

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!

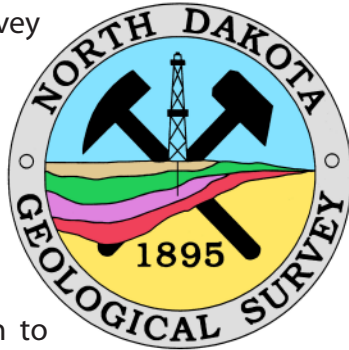
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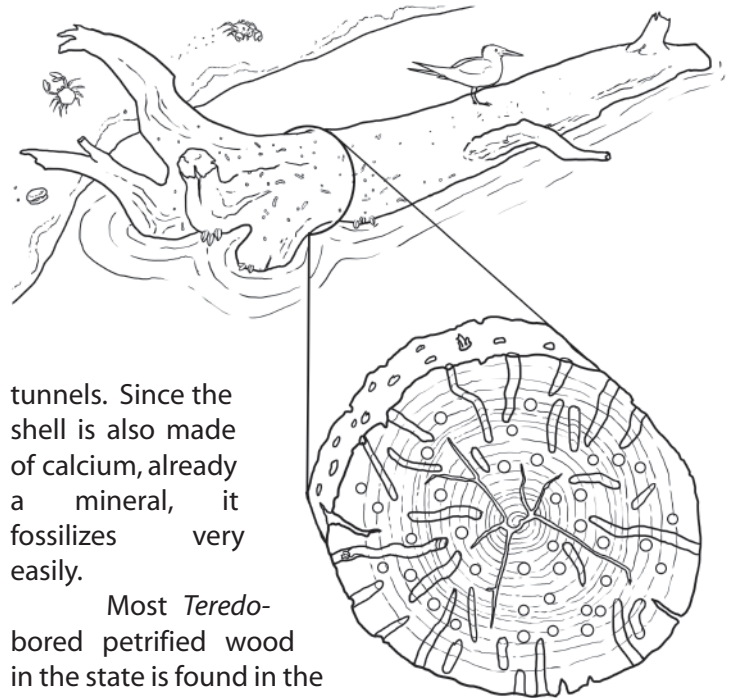
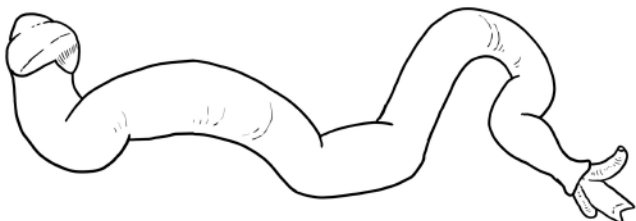
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<https://www.dmr.nd.gov/ndfossil/kids/newsletterkids.asp>



Feature Fossil: *Teredo*-bored Petrified wood

I'm sure many of you know North Dakota's State bird is the Western Meadowlark, and the State flower is the Wild Prairie Rose. Did you know we have a State fossil? It's called *Teredo*-bored petrified wood. Quite the name, huh? The petrified wood part is pretty straight forward, but what is that other part? *Teredo* are small clams, similar to ones alive today, that eat their way into driftwood, drilling holes as they go. *Teredo*, meaning wood-gnawing worm (Latin: terebro = to bore, perforate), are also called "ship worms" because they look like worms, and in ancient times bored holes into the hulls of wooden ships. Attached to the **anterior** (front) end of their long bodies are two shell-halves that put it into the Class **Bivalvia** along with other clams. Because the animals live within wood borings they are very protected from predators. Marine snails are one of the few creatures that can reach them.

Modern shipworms can be an annoyance for humans when they drill into wooden docks or boats. The petrified wood prehistoric *Teredo* drilled into looks very similar to modern shipworm-plagued driftwood. When the petrified wood is sliced open, occasionally you can find the remains of the clam shells, buried deep in the calcium-lined



tunnels. Since the shell is also made of calcium, already a mineral, it fossilizes very easily.

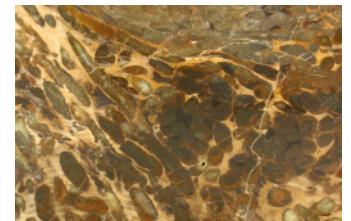
Most *Teredo*-bored petrified wood in the state is found in the Paleocene Cannonball Formation, which is about 60 million years old.

One of the exhibits in our new **Adaptation Gallery: Geologic Time** in the ND Heritage Center is an entire wall dedicated to fossilized plants, including our State fossil. A number of the specimens were donated to the State Fossil Collection by the Schlosser family. You can see some of these beautiful polished slabs and lapidary spheres on display this next spring. To learn more about the Schlosser collection, read Dr. John Hoganson's article here:

<https://www.dmr.nd.gov/ndgs/newsletter/NL0707/July%2007%20pdf/Schlosser.pdf>



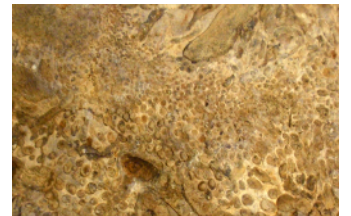
Left: modern shipworm infested driftwood.



Right: polished *Teredo*-bored petrified wood.

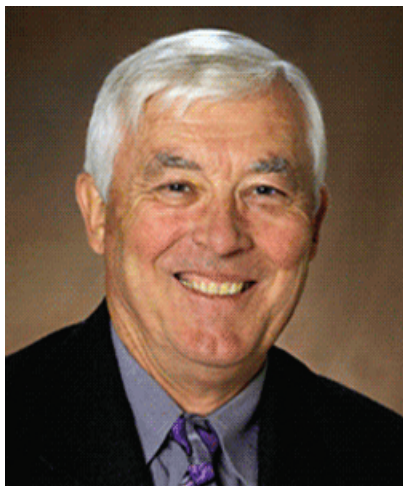


Left: white *Teredo* shells visible against polished surface of fossil.



Right: unpolished raw *Teredo*-bored petrified wood.

V.I.P. (Very Important Paleontologist):
Dr. Allan Ashworth, North Dakota State University, Fargo, ND



How old were you when you decided to be a paleontologist?

AA: 15

Was there an experience or event that triggered your decision?

AA: Searching for fossils in chalk pits (quarries) on the South Downs [England].

What plants or animals are / were your main study focus?

AA: Fossil beetles but marine inverts are what started my interest.

Do you have a favorite fossil animal?

AA: Not especially so .

What do you enjoy most about field work?

AA: The thrill of discovery but also the time to think about the significance of the discovery.

Where in the world have you traveled looking for fossils?

AA: Antarctica, Argentina, Canada, Chile, China, UK, USA (12 states).

What do you like most about research / lab work?

AA: To be associated with new interpretations - adding knowledge.

What has been your most exciting discovery so far?

AA: The discovery of fossil beetles and flies from rocks only 300 miles from the South Pole.

Is there anything you don't like, or that frustrates you with paleontology or fossils?

AA: No – after more than 50 years I'm still as enthusiastic as I have always been – problem now is that I can't see as well.

What advice would you give to aspiring paleontologists?

AA: Stay with your dreams but prepare yourself to work really hard – make sure to also work on your math, chemistry and English skills.

To read more about Dr. Ashworth and his travels, check out: <http://www.ndsu.edu/pubweb/~ashworth/>



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 traditional art to our address in Bismarck, ND.

Just Imagine...

The *Teredo* larva, only 1 millimeter long, attached itself to the submerged tree branch. This would be its home for the remainder of its life, between 1 and 3 years. As the clam ages, it develops a small, hard shell lined with ridges, assisting it with boring through the tough wood fibers. Bacteria within the clam help digest the wood shavings. Any residue is pumped out of the small tunnel by one of two siphons in the *Teredo*. The other siphon brings in fresh water, along with any bonus plankton, which is also eaten. Inside the tunnel, the body of the clam secretes a calcium substance which is deposited on the walls of its home. Most predators are deterred by the wooden fortress surrounding the animal. Smaller ones are **stymied** (prevented, hindered) by another calcium **septum** (dividing wall; Latin: saeptum = wall) at the tunnel entrance, which the vulnerable siphons can be pulled in and protected behind.