

History of Fish

- Fish live for more than 500 million years in freshwater and now spread out almost every aquatic habitat from polar seas to tropical ponds. Some even live temporarily on land.
- Sharks and Rays are known as a cartilage fish (Having skeleton of cartilage). Sharks evolutionary history extends back to 400 million years, while Rays probably first appeared 200 million years ago.
- Jawless fishes were lived in water and most become extinct by 360 million years ago. The two survive groups are hagfishes and lampreys; they are probably only distantly related to each other.
- Bony fishes are the most successful living vertebrate group. Bony fishes first appeared about 395 million years ago, the fossil recorded indicating that the earliest forms inhabited freshwater.

History fish used as important food sources;

- Aquaculture (common carp) in China began around 3500 B.C.
- In 475 B.C. Fan Li a politician and administrator, wrote the oldest document on fish culture. His document described methods for pond construction, brood stock selection, stocking and managing ponds.
- One of the major food sources for humans was fish in Mesopotamia in 3000 B.C. Fish were considered to be one of the staple foods of early human civilization in the Middle East.

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- Ancient Egyptians, aquaculture seems to have evolved in tandem with the development of irrigation systems; drawing in tombs dated about 2500 B.C. show tilapia were found.
- Roman Empire, fish were kept in ponds called 'stews' next to manors of the wealthy, in the first century B.C. During the Middle Ages.
- A Sumerian text described the habits and appearance of many species of fish in some detail in 2000 B. C.
- In central Europe, in the 11th century and the beginning of the 12th, Pond management in Bohemian a part of Czech Republic peaked in the 14th century.

Almost 34, 000 different aquatic species have been identified and named. Nearly 15, 000 of fish are discovered but they still have not been described and named. Around 580 aquatic species were reported by FAO as cultured in 2016.

Ichthyology

The sciences of **Ichthyology** consist of two words (ikhthus, "fish"; and logos, "study") is the branch of zoology devoted to the study of fish. This includes skeletal fish (Osteichthyes), cartilaginous fish (Chondrichthyes), and jawless fish (Agnatha). The practice of ichthyology is associated with marine biology, limnology, fisheries science and aquaculture science. People who study ichthyology are called ichthyologists.

History of Ichthyology;

Aristotle 322-384 B.C. who is well known as 'Father of Zoology' had a perfect knowledge of general structure of fishes and his information regarding the habits of fishes has been found to be quite accurate. Aristotle could gather about fishes, was chiefly based on about 115 fishes obtained from Aegean close to Greece.

Pierra Belon (1517-1575 AD); described at least 110 fishes from eastern part of Mediterranean in Europe. Also, he had given a system of classification of fishes.

H. Salviani (1514-1572); 92 fishes of Italy (Rome) were described by him, his work made Ichthyology popular, as far as fauna of that region.

G. Rodelet (1507-1557); About 197 marine and 47 freshwater fishes from Mediterranean find place in Rodelets work. He gave much detail of species.

W. Piso and G. Margrav (1611-1678); described about 100 fishes from Brazil.

J. Ray (1628-1705) in collaboration with F. Willughby (1635-1672); arranging and describing about 420 species from Great Britain and Germany.

Peter Artidi (1705-1734) Father of Ichthyology; who had divided the fishes proper into 4 orders.

CarlousVonLinnae (1707- 1778); whom we known today 'Father of Taxonomy' accomplished Artidis unfinished task in a book form, entitled 'ArtidiIchthyologica' Linnaeus applied binomial terms to the species properly described and classified by Artidi.

Economic or applied aspects of ichthyology may be listed as follows;

1-Fresh fish meat; the fishes obtained from either marine or freshwater resources are sent / transported directly to the local fish markets for sale, to meet out the daily requirements of the fresh fish meat.

2- Quality of flesh; fishes are highly perishable and spoilage sets in soon after landing. A large quantity of fish is thus refrigerated, salted, smoked or canned to be used whenever or wherever fresh meat is not readily available.

3- Fish by-product; besides being consumed as food, the fishes and fish wastes are also utilized in a number of ways to get the products like-liver oil, body oil, fish meal, fish flour, fish silage, fish solubles, skin and leather, fins, fish glue.

4- Commercial aspects; marketing and trade forms one of the aspects of commercial fishery. A well-organized marketing and trade sector for fishes, fish product, export and import.

5-Recreation; sport fishing by individuals and fishing parties have become a popular means of recreation for millions of people.

6- Fish aquaria; Ichthyologist is the best person, who identified fishes suitable to be kept in an artificial pool or tank, called aquarium. In addition to the aesthetic and entertainment value of the fish aquaria, the fishes they keep are frequently of scientific interest.

7- Larvivororous fishes; the persons associated with the studies on food and feeding habits of fishes have been found many items a certain variety of fishes for which mosquito larvae formed much sought-after item of food.

8- Fish pathology; Fishes like all animals, too, are subjected to disease, the most serious of which are infections, as these can wipe out a great many fishes. Fish disease ranges from microscopic bacteria, fungi, protozoa to large helminths, annelids, arthropods.

9- Fish catching implements; fishing is the oldest industry, the gears use for implementation are Crafts (vessels, boats, trawlers, nets ect) used by the fisherman to catch the fish.

Brief description of Fish;

They are easy to identify, they live in water, breathe thorough their gills, are covered by shiny scales, and swim by swishing their fins and tail, but there are exceptions, there is a fish can live out of water and breath air like lung fish. Some eels have no scales. Lampreys and hagfish are and some types of ray have no fins or tail. But fish, like all other vertebrates, have inner skeletons with a backbone.

Fish are vertebrates (with backbones) that are cold blooded, live in water, breathe by gills, swim with fins and a tail, and have a body covering of scales.

Superlative Fishes

- Lung fishes can live in a state of dry “suspended animation” for up to 4 years, becoming dormant when their ponds dry up and reviving quickly when immersed in water.

- Gender change is common among fishes. Some species are simultaneously male and female, whereas others change from male to female or from female to male.

-Fishes are unique among organisms with respect to the use of bioelectricity. Many fishes can detect biologically meaningful, minute quantities of electricity, which they use to find prey, competitors, or predators and for navigation.

-Some groups have converged on the ability to produce an electrical field and obtain information about their surroundings from disturbances to the field, whereas others produce large amounts of high-voltage electricity to deter predators or stun prey.

- Fishes are unique among vertebrates in their ability to produce light; this ability has evolved independently in different lineages and can be either autogenic (produced by the fish itself) or symbiotic (produced by bacteria living on or in the fish).

- Predatory tactics include attracting prey with modified body parts disguised as lures, or by feigning death. Fishes include specialists that feed on ectoparasites, feces, blood, fins, scales, young, and eyes of other fishes.