

SHARK TEETH

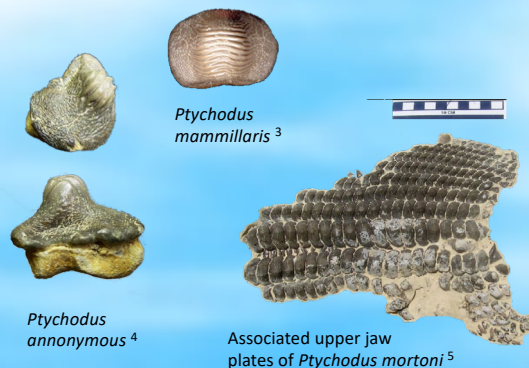
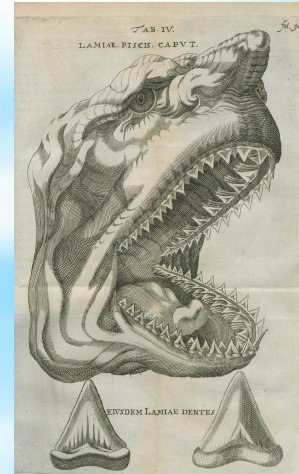
Paleontological Society of Austin

HISTORY OF DISCOVERY

The oldest known records of fossilized shark teeth are by Pliny the Elder, who believed that these triangular objects fell from the sky during lunar eclipses.

According to Renaissance accounts, large, triangular fossil teeth often found embedded in rocky formations were believed to be petrified tongues of dragons and snakes and so were referred to as "tongue stones" or "glossopetrae". Glossopetrae were commonly thought to be a remedy or cure for various poisons; they were used in the treatment of snake bites. Due to this belief, many noblemen and royalty wore these "tongue stones" as pendants or kept them in their pockets as good-luck charms.

This interpretation was corrected in 1611 by the Italian naturalist Fabio Colonna, who recognized them as ancient shark teeth, and, in 1667, by the Danish naturalist Nicolaus Steno, who discussed their composition and famously produced a depiction of a shark's head bearing such teeth (right). He mentioned his findings in a book, *The Head of a Shark Dissected*, which also contained an illustration of a *C. megalodon* tooth, previously considered to be a tongue stone.



Ptychodus mammillaris ³

Ptychodus anonymous ⁴

Associated upper jaw plates of *Ptychodus mortoni* ⁵



Petalodus ohioensis, Brown County, Texas ⁶



Various Eocene teeth, Morocco ⁷



Peripristis sp., Brown County, Texas ⁸



Cretolamna biauriculata Morocco ¹⁰



Carcharocles auriculatus North Carolina ⁹

TYPES OF TEETH

There are four basic types of shark teeth that vary widely according to the diet of the shark.

Dense Flattened Teeth - Dense flattened teeth are used to crush prey like clams, oysters and crabs. In Texas we can find a wide variety of different teeth from Cretaceous era *Ptychodus* species. The three individual teeth to the left are from Texas. The plate is from Kansas. Sharks with such teeth are typically found at the bottom of the ocean floor because this is the habitat in which their prey live. Their teeth are flat in order to easily crack open their shellfish prey.

Though they look like low flat blades, the *Petalodus* teeth from Texas were tightly emplaced against each other to form a crushing pavement.¹¹

Needle-like Teeth - Sharks with needle-like teeth commonly feed on small to medium fish and or other small sharks. Their teeth are especially effective for their prey because they can easily grip their slippery and narrow meals. Some examples are the blue shark and the bull shark. These sharks use their teeth to feed on small prey like squid, flounder, stingrays, and even hammerhead sharks. The needle-like teeth to the left are from the Eocene deposits of Morocco.

Pointed Lower Teeth and Triangular Upper Teeth - This combination of pointed lower teeth with triangular upper teeth are especially useful for cutting prey that consist of large mammals and fish. The combination of teeth uses serrated edges to cut the larger prey into smaller portions in order to easily swallow the pieces. The great white shark, which feeds on animals such as sea lions, dolphins, other sharks, and even small whales, has this sort of teeth, as does megalodon and the *Carcharocles auriculatus* from North Carolina. Note the serrations on the *C. auriculatus* to the left (which is missing its pointed tip).

Non-Functional Teeth - The teeth of plankton-feeders, such as the basking shark and whale shark, are greatly reduced and non-functional. These sharks filter feed on prey by opening their mouths to let tiny organisms get sucked into their mouths without using their teeth at all.

Transitional teeth

As one species evolves into another, its teeth may become difficult to classify, exhibiting characteristics of both species. For example, teeth from *Carcharocles auriculatus* as it evolved into *C. angustidens*, are difficult to definitively identify as coming from either species.