

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/>



Feature Fossil:

Callianassa & *Ophiomorpha*

This issue you get two fossils for the price of one! Many times with fossils, you get one aspect of a living organism. Maybe it's a shell that shows amazing growth rings, or a skeleton that gives you an idea of size and build. Sometimes, two types of fossils can relate to the same organism. In this case, we have the hard shells (**carapace**) from small shrimp that lived in the Cretaceous seas and beaches. These shrimp, called *Callianassa*, have descendants alive today. We call them "ghost shrimp," because their shells are **semi-translucent**, allowing light and color to show through (including their internal organs!). The carapace tells us what the



animals looked like, but not a lot about habitat. For instance, males had one pincer that is significantly larger than the other – but what are they used for?



Callianassa claw

Enter *Ophiomorpha*, a trace fossil (also called an "ichnogenus"; ichno = trace). Found alone, we know they are burrows from something that dug into soft sand on beaches and shallow water – but what?

Thankfully modern ghost shrimp still construct burrows like their ancestors did, and we were able to link the two together quickly. This is not always the case – sometimes the creator of a trace fossil remains in the shadows of history.



Branching *Ophiomorpha* with fecal pellet pebbling



Callianassa dig winding, often complex burrows in soft sand. If you have ever built a sand castle, you know that sand is not the most stable of things to build with. So how would a tiny shrimp battle the forces of gravity? Poop. That's right - they line the insides of their burrows with fecal pellets as wall support. This gives their burrows a distinctive pebbled appearance. Newer burrows may have a less pebbly surface than old ones.

Public Fossil Dig Addition: Pembina Gorge

With the hard work of the ND Parks and Rec, we were able to add the Pembina Gorge public dig back in to our summer lineup. August 8th-12th, 2017. For more information, check out:
www.dmr.nd.gov/ndfossil/digs/

What is your DINOSAUR name?

A	ornitho-	"bird"
B	cerule-	"blue"
C	apato-	"deceptive"
D	phobo-	"fearsome"
E	plateo-	"flat:"
F	colosso-	"gigantic"
G	viridi-	"green"
H	cerat-	"horned"
I	nodo-	"lumpy"
J	carno-	"meat"
K	mono-	"one"
L	struthio-	"ostrich"
M	elasma-	"plated"
N	compso-	"pretty"
O	veloci-	"speedy"
P	stego-	"roofed"
Q	dromaeo-	"running"
R	lepto-	"slender"
S	micro-	"small"
T	kentro-	"spiked"
U	acantho-	"spiny"
V	ankylo-	"stiff"
W	alti-	"tall"
X	deino-	"terrible"
Y	bronto-	"thunder"
Z	tyranno-	"tyrant"

First letter of your first name

+

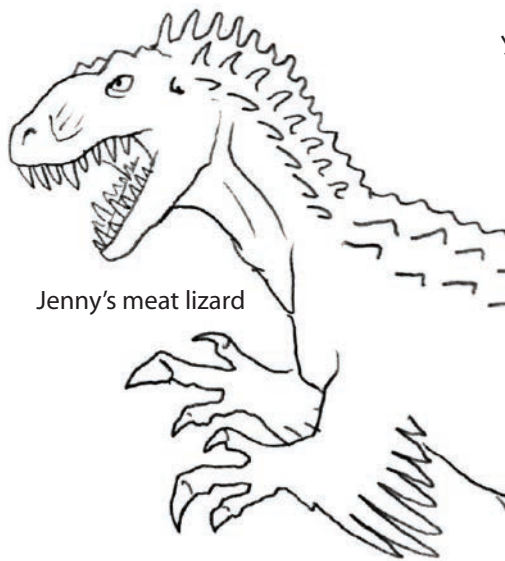
Birth month

January	-canthus	"spiked"
February	-cephalus	"head"
March	-ceras	"horn"
April	-derm	"skin"
May	-don	"tooth"
June	-gnathus	"jaw"
July	-lestes	"robber"
August	-mimus	"mimic"
September	-ops	"face"
October	-saurus	"lizard"
November	-taurus	"bull"
December	-thero	"beast"

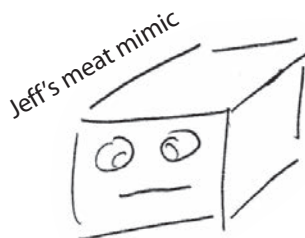
On a whim, the paleo crew decided to construct a Dinosaur name game. We had seen "What's Your Superhero Name" and a "What Is Your Band Name" floating around the internet, but never a really good dinosaur one. We came up with a list of around 45 prefixes and 20 suffixes, then picked our favorites to create the lists above.

Becky tried it, and got "Cerulederm," or "blue skin." She figured that feathers would be a good reason to have blue skin - so she doodled up a dino-blue-jay. Clint got "Apatolestes," or "deceptive robber." Jeff got "Carnomimus," or "meat mimic." They figured that must mean tofu...

So what's your dinosaur name?



Jenny's meat lizard



Jeff's meat mimic



Becky's blue skin



Jessica's meat face

Just Imagine...

The ocean tide was going out. The gentle waves that covered the burrow became less and less, until the last slaps of water began shoving loose sand down the open hole. The top of the burrow was in danger of collapsing, and an agitated pair of pincers, one larger than the other, shoved up through the sand. Tiny black eyes took in the sun's glare, and antennae drooped without the support of surrounding water. A small segmented body wiggled its way up, legs pushing the sand away, until the whole ungainly creature lay on the surface. Slowly moving away from the vulnerable tunnel entrance, the shrimp crawled a small distance away, stopping for a snack here and there. Left exposed, the translucent shrimp would dry up and perish under the unforgiving sun. Wiggling into the still wet sand, it began moving its legs, kicking globs of sand on top of its hard shell, forming a tiny cave. Here it would wait until the tide returned, when it would begin the process of unclogging its burrow again.