What is the Evolutionary History of Fish?

Fish are considered to be the first known vertebrates (animal having a backbone) and also the stepping stone to all land-walking vertebrates (tetra pods). Fishes are complicated which have a long evolutionary history. In order to understand the evolutionary of fish, it is important to understand the times in which and from where they evolved. The first vertebrate that has been found in the Upper Cambrian fossil Anapsis, which is more than 500 million years old. Some of the oldest known animals in the evolutionary history of fish are Pikia gracilens, which resembles the modern day lancet, found in the famous Haikouichthys and Myllokunmingia from the Maotianshan rocks of southern China. These simple jawless fish existed approximately 100 million years until the first jawed fish evolved. Fish did most of their evolving between five million and three and a half million years ago. These two periods were known as the “Silurian and the Devonian periods”. In fact, the Devonian is often referred to as the “Age of Fishes”.

Which was the First Fish to Evolve?

Fishes are not only a stepping-stone for amphibians, but they are much more significant than this. They have evolved to be the masters of their domain, the water. They come in many forms; have the ability to eat a huge variety of foods. The first fish to evolve were the “Agnathans” (class agnatha). These jawless fishes are the first vertebrates. These fishes have round mouth parts that could be used for sucking or filter feeding. These rasping, sucking mouths are now found on modern lampreys and hagfishes. Theses fishes were extremely armored to protect themselves. One group that evolved before the Silurian was the “Ostrocoderms” which have been described as “small, blunt-headed forms with an astonishing array of spines and crests on their heads”. Most of these types of fishes are currently extinct.

How did the jaws of Fish evolve?

Jaws evolve only once rather than evolving multiple times in various species through parallel evolution. Jaws evolved from gill arches which are bony parts between gill slits. It is though that a gill arch in an “agnathan” became fused to its skull. The upper part of the gill support became the top jaw and the bottom part of the gill support became the bottom jaw. Embryology points to this and the arrangement of nerves in shark heads and most simple fishes shows that jaws are in line with gill arches.

Which is the first "jawed" fish to evolve?

The “Acnathodians” were the first jawed fishes to evolve and they tended to be small, streamlined and had huge eyes. “Placoderms” on the other hand, appeared in the early Silurian and dominated the Devonian. These were strange looking fishes which had bony armor to open the mouth wide. The primitive jaws had jagged bony edges that served as teeth. The tail end usually lacked protection. At the beginning of Devonain, Placoderms were small, but they soon increased in size.

Which Fish belongs to Class Chondrichtyes?

This class includes sharks, skates, and rays (along with some other fish) which evolved between 400 and 450 million years ago. This class is commonly referred to as the cartilaginous fish. The cartilaginous fishes lack true bones, instead they have cartilage and calcified cartilage for internal support. This type of skeleton is extremely powerful biting and crushing jaws. Chondrichtyes have evolved 2 kinds of jaws; sharks have powerful biting and crushing jaws while skates and ray uses their jaws to be bottom feeders searching for mollusks. Bottom feeder is an aquatic animal that feeds on or near the bottom of a body of water, like an ocean, a lake, a river, an aquarium.

What are the current living fishes?

In terms of currently living fishes, Class Chondrichtyes make up only 900 species. The bulk of the fish are from Class Osteichtyes, the true bony fish. There are 19,000 bony fish which are reported. The bony fish, while being varied, all share a very important characteristics; a swim bladder. This probably evolved from lungs which had appeared in some freshwater species. The swim bladder is an internal structure which allows bony fish to float easily at any water level. The bony fish can be broken up into 3 major groups.

Ray-fins: These are most of the common bony fish such as tuna, bass and salmon.
Lungfish: They are freshwater fish.
Lobed-fin fish: this entire group was thought to be extinct until the 1930s when a live one was found. It was called “coelacanth” which has incredible swimming style which consists of walking like movement.

In conclusion, there is much to be learned from fish. Their evolutionary history is complicated. They began as jawless, bottom feeders and evolved into sharks, rays, tunas and many extinct species including the placoderms. The fish, then lead to reptiles and subsequently to amphibians (vertebrates that can survive both on land and in water)

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