Harvey Webster Testimony

Chairman Wiggam, Ranking Member Kelly, Members of the State and Local Government Committee and Special Guests, thank you for the opportunity to testify today on behalf of Senate Bill 123 naming Dunkleosteus terrelli as the official State of Ohio fossil fish.

My name is Harvey Webster and I am Chief Wildlife Officer and Museum Ambassador for the Cleveland Museum of Natural History. I am a lifelong Ohioan, born and raised in the Cleveland area and was educated at Cornell University.

I’ve spent 45 years on the staff and in the service of the Cleveland Museum of Natural History, most of that time promoting Ohio’s rich natural heritage to people throughout the state. In 2016, I was awarded the Naturalist Award from the Ohio Biological Society. And in 1999 I was awarded the Wildlife Conservation Award from the Ohio Division of Wildlife in recognition of the Museum’s contributions to the recovery of Bald Eagles in Ohio.

I well remember the first time I saw the *Dunkleosteus* *terrelli* mount at the Cleveland Museum of Natural History. I was 11 years old and visiting the Museum’s Kirtland Hall of Prehistoric Life upon its opening in 1961. I was totally blown away by this incredible creature, so formidable looking, huge and so unlike anything I had seen before. I believe this is the first impression that most people have when they see Dunkleosteus. They are then astounded to learn that this amazing fish used to swim in an ocean that once covered most of Ohio.

*Dunkleosteus terrelli* lived 360 million years ago during the Late Devonion period (called the ‘Age of the Fishes’) when much of the planet and most of Ohio was covered with a tropical sea. *Dunkleosteus terrelli* was the largest sea creature at the time (as long as 30 feet plus) with huge, powerful jaws and swam over most of the area now in Ohio. It has been estimated that his bite was more powerful than that of a T-Rex dinosaur. What made *Dunkleosteus terrelli* different from similar fish was that he had self-sharpening blades of bone that worked like giant scissors that sliced rather than crushed its prey.

So imagine Ohio, 360 million years ago, covered by a shallow, tropical sea and located 800 miles south of the equator in the southern hemisphere. Swimming above the oxygen less zones, the fish, sharks, sea scorpions as well as *Dunkleosteus terrelli* go about their daily business of trying to make a living - little fish eaten by bigger fish, which in turn are eaten by larger fish, which in turn are eaten by *Dunkleosteus terrelli*. Any fish that die and are not eaten, settle in the black muck and get buried. The lack of oxygen slows or prevents decomposition. Over time the sediments get deeper and are lithified and the remains of the fish are entombed inside. This is how a fossil is made over long, long periods of time. Plate tectonics move the continents and as one plate grinds into another, it can uplift the land raising it out of the sea. Over long periods of geological time the Ohio shales are exposed and erode away, revealing the fossils trapped inside, to be discovered by Ohio paleontologists.

The first discovery of several large Late Devonian fossil fish bones occurred along the Olentangy River in Delaware, OH and were collected in 1868 by **REVEREND HERMAN HERZER**. These fossils were identified and named in 1873 by **PROFESSOR J.S. NEWBERRY** of the newly formed Ohio Geological Survey as ‘*Dinichthys herzeri*,’ literally translated from Latin into ‘*Herzer's Terrible Fish*.’ *Dinichthys herzeri* is closely related to the later, more prominent and important Genus and Species of *Dunkleosteous terrelli*. This discovery inspired geologists and amateur collectors alike to examine other localities in the State of Ohio that had the same distinctive black shale exposures which soon led to a second discovery of large fossil fish bones at Sheffield Lake (near Avon Lake) along Lake Erie’s shore by a hotel proprietor and local collector by the name of **JAY TERRELL**. Again, **PROFESSOR J.S. NEWBERRY** of the Ohio Geological Survey examined these fossils and found them to be another new species, which he named and described as *Dinichthys terrelli* in 1875, in honor of its discoverer, **JAY TERRELL.**

In 1920, the Cleveland Museum of Natural History was founded, and in 1923 the they hired their first paleontologist, **PETER BUNGART**,from Sheffield, Ohio. **PETER BUNGART** was an experienced fossil collector/carpenter/boat builder who, in his early years, was mentored by **JAY TERRELL** who helped him with his research and collection of fish fossils along the Lake Erie shore and its tributaries.As a result, **PETER BUNGART** spent the next 25 years prospecting for bones of the great Late Devonian fossil fish of the region.

During his lifetime, **PETER BUNGART** amassed an amazing collection. His early collection was sold to the American Museum of Natural History in New York City, a later collection to the British Museum in London, while his remaining collections were donated to the Cleveland Museum of Natural History. This collection formed the nucleus of what would become the best preserved and greatest collection of Late Devonian fossil fish and sharks in the world. The largest complete specimen of a skull of *Dunkleosteus terrelli* was found in Ohio and is now on display at the Cleveland Museum of Natural History.

In 1939, **DR. DAVID H. DUNKLE**, a Harvard trained vertebrate paleontologist, joined the Cleveland Museum of Natural History staff. Over the next 8 years **DR. DAVID H. DUNKLE** and **PETER BUNGART** published a dozen scientific papers describing the structure and anatomy of *Dinichthys terrelli* (later classified as *Dunkleosteus terrelli*) and related fossil armored fish.

It was in1956, after much research and study, that *Dunkleosteus terrelli* finally got its current name. **DR. J. P. LEHMAN**, the Director of the National Museum of Natural History, Paris, France, himself an expert on Late Devonian fossil fish, had been studying specimens of the genus *Dinichthys* from Morocco. As a result, he came to the conclusion that the Dinichthys from Morocco was different from the fish in Ohio in regards to their jaw functions. Based upon his study and the works of **DR. DAVID H. DUNKLE** and **PETER BUNGART** of the Cleveland Museum of Natural History, in 1956, **DR. J. P. LEHMAN** proposed a new name for the Ohio *Dinichthys* specimens collected from the upper Huron and Cleveland Shale in Ohio. He separated the original genus *Dinichthys* into two distinct genera and created a new classification of Family (dunkleosterdae), Genus (Dunkleosteus) and Species (terrelli) to be now known as, *Dunkleosteus terrelli,* in honor of **DR. DAVID H. DUNKLE** and its original discoverer, **JAY TERRELL**.

In the 1960s, Interstate Highway 71 was being laid out and constructed through Cleveland’s west side neighborhoods, cutting directly through the Late Devonian fossil-bearing shales of the Big Creek Valley where **PETER BUNGART** of the Cleveland Museum of Natural History had collected fossils in the 1920’s. From 1965-67, with the strong support of the Ohio Department of Transportation, field crews from the Cleveland Museum of Natural History combed the piles of shale hauled up by the graders and construction equipment of the Interstate Highway. The Cleveland Museum of Natural History's field personnel worked closely with the construction companies to identify the fossil-bearing rock deposits.

Fossil fish specimens from these deposits now increased the already world famous Late Devonian fossil fish holdings of the Cleveland Museum of Natural History tenfold. These excavations included more specimens of *Dunkleosteus terrelli* and dozens of newly identified fossil fish that were previously unknown to science. The Cleveland Museum of Natural History’s collection was now without peer in the world both in the variety of the species and the quality of the preservation of these animals.

*Dunkleosteus terrelli*, the apex predator of the seas, is now considered the most remarkable of all the Ohio Late Devonian fossil fish and the largest animal alive at that time. *Dunkleosteus terrelli* was bigger than a great white shark with enormous armored plates protecting the head with razor sharp meat cleaver-like jaws. These Ohio fossil specimens of *Dunkleosteus* terrelli are known throughout the worldwide scientific community as the largest, best preserved and most complete specimens of this fierce fish ever found. Replicas of them are found in most of the great natural history museums of the world.

So long before the age of dinosaurs, *Dunkleosteus terrelli* was the largest living animal on earth. In the Late Devonian Era, 360 million years ago, it was the apex predator of a vast ocean world in the ‘Age of the Fishes.’ I feel like I should cue the music from ‘Jaws’, because ‘Dunk’ (the nickname we gave him at the Museum) was the equivalent of the fierce Great White Shark, the Jaws of its era.

In the nearly 100 years since its founding, the Cleveland Museum of Natural History has worked hard to connect people with nature and science. We have provided exhibits and educational programs that have introduced people to the wonders of Ohio. Our scientists have worked hard to document and conserve our natural resources. We have worked side by side with the Ohio Division of Wildlife to conserve Bald Eagles in Ohio as well as endangered species like Peregrine Falcons, spotted turtles, and snowshoe hares.

All of the science, education and conservation done at the Cleveland Museum of Natural History is ultimately designed to connect Ohioans of all ages with Ohio’s rich natural history and inspire them to seek out opportunities to further explore, discover and appreciate Ohio’s amazing natural heritage.

In that same spirit, we believe *Dunkleosteus terrelli* to be an Ohio Icon. Indeed, it is an Icon that can inspire students and young people to become engaged in nature and science. And whether those students pursue STEM careers or just deepen their appreciation of their natural heritage as Ohioans, *Dunkleosteus terrelli* can inspire them.

We have a number of things that have achieved official State of Ohio status. Some are very well known, such as the Buckeye, our State Tree and the Cardinal, our State Bird. Some are lesser known, such as the State wildflower is the large flowered Trillium, the State Mammal is the White-Tailed Deer, and the State Amphibian is the Spotted Salamander. What ties them all together, however, is that they are all relevant to the ‘Ohio Story.’

Clearly, *Dunkleosteus terrelli* is a uniquely Ohio treasure, with the first discoveries of these fossils being found just up from here along the Olentangy River between Columbus and Delaware. The biggest and most complete specimens came from Sheffield Lake and the Rocky River valley. The Ohio fossils are the world’s best preserved and biggest specimens ever located.

Making ‘*Dunkleosteus terrelli’* Ohio’s State Fossil Fish will encourage learning about science. As the State Fossil Fish, more students would learn about it the way they learn about other Ohio Icons. They would be introduced to geology, sedimentology, paleontology and the sciences that seek to understand our earth. These are the sciences that are essential for everything from natural resource discovery and use to hydrology and flood plain dynamics.

*Dunkleosteus terrelli* is world renowned and casts of the Ohio fossils are exhibited in Museums around the world. ‘Dunk’ is also part of popular culture and has been featured on T.V. programs such as River Monsters and Animal Planet’s Shark Week. It has an instantly recognizable and extraordinarily fearsome face. And in the words of millions of kids, (and once upon a time, me) *Dunkleosteus terrelli* is cool! As the most important fossils of *Dunkleosteus terrelli* were found in Ohio’s Late Devonian shale, this makes it a part of Ohio’s great story.

Accordingly, we hope that you will join us in supporting Senate Bill 123, adding *Dunkleosteus terrelli* to the above list of Ohio Icons and officially designate it as Ohio’s State Fossil Fish. We feel its recognition is both well-deserved and a long time (360 million years) in coming.

Thank you for your consideration of my testimony.