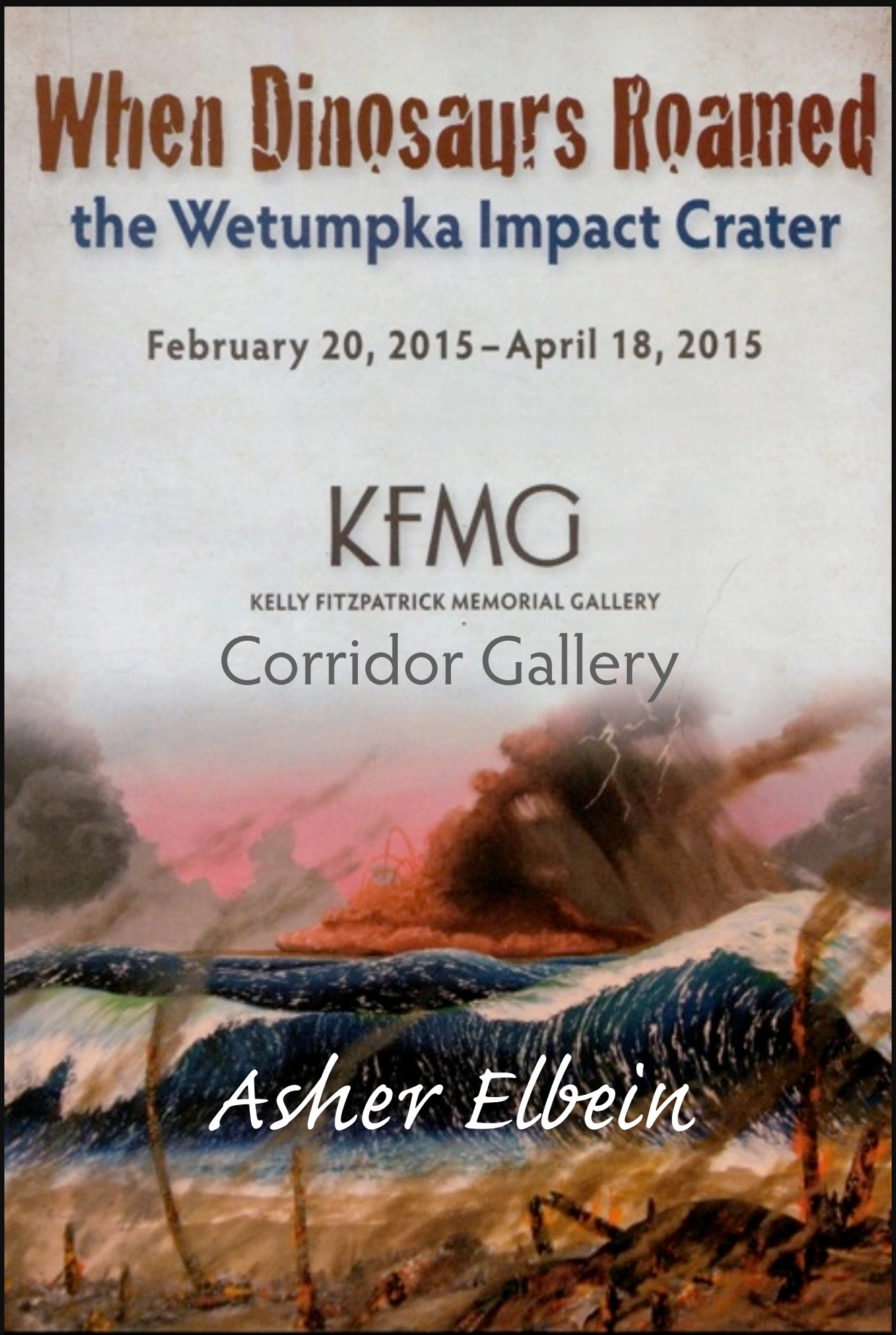
When Dinosaurs Roamed
the Wetumpka Impact Crater

February 20, 2015 – April 18, 2015

KFMG

KELLY FITZPATRICK MEMORIAL GALLERY

Corridor Gallery



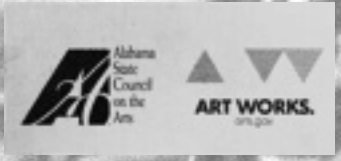
Asher Elbein

408 SOUTH MAIN STREET | WETUMPKA, ALABAMA 36092 | KFMG-ONLINE.ORG

More than 85 million years ago, during the Cretaceous Period, a large meteor impacted the area now known as Wetumpka, alabama. The impact resulted in a crater approximately five miles in diameter causing significant changes to both the landscape of the area and the inhabitants of both land and sea. At that time, the Wetumpka area was largely covered by an inland sea with barrier islands, and the climate was very different from today. This impact crater is regarded as one of the best preserved marine impact craters in the world.

The exhibition includes large scale paintings, iron sculptures, exhibition models, fossils, plants and a series of oversized educational storyboards outlining much of the scientific research about the crater area. The exhibition also features the work of Karen Carr, Jerry Armstrong, Rick Spears, Jonathon Hughes, Wayne Atchison, Larry Percy and Asher Elbein. Additionally, the exhibition includes a juried exhibition of 65 kindergarten through grade twelve student work and a juried exhibition of 35 adult artists from throughout Alabama.

Major funding provided through a grant awarded to the KFMG by the Alabama State Council on the Arts, which is made possible through funding from an annual appropriation by the Alabama State Legislature and the National Endowment for the Arts. This public support enables the Kelly Fitzpatrick Memorial Gallery to reach new audiences, foster community development, provide high quality programming, and demonstrate the importance of the arts as a component for quality of life in Alabama. Additional support provided by the City of Wetumpka, the Wetumpka Impact Crater Commission, the Kelly Fitzpatrick Memorial Gallery and Wind Creek Casino.



Major Funding Provided by:

Alabama State Council on the Arts and National Endowment for the Arts

SCHEDULE OF EVENTS

Gallery Hours: Monday through Friday from 9am – 4pm, Saturday 10am - 3pm
Docent Guided Tours: Thursday and Saturday between the Hours of 10 am until 3pm.
Student Reception and Award Ceremony: Thursday, March 5, 2015 from 3:30 – 4:30
Adult Reception and Award Ceremony: 5:00 – 6:30 pm
Annual Crater Lecture: Thursday, March 5, 2015 @ 7pm
(Dr. David King@ the Wetumpka Civic Center)
Annual School Crater Tours: Friday, March 6, 2015
Annual Public Crater Tours: Saturday, March 7, 2015

"Choose to Know" Saturday Lectures that are associated with the exhibition "When Dinosaurs Roamed: The Wetumpka Impact Crater" at the Kelly Fitzpatrick Memorial Gallery. All Saturday lectures are free and open to the public and will be presented in the Kelly Fitzpatrick Memorial Galley. Saturday lectures begin at 11am.

- February 21, 2015 @ 11 am - "Alabama's Remarkable Biodiversity and Paleobiodiversity." June Ebersole of the McWayne Science Center, Birmingham Alabama

- February 28, 2015 @ 11 am - Meteorites and Art, Jerry Armstrong, Cosmic Artist, Atlanta Georgia

- March 5, 2015 @ 7pm – The Science of the Wetumpka Impact Crater, Dr. David King, Auburn University Professor of Geology at the Wetumpka Civic Center

- March 21, 2015 @11am - Artists Talk, Geologically Speaking: The Kerygma Series, Larry Percy, Associate Professor of Art of Troy University, Troy, Alabama

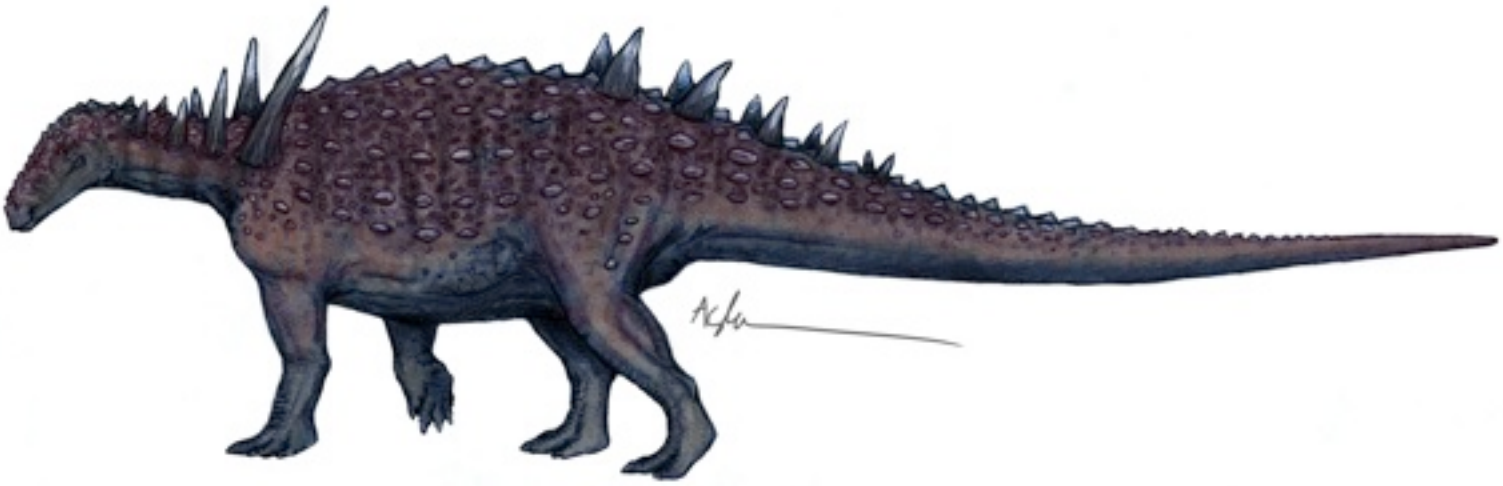
- March 28, 2015 @ 11 am - Dana Ehret of the Alabama Museum of Natural History, the University of Alabama, Tuscaloosa, Alabama, "New Fossil Finds for the Alabama Museum of Natural History"

- April 11, 2015 @ 11 am - Art and Science and Making It Up As I Go Along: How to Create Paleo Restoration Models. Rick Spears of the Fernbank Science Center, Atlanta, Georgia

- Friday, May 1, 2015 (Time to be announced) Artists Talk, Paleoart and the Work of Karen Carr, Karen Carr, International Paleoartist of New Mexico

Ashere Ellbein

As a student the University of Alabama, Tuscaloosa, Alabama Ashere Elbein embarked on a project to illustrate ten Alabama dinosaurs in consultation with Dana Ehret of the Alabama Natural History Museum and Jun Ebersole of the McWayne Science Center. The work was based on actual Alabama fossil finds and was produced using both traditional drawing media and digital media. We really do not know the coloration of dinosaurs for the most part, but in some cases he used examples of current animals as a reference to help make those decisions. Asher currently works as a freelance writer in Austin, Texas.



Alabama Nodosaurid
Digital Drawing
8" x 10"

About this Image:
Nodosaur fossils are reasonably common in Alabama marine deposits, often where carcasses washed out to sea and were scavenged by sharks.

Nodosauridae represents a group that traditionally includes Nodosaurus, Edmontonia, and Sauropelta. The nodosauridae had longer snouts than their akylosaurid cousins. They did not sport the archetypal 'clubs' at the ends of their tails, but rather, their most pronounced physical features were their spikes. Nodosaurids had very muscular shoulders, and a specialized knob of bone on each shoulder blade called the acromial process. It served as an attachment site for the muscles that held up their large parascapular spines. These spines would be used for self-defense against predators. They had wide, flaring hips and thick limbs. Most nodosaurid finds are from North America. They had smaller, narrow beaks than the ankylosaurids, which likely allowed them to be very selective over what plant matter they grazed on. They sported a very small brain size in proportion to their body, second only to the Saurischian sauropods. They were also very slow moving, largely because of the extreme weight of their armored skin. Their top speed was likely less than 10km/hour.

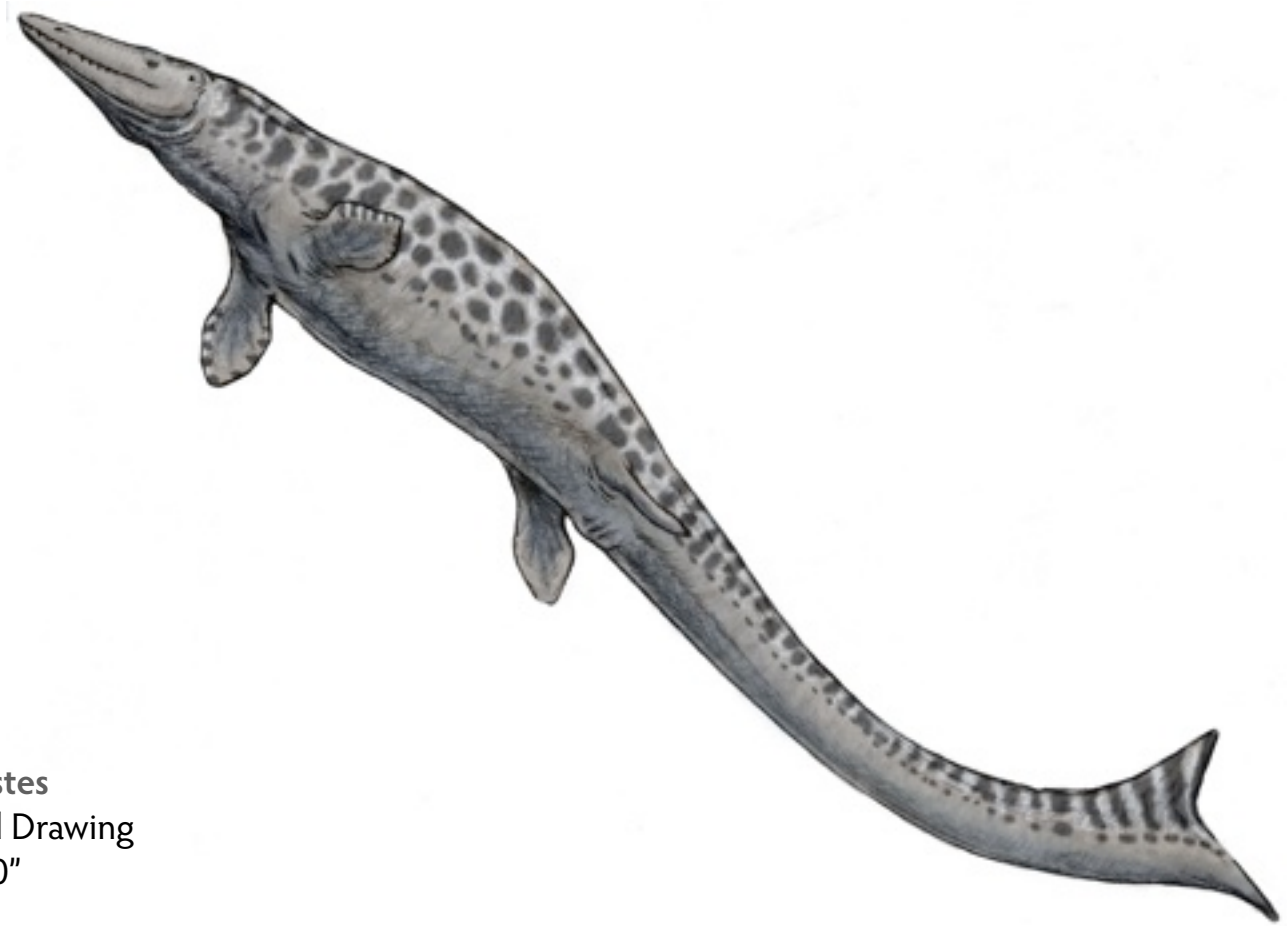
Alabama Dromaeosaurid
Digital Drawing
8" x 10"

About this Image:
This little fellow is known only from some teeth, a tiny sickle claw, and some feather imprints. The coloration is loosely based around the Caracara, or Mexican eagle.

Dromaeosaurs constitute a small clade of theropod dinosaurs which exhibit some highly derived characteristics that they all share, especially modifications of the forelimb allowing for a flexible seizing function (which is thought to have been modified to create the bird "flight stroke".) According to current thinking, birds are hypothesized to have shared a common ancestor with the dromaeosaurs sometime in the Jurassic period; Dromaeosauridae is thus termed the sister group of the clade Aves (which includes all birds.) It may even be that the ancestry of birds lies within this group, which would make them dromaeosaurs too, but this is not at all established.

Appalachiosaurus montgomeriensis
Digital Drawing
8" x 10"

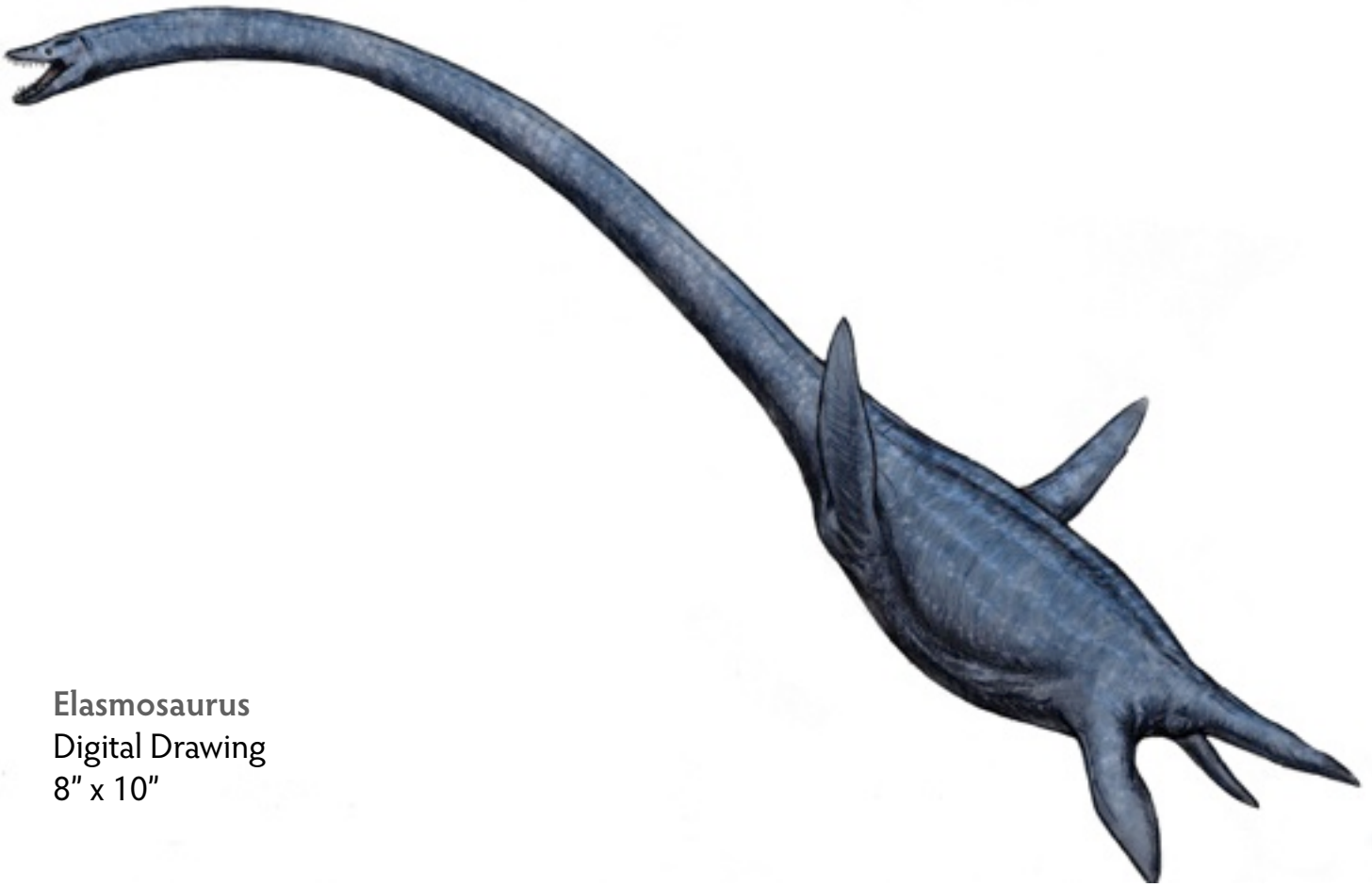
About this Image:
The name of this dinosaur "appalachian dinosaur from Montgomery" - an allusion to the fact that it comes from the Late Cretaceous Appalachia division of North America, and was found in the Demopolis Formation in Montgomery County, Alabama in the 1980's. It was not formally described and named until 2005. Appalachiosaurus is closely related to the Tyrannosauridae, the family of theropods (meat-eating dinosaurs) to which Tyrannosaurus rex belongs. There are hints that early tyrannosaurs in various parts of the world did not have the tiny, two-fingered arms of the later tyrannosaurs like T. rex, Albertosaurus, Daspletosaurus, etc., but rather had the more typical theropod build of a large arm and three fingers. Because of the separation of Appalachia, Appalachiosaurus had evolved from a primitive tyrannosaur stock and still retained a large arm. In fact, although T. rex was fully twice the body size of Appalachiosaurus, it had an arm one-half the size of an Appalachiosaurus arm. While the tiny arms of T. rex have given rise to a debate about whether it was an active hunter or a scavenger, there seems little doubt that Appalachiosaurus was a capable hunter. Pronounced: ap-a-lay-chi-o-sawr-us munt-gum-er-e-in-sis



Clidastes
Digital Drawing
8" x 10"

About this Image:
This Clidastes is around 20 feet long, somewhat cute for a giant reptilian predator, and is known from some truly gorgeous preserved specimens. This particular one is Artemis, who can be seen in the Alabama Museum of Natural History. It was discovered, originally, in Alabama, but has since been recovered from many other areas that were once near-shore environments of the Western Interior Seaway.

Clidastes was the smallest of the mosasaurs. Adults reached lengths of about 12 or more feet. The relative length of the body compared to the length of the tail is much longer in Clidastes than in other mosasaurs. It also had more teeth. A recent paper (1999) by Sheldon and Bell suggests that Clidastes was a primitive form and much closer to the terrestrial species that re-entered the oceans in the middle Cretaceous. They probably fed on small fish and squid, and were in turn preyed upon by larger mosasaurs such as Tylosaurus. Clidastes becomes the most commonly found mosasaur in the upper chalk, and possibly is an indication that the Western Interior Seaway was becoming narrower and shallower by that time.

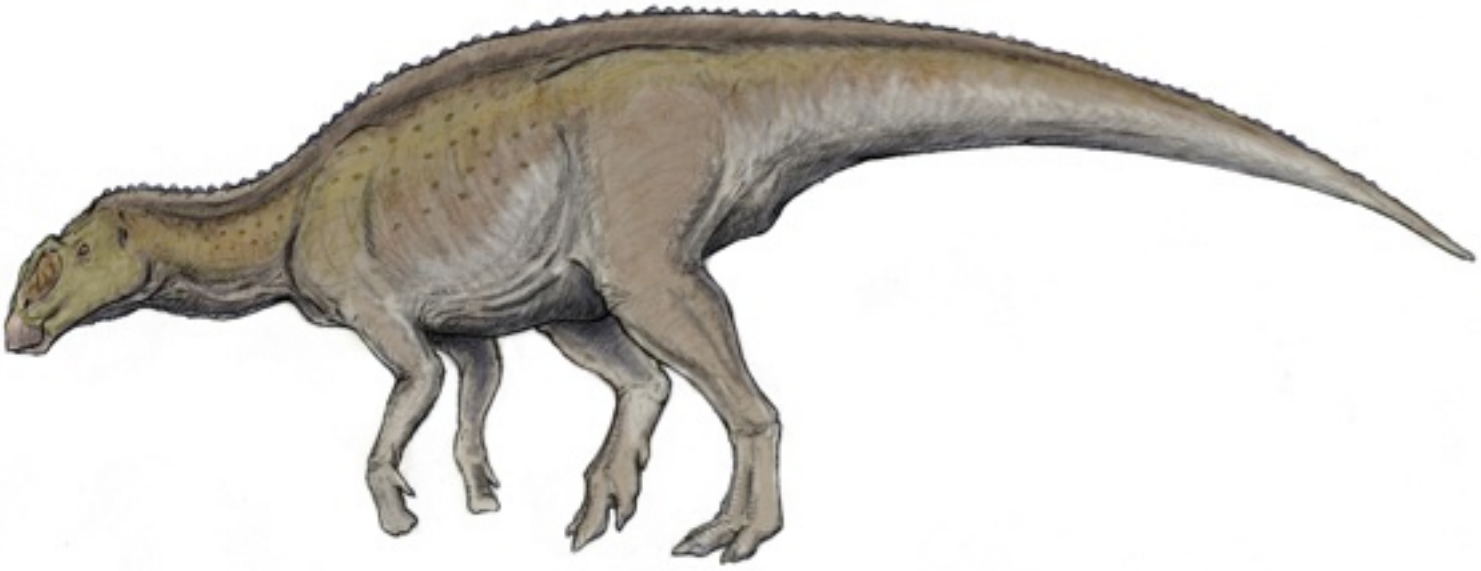


Elasmosaurus
Digital Drawing
8" x 10"

About this Image:

Elasmosaurus was about 46 ft. in length and weighed over 2.2 short tons, making it among the largest plesiosaurs. Like most plesiosaurs, Elasmosaurus was incapable of raising anything more than its head above the water as it is commonly depicted in art and media. The weight of its long neck placed the center of gravity behind the front flippers. Thus Elasmosaurus could only have raised its head and neck above the water if in shallow water, where it could rest its body on the bottom.

Elasmosaurus was a slow swimmer and may have stalked schools of fish. The long neck would allow Elasmosaurus to conceal itself below the school of fish. It then would have moved its head slowly and approached its prey from below. The eyes of the animal could have had stereoscopic vision, which would help it find small prey. Hunting from below would also have helped by silhouetting the prey in the sunlight while concealing Elasmosaurus in the dark waters below. Elasmosaurus probably ate small bony fish, belemnites (similar to squid), and ammonites (mollusks). It swallowed small stones to aid its digestion. Elasmosaurus is believed to have lived mostly in open oceans. The paddles of Elasmosaurus and other plesiosaurs are so rigid and specialized for swimming that they could not have come on land to lay eggs. Thus it most likely gave live birth to its young like modern sea snakes.



Lophorhothon atopus
Digital Drawing
8" x 10"

About this Image:
The first discovery was a young Lophorhothon atopus, a hadrosaur (duck-billed dinosaur) representing a new genus and species, from the Mooreville Formation at Harrell Station, Dallas County. Hadrosaurs are the most common dinosaurs in all eastern U.S. Cretaceous deposits, but the Lophorhothon type specimen is the only one known in this region with sufficient skull preservation to show that it had a "Roman-nosed" nasal structure and several unique details.

Lophorhothon Family Hadrosaurs were herbivorous dinosaurs that ranged from 24 to 35 feet long. They were largely bipedal, but their front limbs were sturdy enough to allow for some four-legged walking, standing, and feeding. Most hadrosaur skulls feature flattened, duck-like mouths developed from wide, toothless upper and lower front jawbones. Hadrosaurs had long rows of grinding rear teeth that the animals used to process vegetation. Hadrosaur skulls also usually display a variety of odd crests, formed by their nasal and upper jawbones. The more primitive hadrosaurine subfamily, of which Lophorhothon is a member, often developed a "Roman-nose" shape formed by a high, narrow nasal ridge.

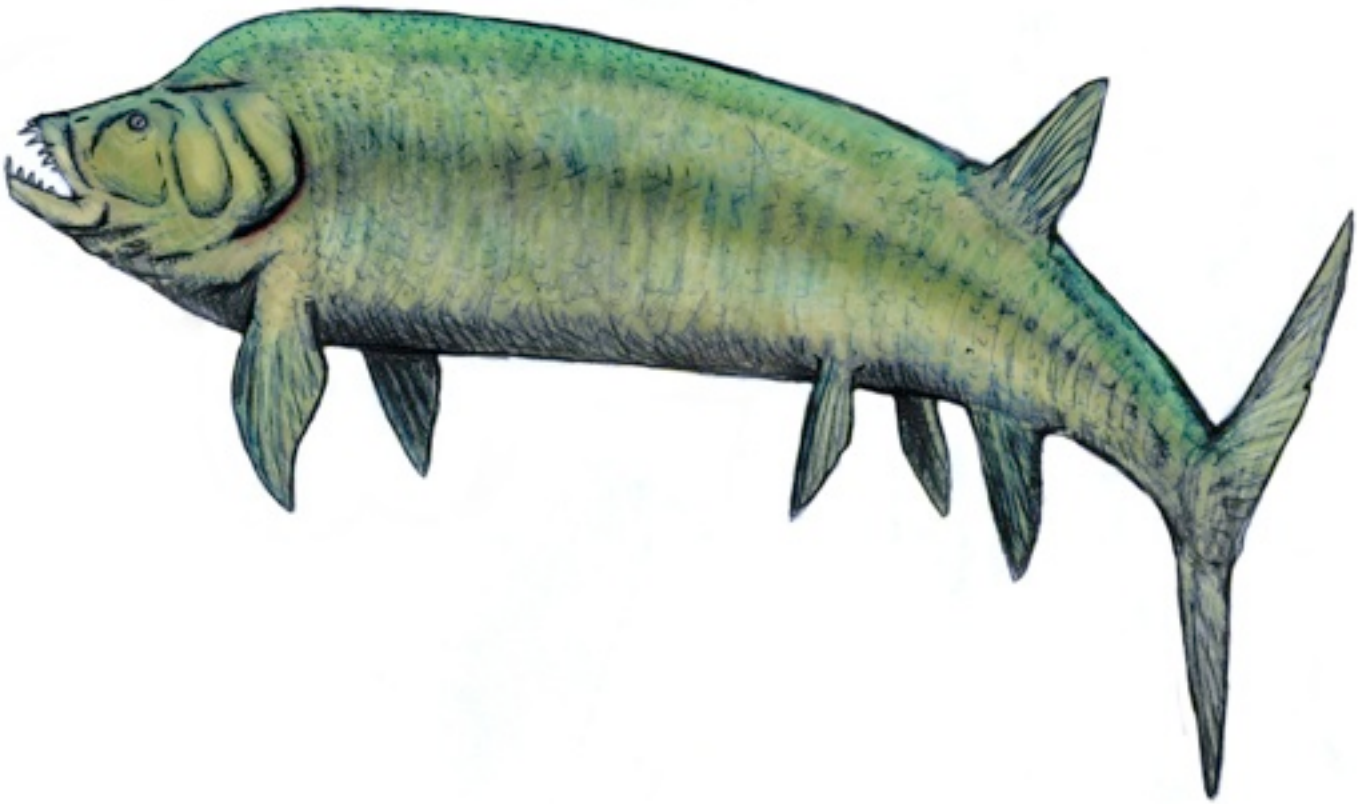
Pteranodon
Digital Drawing
8" x 10"

About this Image:
Pteranodons were flying reptiles (pterosaurs) that were about 6 feet long, had a 25-33 foot wingspread, and weighed about 35 pounds; its standing height was about 6 feet. This wingspan is longer than any known bird. Pteranodons had hollow bones, were lightly built, had almost no tail, and small bodies; they may have had fur. They had large brains and good eyesight. Some pteranodons had long, lightweight, bony crests on their heads that may have acted as a rudder or stabilizer when flying, or may have been a sexual characteristic. They had no teeth. A leathery membrane covered Pteranodon wings. This thin but tough membrane stretched between its body, the top of its legs and its elongated fourth fingers, forming the structure of the wing. Claws protruded from the other fingers.

Pteranodons were reptiles, but not dinosaurs. Pteranodons lived during the late Cretaceous period about 85-75 million years ago. Although they had no teeth, Pteranodons were carnivores. They ate fish (which they caught at the surface of the oceans), mollusks, crabs, insects, and scavenged dead animals on land. They may have hunted like modern-day pelicans, scooping fish out of the water and swallowing them whole.

Tylosaurus propython
Digital Drawing
8" x 10"

About this Image:
Tylosaurus was a mosasaur, a large, predatory marine lizard closely related to modern monitor lizards and to snakes. Along with plesiosaurs, sharks, fish, and other genera of mosasaurs, it was a dominant predator of the Western Interior Seaway during the Late Cretaceous. Tylosaurus was among the largest of all the mosasaurs (along with Hainosaurus and Mosasaurus hoffmannii), reaching maximum lengths of more than 49 feet. A distinguishing characteristic of Tylosaurus is its elongated, cylindrical premaxilla (snout) from which it takes its name and which may have been used to ram and stun prey and also in intraspecific combat. Stomach contents associated with specimens of Tylosaurus indicate that this ferocious mosasaur had a varied diet, including fish, sharks, smaller mosasaurs, plesiosaurs, and flightless diving birds such as Hesperornis. In some paleoenvironments, Tylosaurus seems to have preferred shallow, near - shore waters (as with the Eutaw Formation and Mooreville Chalk Formation of Alabama), while favoring deeper water farther out from shore in other environments (as with the Niobrara Chalk of the western U.S.).



Xiphactinus audax
Digital Drawing
8" x 10"

About this Image:
Xiphactinus was a fast, strong swimmer and may have leapt from waters to dislodge parasites from its skin. It is also possible that there were lots of little fish that swarmed around it, nibbling on parasites, much the same as they do today for larger fish. It was one of the largest bony fish of the Late Cretaceous and is considered one of the fiercest creatures in the sea. A powerful tail and wing-like pectoral fins shot the 17-foot-long monster through the surface waters of the ocean. Unlucky fish and unsuspecting seabirds were snared inside Xiphactinus's upturned jaw, which was lined with giant, fanglike teeth, giving it an expression akin to that of a bulldog. A 13-foot-long Xiphactinus could open its jaw wide enough to swallow six-foot-long fish whole, but it itself was occasionally prey to the shark Cretoxyrhina. It trolled an ancient ocean called the Western Interior Seaway, which covered much of central North America during the Cretaceous. Though long extinct, if alive today the bony fish would look like a giant, fanged tarpon. One Xiphactinus on display at a museum in Kansas has a complete, well-preserved fish inside it. Scientists believe the struggling prey ruptured an organ of its captor as it was swallowed, killing the larger fish.

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