GIANT DEVONIAN ARMORED FISH SKULL
Titanichthys Termieri
Lower Femannian, Upper Devonian
Tafilalt, Morocco

The Titanichthys was an immense armored fish, part of the Arthrodire order that ruled the oceans of the Devonian, 400 million years ago. Growing up to 30 feet in length, the Titanichthys was the Paleozoic equivalent of the basking shark; swimming around engulfing small prey in its immense mouth. Found several years ago in the rocky deserts around the Anti-Atlas Mountains of Morocco, the present specimen was carefully removed from hard limestone and reassembled into its original inflated three-dimensional shape.

The armor plates are very well preserved and have great textural details. A few elements on the skull had been eroded away but have been professionally restored to maintain scientific accuracy; there is minimal restoration to the skull. All of the armor plates have been fitted to brackets on a custom metal base that allows the skull to stand almost 5 feet tall.

Only three skulls of Titanichthys have ever been found, and the present skull happens to be the largest of the three measuring 62 inches long, 44 inches wide, and 28 inches tall. The mouth is partially agape, with an opening 28 inches across.
The Arthrodira Order

The Arthrodira order consisted of armored jawed fish that existed for 50 million years during the Late Devonian. Arthrodiras ranged from small bottom-dwellers measuring only 2 feet long, to monstrous apex-predators such as the Dunkleosteus, which grew over 30 feet long. Fish of the order did not have distinct teeth, but rather modified armor plates that served tooth functions; for example, the armor plates on the jaws of the Dunkleosteus have sharpened shearing edges for cutting. One useful armor function in the Arthrodira’s armor is a moveable joint on the top of their skull called a cranio-thoracic joint or nuchal gap; this allowed for the skull to move up while the jaw moved down, resulting in a larger mouth by which a fish like the Titanichthys could engulf prey. The most diverse vertebrates of the Devonian; the Arthrodiras filled many marine ecological niches. Their rule came to an end with the mass extinction at the conclusion of the Devonian.

The Titanichthys

The Titanichthys were amongst the larger members of the Arthrodira order. Titanichthys was first found and described in the world-famous Cleveland Shale of Ohio in the 1800’s. The first partial specimens of Titanichthys termieri were discovered in Morocco by French geologist Henri Termier in the 1940s and described by Paleontologist Jean-Pierre Lehman in the 1950’s. Aside from isolated pieces of armor, only three complete skulls have ever been found and reconstructed. Unlike its predacious cousin the Dunkleosteus, the Titanichthys did not have shearing surfaces on their jaws, but rather blunt bracketed jaws. These jaws and the large gaping mouth suggest that this monster fish was a pelagic feeder that engulfed smaller prey in its mouth and filtered out the water. There is evidence that the fish once possessed a pair of large pectoral fins that would have helped it keep balance while vacuuming up prey. Based on the size of the skull, the Titanichthys most likely grew to lengths similar to the Dunkleosteus; up to 30 feet in length.
HUGE FEROCIOUS DINOSAUR AGE FISH
Xiphactinus audax
Cretaceous
Upper Smokey Hills Chalk, Niobrara Formation, Logan County, Kansas

Swimming in the Late Cretaceous seaway of North America during the age of dinosaurs 80 million years ago, Xiphactinus audax was a large aggressive bony fish. With a thick boned skull and a mouth full of sharp piercing teeth, the Xiphactinus reached lengths of twenty feet and sometimes consumed entire fish whole.

This magnificent specimen is over fourteen feet long and has exceptionally well preserved bones throughout. The chalk matrix it was discovered in was soft and fragile; therefore it was collected using the plaster slab method. The bones were cleaned in the field, a frame was constructed and plaster was poured directly onto the fossil. After the slab was carefully removed from the field, it was flipped and meticulously prepared from the underside in a laboratory. The present specimen is a composite of two specimens; the head, front fins, and a few vertebrae are from one individual while most of the vertebral column, fins and tail are from another. Great care was taken in making sure that the specimens were of the same size and scientifically accurate. There is very little reconstruction and the specimen is over ninety-eight percent complete. The fossil is displayed in a natural death pose with a minimal amount of repositioning of elements. The jaws of the skull were opened to display its fine teeth, which are original. Several of the front teeth measure over two inches in length. The bones have been stabilized with a hardener and tinted for uniform coloration. The entire specimen has been set into a large trimmed and frame plaster slab that duplicates the original matrix in color and texture. The fossil fish itself measures 14 ¼ feet in length and almost 3 feet tall, set into a dark wood frame measuring 15 feet long by 3 ¼ feet tall. The lower and upper jaws each measure 13 inches in length; a significant and robust size for this species.

The biology of Xiphactinus; the “Sword-Ray”

The Xiphactinus, Latin for “Sword-Ray”, was named after its long pectoral fins, but is commonly called the “Bulldog fish” because of its bulldog like expression with upturned jaw and sharp fang-like teeth. Their skulls were thick boned and their eyes were protected by hard sclerotic rings. The jaws of the Xiphactinus were thick with sharp teeth that grew larger and more fang-like towards the front of the skull.

One of the fascinating aspects of the Xiphactinus is its highly aggressive predatory nature. One famous specimen of a 13 foot Xiphactinus discovered by noted paleontologist George F. Sternberg contained a complete 6 foot fish in its stomach. It was suggested that the Xiphactinus ate the fish whole while it was still alive and the fish ruptured the vital organs of the Xiphactinus; killing it and allowing for the unique preservation.

These huge fish, along with mosasaurs, were the most ferocious inhabitants of the ancient Western Interior Seaway that once covered the Midwest of North America; extending from present-day Gulf of Mexico thru Canada.

Additional information: Locality: SE1/4 Sec. 24 T 15 S R 32 W Logan County, Kansas

For more information, contact:
David Herskowitz
Director of Natural History
David@HA.com
214-409-1610
800-872-6467 ext. 1610

Peter Wiggins
Assistant Director of Natural History
PeterW@HA.com
214-409-1639
800-872-6467 ext. 1639
Free catalog and The Collector’s Handbook ($65 Value) for new clients. Please submit auction invoices of $1000+ in this category, from any source. Include your contact information and mail to Heritage, fax 214-409-1425, email CatalogOrders@HA.com, or call 866-835-3243. For more details, go to HA.com/FCO.