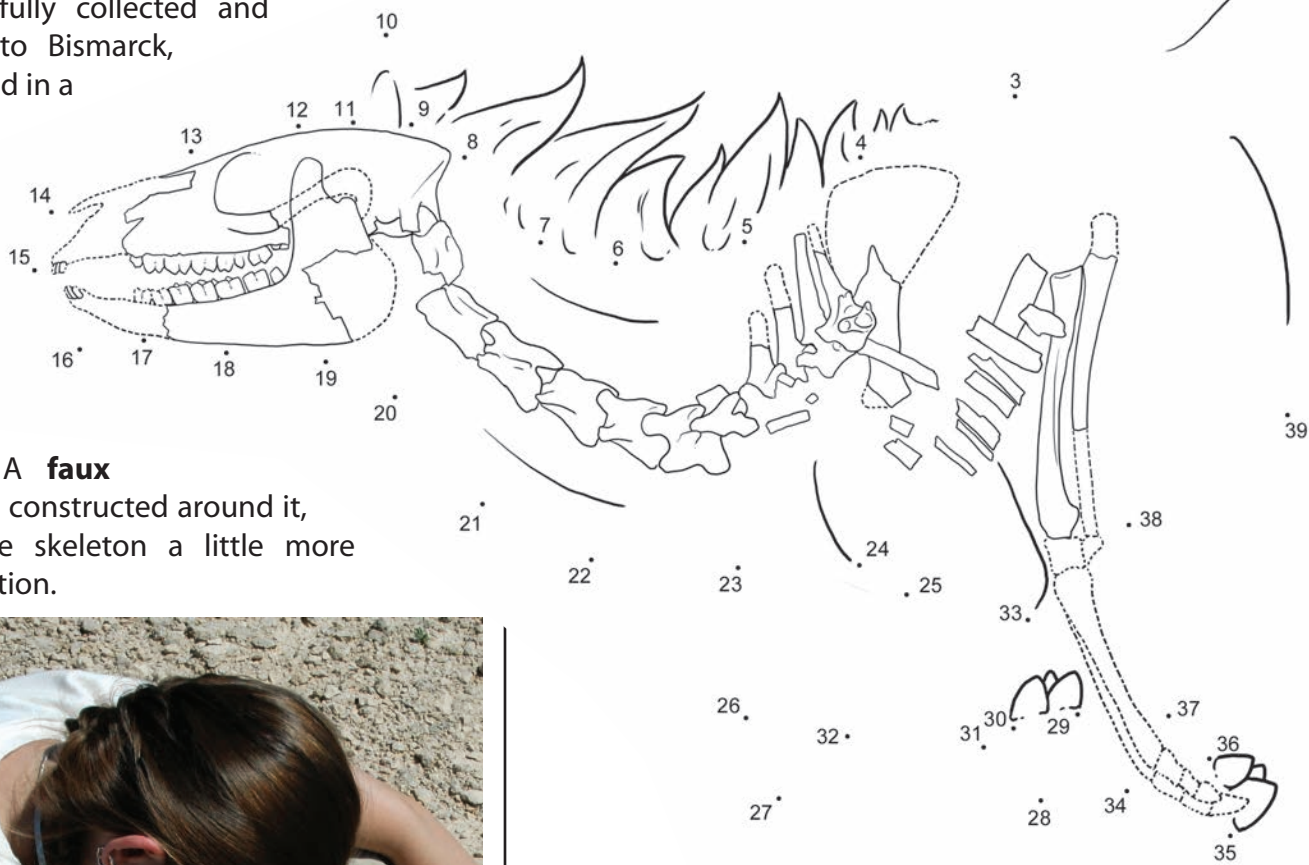
The *Meshippus* below was found on one of our 2009 Public Fossil Digs. Can you spot what we first saw? It wasn't much...



If you thought the fragmented white shards near the top, or the more orange-brown knobs, you were correct! That is actually part of the left side (**lateral** view) of the skull; the orange-brown knobs are teeth.



Once we started excavating, it was obvious there was more to the animal than just the skull. Limb bones, vertebrae, and ribs were exposed as well. The skeleton was carefully collected and transported back to Bismarck, where it was cleaned in a safe, controlled (and bug free!) environment. The skeleton is now on display in the Adaptation Gallery: Geologic Time, in the North Dakota Savana exhibit. A **faux** (fake) rock wall was constructed around it, to give the fragile skeleton a little more support and protection.



Connect The Dots!

Special Interest:

Public Fossil Digs

This year the ND Geological Survey has five, yes, FIVE digs available for the Public! Pembina Gorge, Whiskey Creek, the Bismarck Area, Marmarth, and Medora.

The Pembina Gorge site (June 23-29) has been producing 80-million-year-old fossils from prehistoric sea birds, giant squid, fish, and marine reptiles such as mosasaurs. Great for people with patience, who don't want to do a lot of hiking. We drive right to the site. A partial mosasaur that we have been uncovering the last few years will be on display in our new gallery at the Heritage Center.

Whiskey Creek (July 14-20) is home to numerous 60-million-year-old crocodiles and turtles. Just after the extinction of the dinosaurs, crocodiles were this area's main predator. A 1.5 foot long skull found at the site will be on display in our new gallery as well. Requires some hiking; outdoor experience helpful, but not necessary.

We don't yet know what the Bismarck Area dig sites (July 22-24) will be - it will depend on the weather. However, there are numerous sites for us to choose from, (may include dinosaurs, plants, sabertooth cats,



or swamp inhabitants!).

Marmarth (July 26-August 2) is perfect for experienced diggers, and people who enjoy a lot of hiking and climbing (what we call "prospecting"). Depending on the area, fossils range from crocodiles and turtles, to dinosaurs. You could work for a whole day and find scraps, or hit the next big find - it's all luck!

Finally, we are thrilled to return to the Medora site (August 11-17). Similar to the Whiskey Creek site, this area used to be a 60-million-year-old swamp, and includes crocodiles, turtles, fish, and the occasional elusive mammal. This site is great for people who don't want to do a lot of hiking - we drive almost all the way to the site. This site is highly productive, with diggers finding many good-sized fossils. We also bring buckets of **matrix** (rock and dirt from the fossil producing area) back to the lab to search for **microfossils** (fossils so small you need magnification to see them easily) that would normally be missed in the field.

For detailed information on costs, age requirements, etc., check out:

<https://www.dmr.nd.gov/ndfossil/digs/digs.asp>

Ask Mr. Lizard

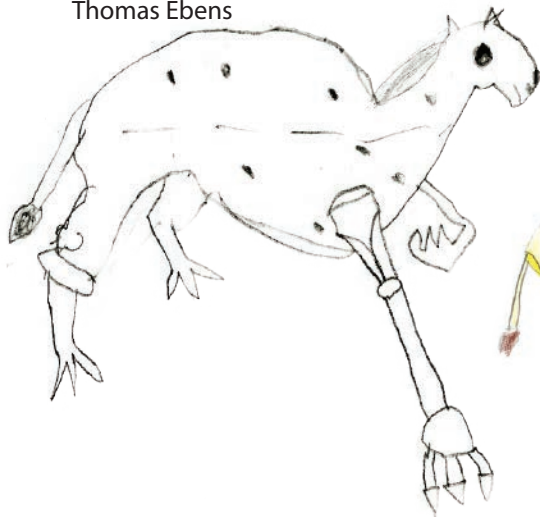
Have questions about fossils, dinosaurs, or anything related to paleontology? Send them in, and our paleontologists will do their best to uncover the answer for you.

Reader Art

We want YOUR artwork! Please e-mail us a copy, or mail your art to our address in Bismarck, ND.



Thomas Ebens



Samantha Ebens

Just Imagine...

It was a mild spring morning, the sun just peaking over the distant rain-washed hills. It had been a dry winter, and while the temperature never dropped to freezing more than a couple times, the plants had suffered from the lack of moisture. A dainty three-toed *Mesohippus* stepped between trees, nibbling here and there at the new spring growth that was starting to tip the branches. The gray-brown landscape was starting to bloom with green; a colorful carpet of early flowers was spreading across the ground. Outside the trees, among the flat savanna landscape, the *Mesohippus* watched a small herd of oreodonts milling about, also taking advantage of the fresh green food. Their shorter, stocky bodies resembled something of a cross between a camel and a pig. They were part of an even-toed group of animals (**artiodactyls**, like sheep, deer, and giraffes), while the *Mesohippus* belonged to an odd-toed group of animals (**perissodactyls**, like horses, tapirs, and rhinos).