

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!

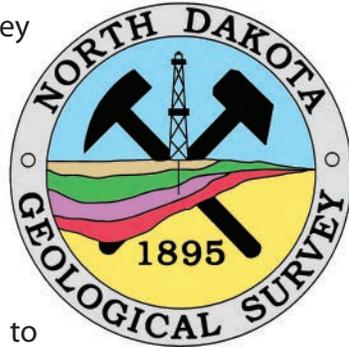
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Editor: Becky Barnes
North Dakota Geological Survey
600 East Boulevard
Bismarck, ND 58505

becbarnes@nd.gov

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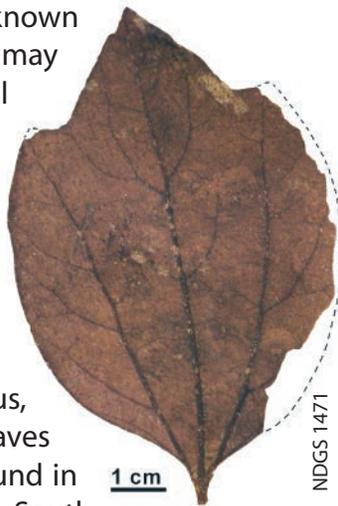
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Feature Fossil: *Marmarthia*

Sometimes a lot is known about our Feature Fossil – it may be common, or well researched. Other times very little is understood about a fossil – especially if they do not leave any descendants behind. The latter is the case of a plant called *Marmarthia*, a plant found during the Cretaceous, 66-70 million years ago. Leaves from the plant have been found in Montana, North Dakota, South Dakota, and Colorado, but we do not know a lot about it. What we do know, we can infer from other plants alive today, that are somewhat related to *Marmarthia*.

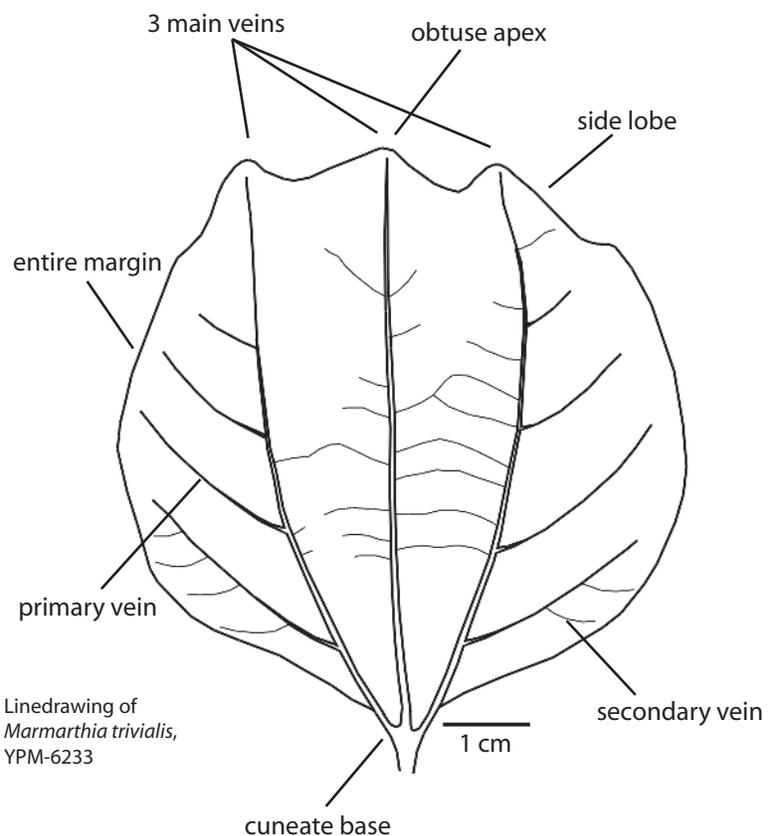
We know they are in the **class** Magnoliopsida, which are types of flowering plants. You may have noticed the name sounds awfully similar to another plant – the Magnolia! It also belongs to the **subclass** Magnoliidae, which house magnolias (which we already figured out), as well as nutmegs, laurels, cinnamon, avocado, and tulip trees. Of all those plants, *Marmarthia* is closest related to the **order** Laurales – which shrinks our list to the laurel, cinnamon, and avocado. Many of the Laurales are tropical or subtropical. This can tell us a lot about the climate and



weather that used to be in North Dakota when these plants were found.

As with most trees and shrubs, leaf placement on the plant can change its look – so there can be a lot of variation within one single plant. Leaves on the end of a branch may look very different than leaves closer to the trunk. With that known, here's what we know (and don't know!) about the *Marmarthia* plant:

The fossils found are generally single leaves, so how they are arranged on the larger plant is unknown. The leaves have an **entire margin** (meaning their edges are smooth), with three **main veins** (*palmate*) and numerous primary and secondary veins. The shape varies, depending on the species and leaf location, but can be **elliptical** (oval) to **obovate** (broad above the middle), with a short lobe on each side. The **apex** (tip) of the leaf is **acute** (tapers to a point) to **obtuse** (rounded, semi-circular). The base is **cuneate** (wedge-shaped).



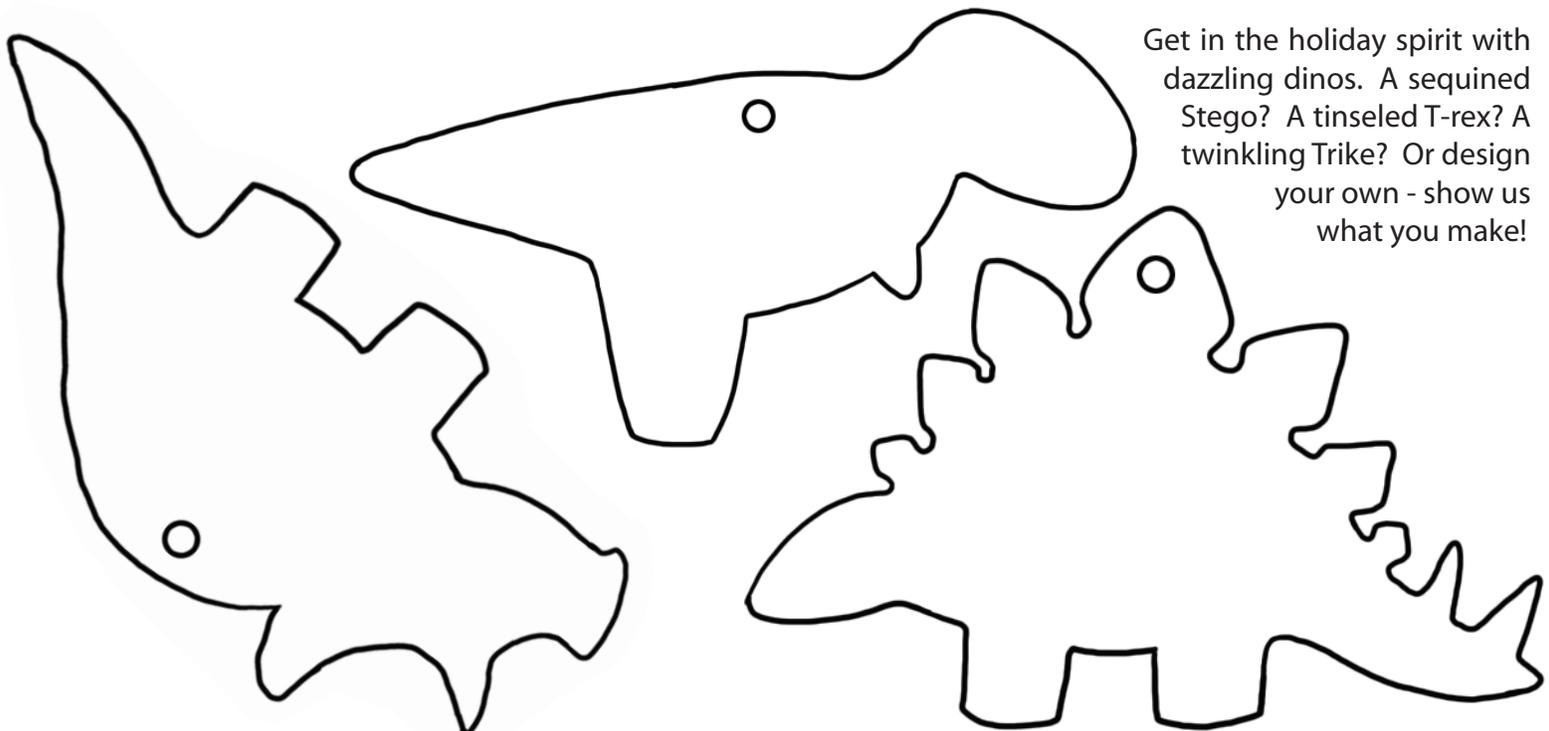
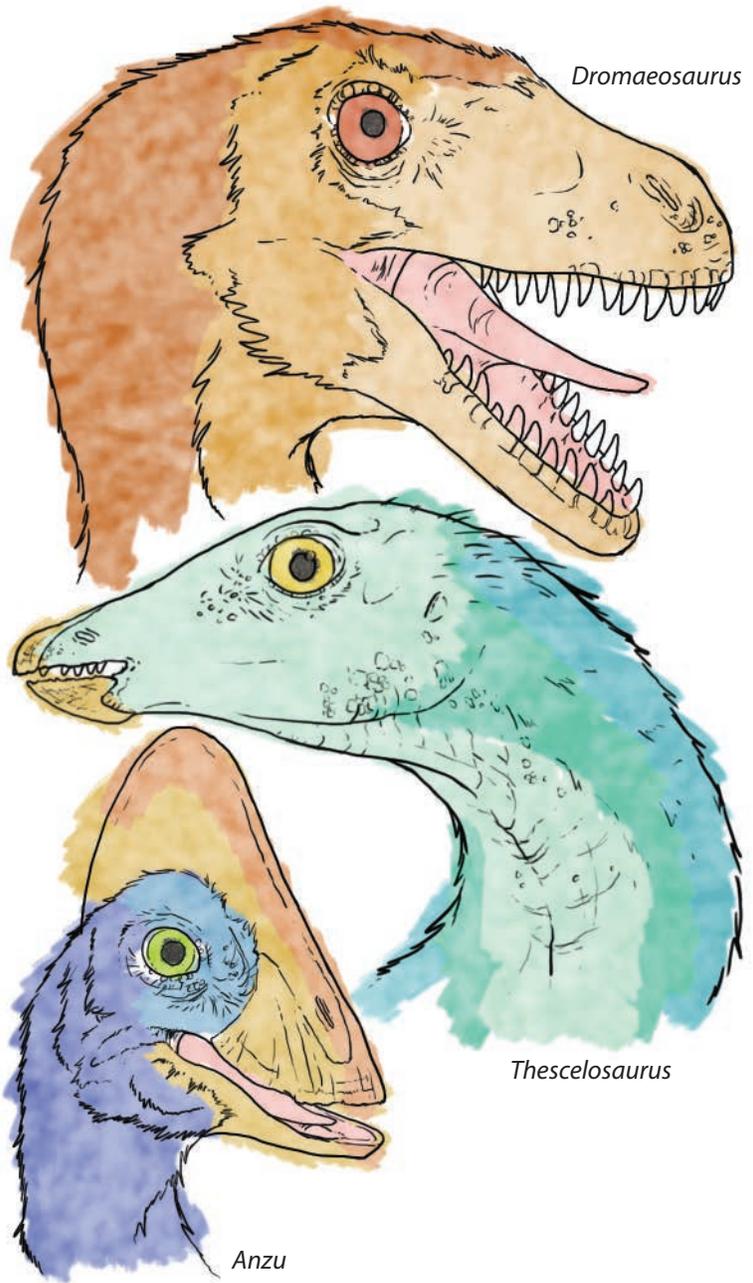
Ask Mr. Lizard

How many full dinosaur skeletons have been found in ND? - Brooke L., age 12

The easy answer is zero! There is a big misunderstanding with paleontologists, that we go out and dust off complete skeletons of dinosaurs and other animals. As much as I wish this was true, most of the time we work with prehistoric roadkill. The bits and pieces left over after scavengers and time have taken their toll. To get a complete skeleton, an animal would have to be *very* rapidly buried. The remains of Dakota the Dinomummy come close - the neck, body, legs, feet, arms and tail are all there - even skin! - but it's missing the animal's head. A very common occurrence, really.

Do dinosaurs have teeth? - Acelyn S., age 5

Most dinosaurs do have teeth. Many meat-eating dinosaurs have big pointy teeth with serrations like a steak knife. Plant-eating dinosaurs can have pointed teeth that snip leaves like scissors, or flat grinding teeth that mash plants to a pulp. Omnivores (creatures that eat both plant and meat, like us) can have a variety of tooth shapes. A few types like *Deinocoelurus*, *Oviraptor*, and *Gallimimus* had beaks instead of teeth. To the right we have a meat-eating *Dromaeosaurus* with sharp teeth, an herbivore or possible omnivore *Thescelosaurus* with snipping and pointed teeth, and another possible omnivore *Anzu* with no teeth.



Get in the holiday spirit with dazzling dinos. A sequined Stego? A tinsel T-rex? A twinkling Trike? Or design your own - show us what you make!