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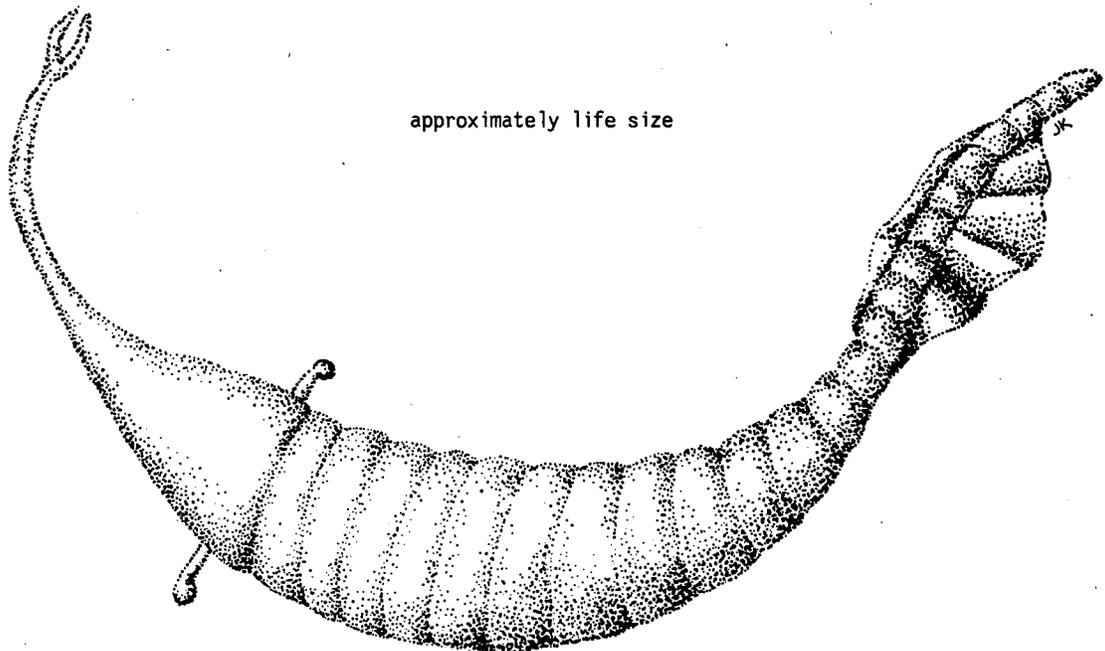


Illinois' State Fossil  
*Tullimonstrum gregarium*

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*Tullimonstrum gregarium*, the "Tully monster," is the official state fossil of Illinois. Now extinct, this animal was once a fairly common inhabitant of the State during the Pennsylvanian Period of geologic time, some 300 million years ago.

The Tully monster was a soft-bodied, invertebrate, marine animal (an animal with no shell and no backbone that lived in the ocean). It had an elongate, segmented body that tapered at both ends. At the front end was a long snout ending in a "jaw" with eight tiny "teeth." At the other end was a tail and two fins. Two eyes on stalks projected out sideways near the front of the body. Judging from the streamlined shape, flexible body and maneuverable fins, the Tully monster was probably an active swimmer; perhaps it hovered near the sea bottom like a modern squid. It's not known for certain what Tully monsters ate, but their "jaw" and apparent swimming capabilities suggest that they may have attacked other marine animals like jellyfish and shrimp, perhaps piercing their prey with their "teeth" and sucking out the juices.



ILLINOIS GEOLOGICAL  
SURVEY LIBRARY

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During the Pennsylvanian Period, Illinois lay near the Earth's equator. Dense swamps, forested with primitive plants, covered much of western and central Illinois. In shallow, coastal seas nearby, the Tully monster swam, along with relatives of modern shrimps, jellyfish, squid, sharks and other marine animals. Rivers that meandered through these swamps carried sediment, and leaves and other debris from land plants into the sea. The setting may have been rather like the Amazon River delta in South America today. Through time, vegetation that accumulated in the swamps was buried and converted to coal, an important economic resource for Illinois. Meanwhile, in the ocean, the fine mud carried there by the rivers that drained the swamps buried the plant debris and bodies of dead animals that settled to the bottom.

Typically, only the hard external shells or bony skeletons of animals are preserved as fossils. The soft flesh of dead animals, whether in the ocean or on land, quickly decays and is eaten by scavengers. So, the chances of a soft-bodied animal like the Tully monster or a jellyfish being preserved as a fossil are very small. But conditions in these coastal seas were apparently just right for making fossils; animals that died were buried so quickly in the mud that scavengers and decay didn't have time to work. Chemical reactions between the seawater, the mud and the organic matter of the dead animals and plants caused nodules of reddish-brown "ironstone" (the mineral siderite) to harden around the buried organisms. Although the actual flesh that formed the body is gone from the inside of these nodules, the appearance of the soft parts of animals and plants is preserved in fine detail in the hardened mud, either as impressions, or outlined by color differences. Perhaps at only five other localities anywhere in the world have fossils been found with such detailed preservation of so many different types of soft-bodied creatures.

The world-famous fossil-bearing nodules of Illinois were first discovered in the 1850s in natural exposures along the banks of Mazon Creek in Grundy County. The nodules occur in a bed of shale that overlies a valuable coal seam. When strip mining operations began in the 1920s south of Braidwood, near where Grundy, Will and Kankakee Counties meet, the area quickly became a popular fossil-collecting site. To expose the coal beds for strip mining, the shale containing the fossil-bearing nodules was stripped off and dumped out of the way in huge waste piles. Most of the fossils of Tully monsters and other marine organisms, and numerous fossil plants as well, have come from these piles. Because the nodules are too hard to hammer open, and the fossil can be broken and destroyed in doing so, the best way to collect these fossils is to find naturally-split nodules.

In the late 1950s, Francis Tully, an avid amateur fossil collector from Lockport who hunted regularly in the strip mines near Braidwood, discovered a fossil unlike any he had ever seen before. Hoping to have it identified, he brought it to the paleontologists at the Field Museum of Natural History in Chicago. However, they had never seen anything like it either, and the fossil was soon dubbed "Mr. Tully's monster" or "Tully monster" for short. In this case, "monster" means something extraordinary, and the Tully monster is certainly that! It is such an unusual animal that it does not appear to be closely related to any known animal, living or extinct. In 1966, Eugene Richardson, then Curator of Fossil Invertebrates at the Field Museum, gave the fossil its proper scientific name, *Tullimonstrum gregarium*. *Tullimonstrum* is simply the Latinized version of the animal's nickname, in honor of Mr. Tully who first found it, and *gregarium* means "common."

Although more than half of all the states have official fossils, few have one as unique to their state as Illinois. The Tully monster is found nowhere else in the world. Not only is it unique to the state, but it is also apparently unique among animals.