

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!

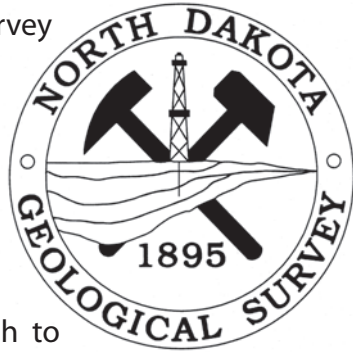
Fall 2011, No. 2

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Next Issue: December 2011

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



Feature Fossil: *Champsosaurus*



Champsosaurus gigas lived after the extinction of the dinosaurs, along with crocodiles, turtles, snakes and other reptiles. Its name means "very large crocodile lizard." It looks similar to the living gharial (or gavial). It has a long, narrow snout filled with 44-46 sharp pointed teeth, perfect for catching fish. They lived in much the same environment as modern crocodiles, inhabiting swamps, rivers, and ponds in western North Dakota during the Paleocene (55-60 million years ago).

These animals grew to 10 feet (3.1 meters) long or more, and were equipped with a long sinuous tail that assisted with **sculling** (swimming by moving side-to-side, similar to a crocodile). Their bones are much more **robust**, or blocky, than a crocodile's, and they lacked **dermal** (skin) armor called **scutes**, which are little squares of bone imbedded in the skin. The exact cause of their extinction is unknown, but it could be likely they were out competed by more advanced

crocodiles. They lacked a secondary palate that crocodiles have (and mammals too!), which is what allows you to eat and breathe at the same time.

Travel Destination: Cowboy Hall of Fame

Cowboys might not be the first thing that comes to mind when you think of paleontology, but the Cowboy Hall of Fame in Medora, ND holds an exhibit filled with local fossils. From plants to dinosaurs, fish, turtles, miniature three-toed horses, coprolites (fossil dung) and crocodiles, they have a great sampling of what fossils can be found in western North Dakota. Take your time to view the short movie presentation at the start, and watch the history of the state change before your eyes.

Many of the fossils in the museum were excavated by volunteers. Each summer the Theodore Roosevelt Medora Foundation holds a dig with the North Dakota Geological Survey to find local bones. For more information on the summer digs, visit:

www.dmr.nd.gov/ndfossil/digs/digs.asp

Or to learn more about the Cowboy Hall of fame:

www.northdakotacowboy.com/

Ask Mr. Lizard...

How can you tell what fossils are real or fake in a museum? - Bethany V., Age 10

Finding a complete fossil skeleton of *anything* is very rare, so many museums make **casts** (copies or models) of real fossils to show instead, filling out missing fossils with sculpted bones. Unless the museum is very old, a good way to see if a skeleton is real or not is to look at the metal **armature** (supports) that hold the bones up. If the wires and metal go right through a bone, it is most likely a cast. If the armature

Ask Mr Lizard (continued...)

gently cradles the bones so they can be removed, then there is a good chance the fossil you see is real.

Smaller common fossils on display are often real, such as shark teeth, shells, fish vertebrae, or plants.

How many different types of dinosaur have been found in North Dakota? - Mike N., Age 12

Exposed dinosaur bearing rocks in North Dakota hold fossils from the Late Cretaceous (65 million years ago) Hell Creek Formation. We have older rocks and dinosaurs as well, but they are buried thousands of feet below Earth's surface.

Some dinosaurs found here include hundreds of duck-billed dinosaurs called *Edmontosaurus*, the classic three-horned ceratopsians *Triceratops* and *Torosaurus*, a delicate plant eater called *Thescelosaurus*, the rare dome-headed *Pachycephalosaurus* and *Stygimoloch*, teeth and claws from *Tyrannosaurus*, and our North American "raptors" *Dromaeosaurus* and *Troodon*.

There are many more types of reptiles found in the rocks though - just remember - the flying pterosaurs and swimming mosasaurs are NOT dinosaurs, they are flying / swimming reptiles! Not to mention turtles, crocodiles, snakes, lizards, and other scaly beasties.

Reader Art

We want YOUR artwork! Please e-mail us a digital copy, or mail your traditional art (that you don't want returned) to our address in Bismarck, ND.

Just Imagine...

The *Champsosaurus* roused herself from sleep, sunlight warming her scales. She slid across the muddy bank, slipping into the pond water. Plumes of mud and silt drifted around her as her toes squelched into the muddy bottom. She tilted her head up which allowed her nose to reach the surface air. As she remained still, the mud and silt drifted back down, settling on her scales, masking her presence. To all appearances, she was just another muddy tree branch lodged into the bottom of the pond. She was patient, waiting silently, her eyes on a group of **gar** (armored fish) which swam in the distance. The fish suddenly darted about, spooked by a crocodile just entering the pond farther off. Their attention on the larger reptile, the gar swam by the champsosaur, oblivious to her silent power. A flash of teeth and a flick of her head, and one gar became breakfast. Clamping down, she waded from the water, wiggling the fish around so its fins wouldn't stick in her throat as she swallowed. Her belly now full, she relaxed once more under the sun's warming rays.

Special Interest:



www.nature.nps.gov/geology/nationalfossilday/index.cfm

National Fossil Day™ was started last year by the National Park Service and the American Geological Institute. It takes place in October during Earth Science Week, and this year the date falls on October 12. Check out their website to find events, activities, and contests associated with National Fossil Day™. The North Dakota Geological Survey and the State Historical Society of North Dakota are sponsors of National Fossil Day™.

Mission: "National Fossil Day™ is a celebration organized by the National Park Service to promote public awareness and stewardship of fossils, as well as to foster a greater appreciation of their scientific and educational values."

Come help us celebrate the diversity found in fossils as we look for clues to understanding the past. Bring your fossils in for identification from 1:00pm to 5:00pm to the Heritage Center Lobby in Bismarck, ND on October 12th!