

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



Metasequoia - Dawn Redwood

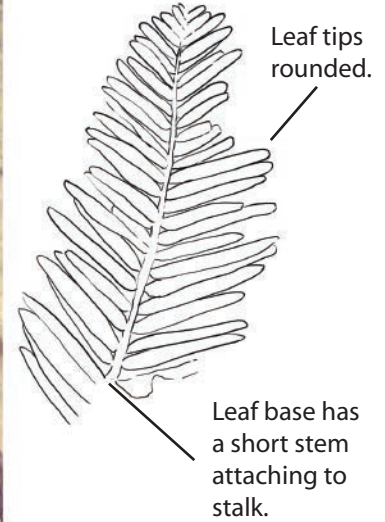
Metasequoia trees today are living fossils, having changed very little since its late Cretaceous ancestors. There is only one type of *Metasequoia* alive today – *M. glyptostroboides*. Unlike its relative the *Sequoia* (giant redwood), *Metasequoia* trees are **deciduous**, meaning their leaves fall off seasonally. Their leaves resemble little flat needles, which are bright green during the summer, and turn a reddish-brown in the fall. The cones produced by these trees are short, round, and scaled, 1.5-2.4cm in diameter. They are fast growing trees, and can reach up to 61 meters tall, with a 2 meter trunk diameter. Their trunks tend to flare at the base to support the large tree, a feature called **buttressing**. They prefer moist soils, and were found in many places across North Dakota in the past.



Metasequoia has a few close relatives, which make identifying fossil leaves a challenge. Although their name is similar, the leaves of the *Sequoia* tree are not! *Sequoia* leaves are tight, tiny, spiral-looking evergreen scales. *Taxodium* (cypress) leaves look similar, but are staggered, instead of paired. They are also twisted at the base of each leaf (**helical**). *Parataxodium* is similar to *Taxodium* in leaf arrangement, and similar to *Metasequoia* in leaf shape – so this one can be tricky!



Metasequoia



Taxodium



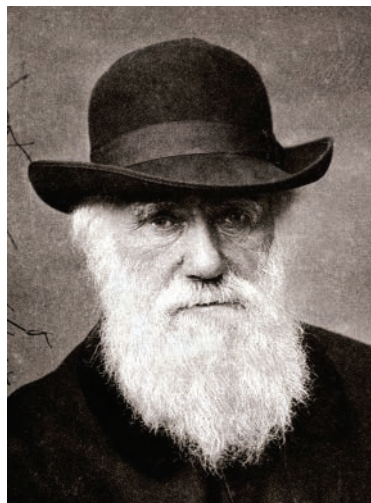
Quiz time: You are walking along, and come across this fossil leaf. Is it a *Metasequoia* or a *Taxodium*?



The answer is on the next page!

Darwin Day 2017

Charles Darwin was born on February 12, 1809. His book, *On the Origin of Species* was published in 1859 – the topic was natural selection.



Celebrations were held in 1909, for the 100th anniversary of Darwin's birth, and in 1959, for the 100th anniversary of his book. In 1995 scientists got together to initiate an annual Darwin Day, to be celebrated on February 12th. The mission is "to inspire people throughout the globe to reflect and act on the principles of intellectual bravery, perpetual curiosity, scientific thinking, and hunger for truth."

The ND Geological Survey, and the ND State University Geology staff teamed up to hold an event at the Fargo Public Library this year on February 18th. A brief talk was given about "Mutation is the Name, Survival is the Game," discussing anything from moth colors to bacterial

antibiotic resistance. Afterwards, everyone was invited to create their own species in a game. Each person picked a mutation number, a giant 10-sided die was rolled to see if your "number was up," and Cards of Doom were drawn to see what environmental catastrophe the species had to survive. Which traits were chosen (fast, armor, carnivore, nocturnal, camouflage, etc.) determined if the species would survive the encounter.

NDSU set up a wonderful mini-museum around the room. Plenty to see and touch! Scales from reptiles, skeletons, a comparison of bones from a tiny mole, to an enormous giraffe. One area was set aside for continental drift – matching animals on different continents, where land-bridges may have occurred, and where animals may have spread. Another section contained models of prehistoric and modern animals to give people a chance to see the strange and weird, as well as combine what they thought were related into groups.

Darwin Day was a blast, the audience curious, and everyone learned a little about science. We'll see you in 2018!

Leaf Quiz Answer: *Metasequoia*. It has paired leaves, not alternating, and the leaf tips are rounded, not pointed.

Time for a puzzle tree-t!

M
M Z B
F P D H Q
E K N J N B D
R A R N S T P I A
I K B I T R E E T L B
W Z B R B H D Z W C G
P F A K X R O
L E Q O N V C T N
T E T Y E M C G Q V T
V Y A R E Z E Y H L A A R
B C J F I I D T P G E U X C R
W W L G Q F D I A R C Y H O X F B
Q L N U C A I E M S E H F S D M A J Y
B O S O D Q E D A E S N R D I D O G K
W O F D A O Q S R O O U P
R E A N B K B U Y A E E M O P
M K A C M Y O M O G C P D R F S L
C X O R D B P T Z I H Z M R W I Z P A
Y E B A J E C O A G A J G E M C O Y V D N
D X X T U G I N C R E T A C E O U S O G I T T
Z M Z I C B A R K D Y M M H Z B A Q B D J I I
K F Z
D O L
C S E
E S Y
E I J
P L K

Find the words listed below in the tree:

BARK	BRANCH	CRETACEOUS
CYPRESS	DAKOTA	FOSSIL
LEAF	METASEQUOIA	
PETRIFIED	PLANT	REDWOOD
SWAMP	TAXODIUM	TREE

2017 Public Fossil Digs

This year we have three digs scheduled. Budgets are tight across the State, and we had to tighten our belts too! There are still some great opportunities however. To register, check them out in greater detail on our website: <https://www.dmr.nd.gov/ndfossil/digs/>

June 26-30: Dickinson Area. 30-40 million year old mammals. Lots of walking (prospecting) and digging.

July 13-16: Medora. 55-60 million year old swamp creatures, such as crocodiles, turtles, and fish. Quarry site - sit and dig.

July 24-28: Bismarck Area. 67 million year old dinosaur site; includes some hiking and digging.