

P.E. Society's

Modern College of Arts, Science and Commerce

Ganesh-Khind, Pune – 411 053

<http://www.moderncollegegk.org>

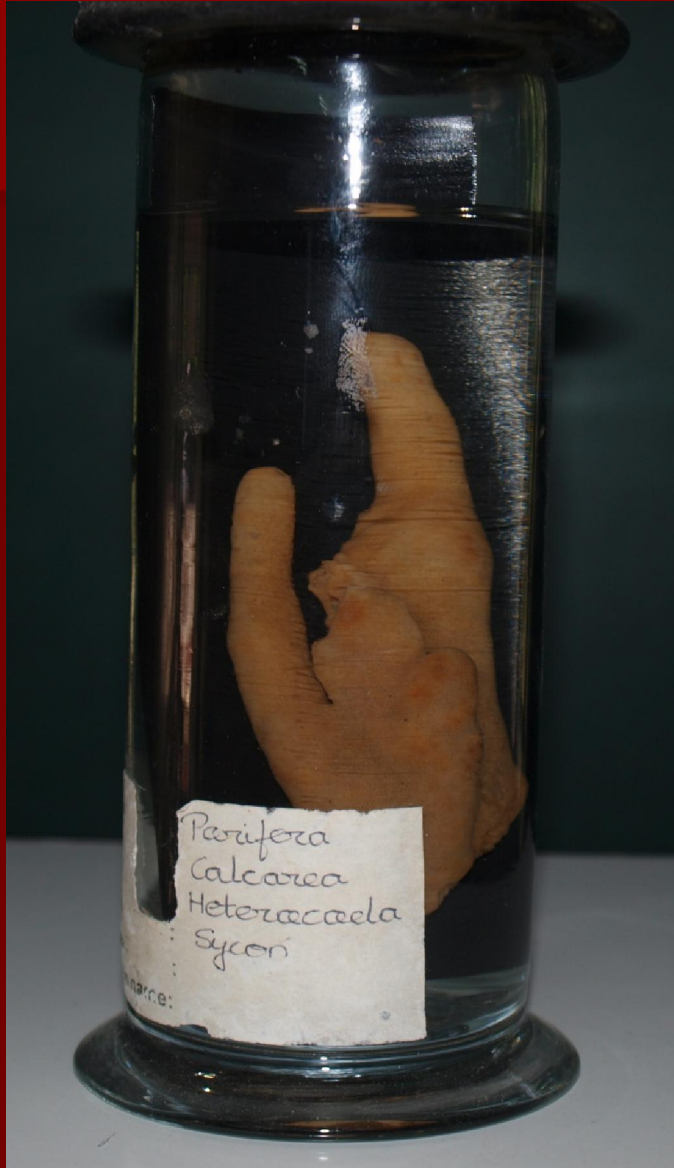
Department of ZOOLOGY

Museum Specimens

Phylum

Porifera

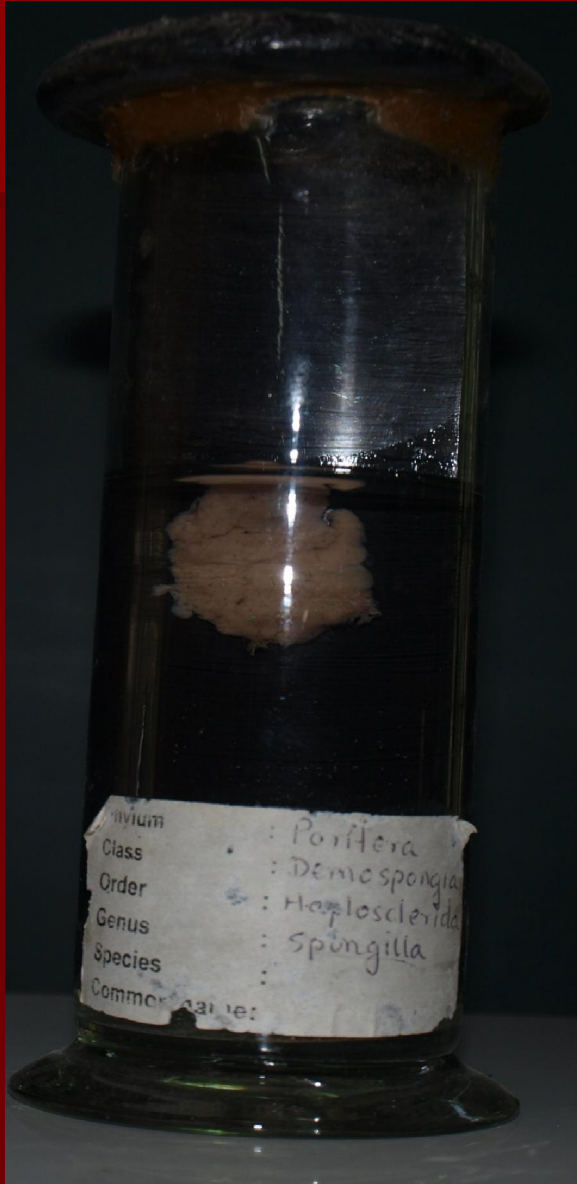
Sycon



- n Kingdom: Animalia
- n Phylum: Porifera
- n Class: Pharetronida
- n Order: Sycettida
- n Genus: *Sycon*
- n General Characteristics:

Sycon is a genus of calcareous sponges. These sponges are small, growing up to 5 cm in total length, and are tube-shaped and often white to cream in colour. The surface is hairy and spiky tufts of stiff spicules surround the osculum.

Spongilla



- n Kingdom: Animalia
- n Phylum: Porifera
- n Class: Demospongiae
- n Order: Haplosclerida
- n Genus: *Spongilla*
- n General Characteristics:

Spongilla dwells in lakes and slow streams. Spongilla attach themselves to rocks and logs and filter the water for various small aquatic organisms such as protozoa, bacteria, and other free-floating pond life. fresh-water sponges are exposed to far more adverse and variable environmental conditions, and therefore they have developed gemmules as a means of dormancy. When exposed to excessively cold or otherwise harsh situations, the sponges form these gemmules, which are highly resistant "buds" that can live dormant after the mother sponge has died. When conditions improve, the gemmules will "germinate" and a new sponge is born.

Phylum

Coelenterata

Jelly fish



- n Kingdom: Animalia
- n Phylum: Coelentrata
- n Subphylum: Medusozoa
- n Class: Scyphozoa
- n Order: Semaostomeae
- n Genus: *Aurelia*
- n General Characteristics:

Jellyfish are free-swimming members. Jellyfish have several different morphologies that represent several different cnidarian. Jellyfish are found in every ocean, from the surface to the deep sea. Some hydrozoan jellyfish, or hydromedusae, are also found in fresh water; freshwater species are less than an inch (25 mm) in diameter, are colorless and do not sting. Many of the best-known jellyfish, such as *Aurelia*, are the large, often colorful, jellyfish that are common in coastal zones worldwide.

Physalia

- n Kingdom: Animalia
- n Phylum: Cnidaria
- n Class: Hydrozoa
- n Order: Siphonophora
- n Genus: *Physalia*
- n General Characteristics:

Colonies of four specialized polyps and medusoids that drift on the surface of the Indian and Pacific oceans. A gas-filled bladder resembling a blue bottle maintains their buoyancy, and single long tentacles of venomous cnidocytes provide the animal with a means of capturing prey. A sail on their float, which may be left or right-handed, propel groups of *Physalia* about the sea. Individuals within these groups sometimes become stranded on beaches, where their toxic nematocysts can remain potent for weeks or months in moist conditions. The species are distinguished by the size of the float (six inches compared to twelve) and by having a single, or several long fishing tentacle.



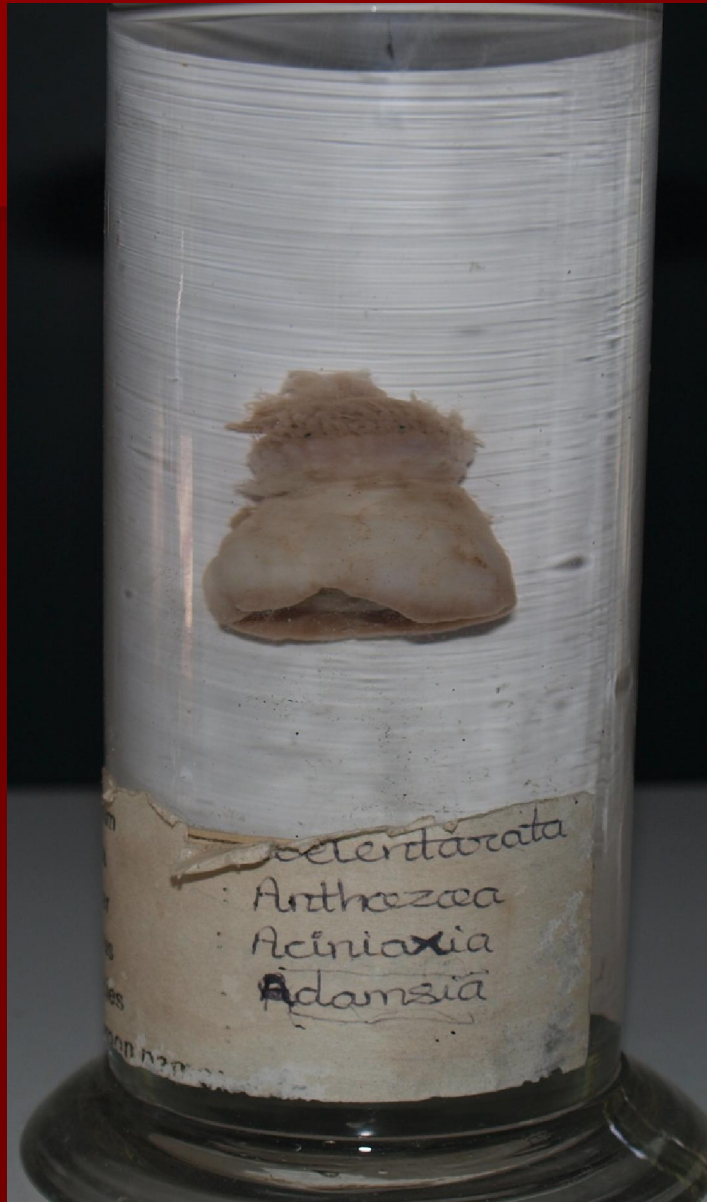
Obelia



- n Kingdom: Animalia
- n Phylum: Cnidaria
- n Class: Hydrozoa
- n Order: Leptomedusa
- n Genus: *Obelia*
- n General Characteristics:

The Obelia are naturally found underwater in the ocean throughout the world. They are marine colonial hydrozoans that are found on hard substrata in the subtidal zones. They are usually found no deeper than 200 metres (660 ft) from the water's surface, growing in intertidal rockpools and at the extreme low water of spring tides.

Sea anemone



n Kingdom: Animalia

n Phylum: Cnidaria

n Class: Anthozoa

n Order: Actinaria

n Genus: *Adamsia*

n General characteristics:

It is a polyp attached at the bottom to the surface beneath it by an adhesive foot, called a basal disc, with a column shaped body ending in an oral disc. The mouth is in the middle of the oral disc surrounded by tentacles armed with many cnidocytes, which are cells for defense and to capture prey. The poison is a mix of toxins including neurotoxins, which paralyzes the prey.

The sea anemone eats small fish and shrimp.

Madrepora



- n Kingdom: Animalia
- n Phylum: Cnidaria
- n Class: Anthozoa
- n Order: Scleractinia
- n Genus: *Madrepora*
- n General characteristics:

Madrepora also called **zigzag coral**, is a (stony coral) that is found worldwide outside of the polar regions, growing in deep water at depths of 80–1500 meters. It is bushy, growing in small colonies that form thickets, creating matrices that are fan-shaped and about 30 to 50 cm high. It has thick skeletal parts.

Porpita



- n Kingdom: Animalia
- n Phylum: Cnidaria
- n Class: Hydrozoa
- n Order: Anthomedusae
- n Genus: *Porpita*
- n General characteristics:

It is commonly called blue button; lives on the surface of the sea and consists of two main parts: the float and the hydroid colony. It is a passive drifter, meaning that it feeds on both living and dead organisms that come in contact with it; has a single mouth located beneath the float which is used for both the intake of nutrients as well as the expulsion of wastes.

Velella



- n Kingdom: Animalia
- n Phylum: Cnidaria
- n Class: Hydrozoa
- n Order: Anthomedusae
- n Genus: *Velella*
- n General characteristics:

Velella is a free-floating Hydrozoan that lives on the surface of the open ocean, worldwide, and is commonly known by the names **by-the-wind sailor**, **purple sail**, **little sail**. *Velella* is a hydroid colony, and most are less than about 7 cm long. They are usually deep blue in colour, but their most obvious feature is a small stiff sail that catches the wind and propels them over the surface of the sea. Under certain wind conditions, they can become stranded on beaches in the thousands.

Phylum

Platyhelminthes

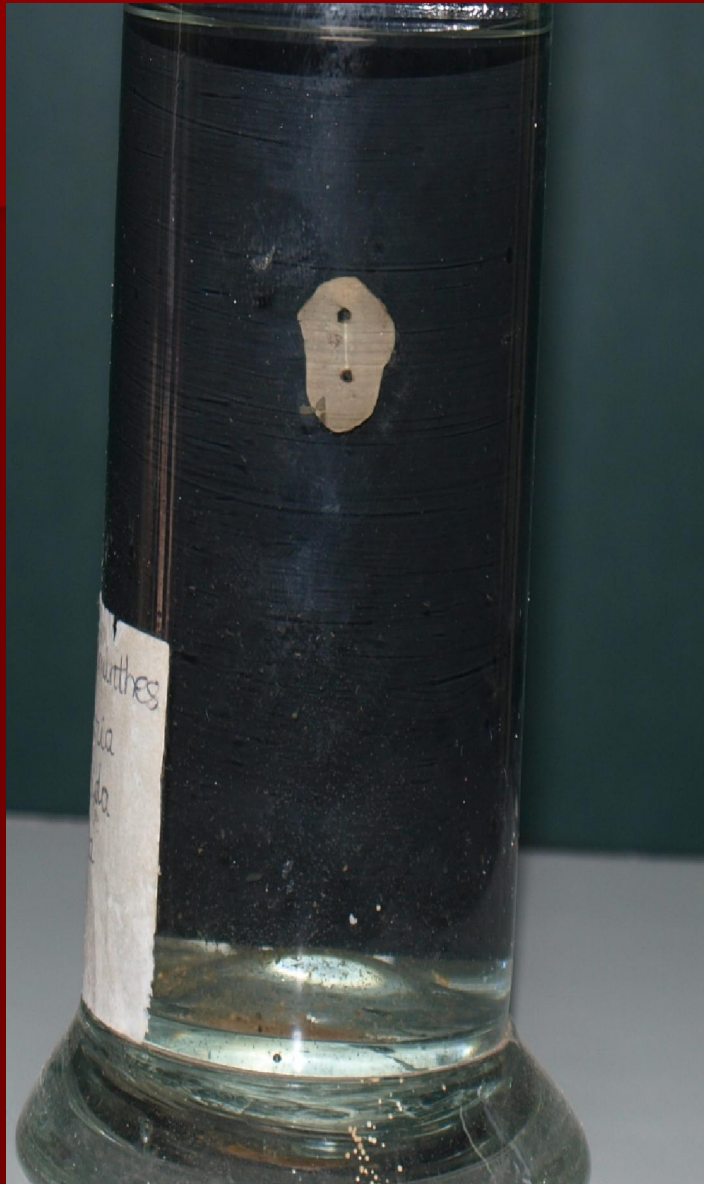
Tape worm



- n Kingdom: Animalia
- n Phylum: Platyhelminthes
- n Class: Cestoda
- n Order: Taenioidea
- n Genus: *Taenia*
- n General characteristics:

It lives in the digestive tract of vertebrates as adults, and often in the bodies of various animals as juveniles. Several species are parasitic to humans after being consumed in underprepared meat such as pork, beef, fish, or in food prepared in conditions of poor hygiene. the beef tapeworm, can grow up to 12 m (40 ft); other species may grow to over 30 m (100 ft).

Planaria



- n Kingdom: Animalia
- n Phylum: Platyhelminthes
- n Class: Turbellaria
- n Order: Seriata
- n Genus: *Planaria*
- n General characteristics:

These are non-parasitic flatworms living in both saltwater and freshwater ponds and rivers. Some species are terrestrial. These animals move by beating cilia & exhibit an extraordinary ability to regenerate lost body parts; length ranges from 1 to 20 millimetres (0.04 to 0.8 in), and the body has two eye-spots (also known as ocelli) that are photoreceptors. Planarians are very important as bio-indicators.

Liver fluke



- n Kingdom: Animalia
- n Phylum: Platyhelminthes
- n Class: Trematoda
- n Order: Echinostomida
- n Genus: *Fasciola*
- n General characteristics:

Commonly called sheep liver fluke, it is a parasitic flatworm infecting liver of various mammals including humans. It causes the disease fascioliasis. Mammals are the definitive host but requires an aquatic snail as an intermediate host

Phylum

Aschelminthes

Giant roundworm



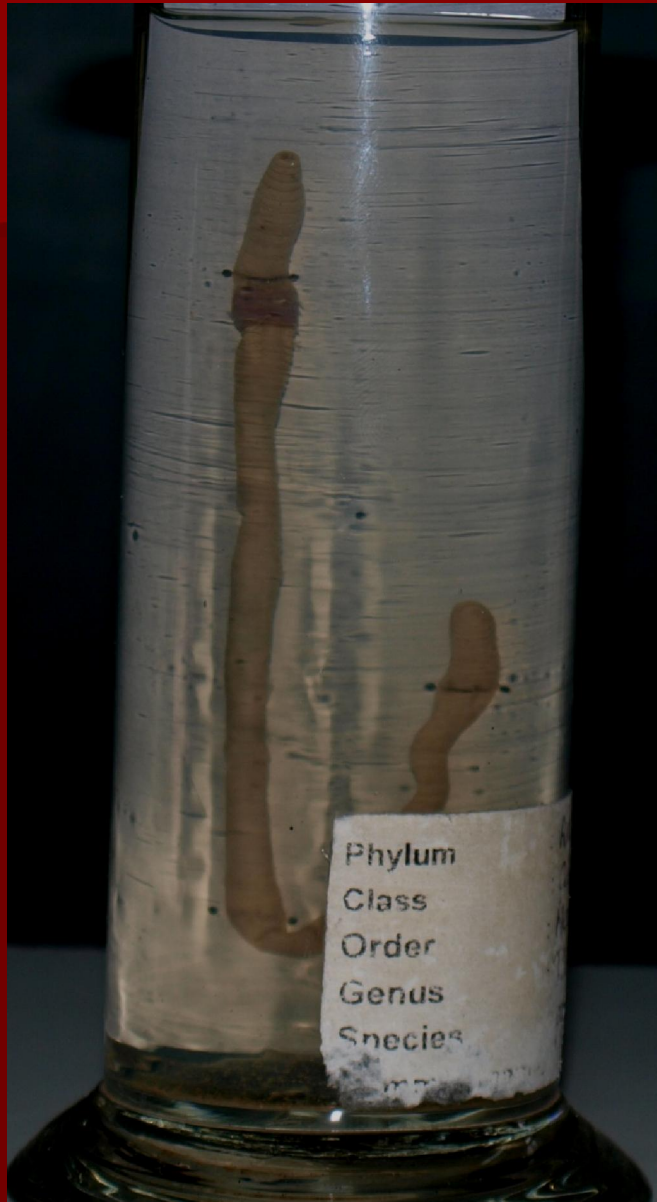
- n Kingdom: Animalia
- n Phylum: Nematoda
- n Class: Secernentea
- n Order: Ascaridida
- n Genus: *Ascaris*
- n General characteristics:

It is intestinal parasitic round worm of human & causes the disease Ascariasis. *Ascaris* takes most of its nutrients from the partially digested host food in the intestine and undergoes fertilization in the intestine. Female lays eggs which are removed out of the host body through the faecal matter.

Phylum

Annelida

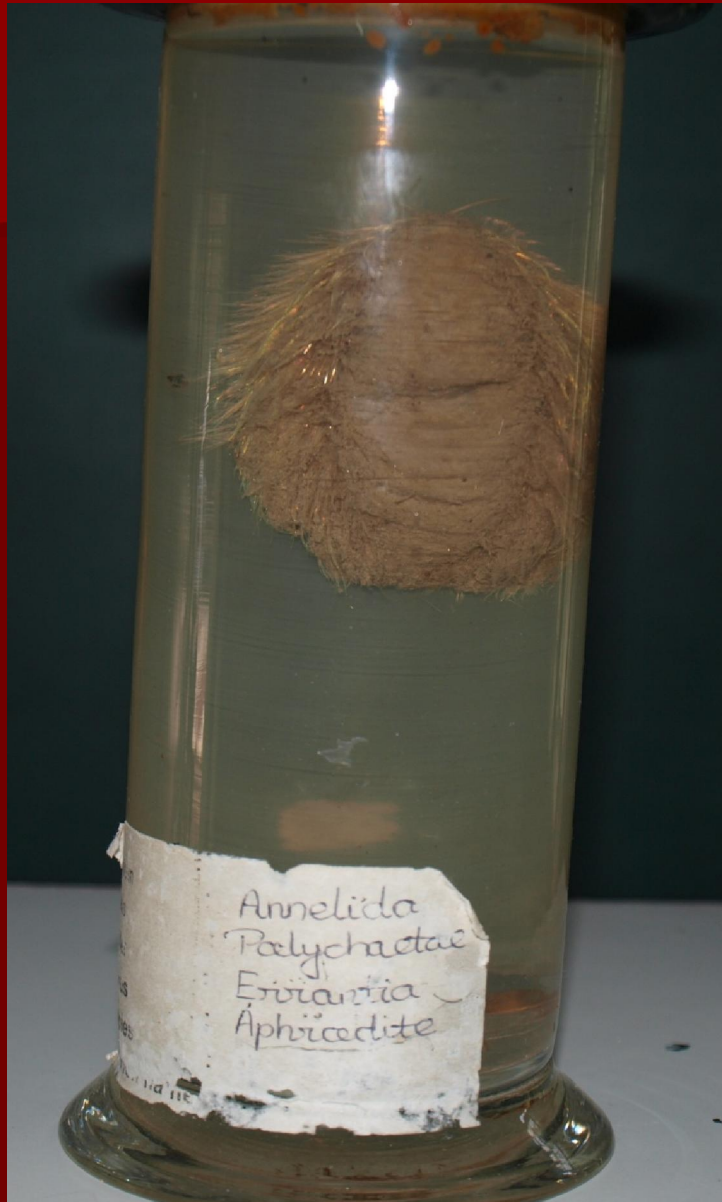
Earthworm



- n Phylum: Annelida
- n Class: Oligochaeta
- n Order: Terricolae
- n Genus: *Pheretima*
- n General characteristics:

The body is annular, formed of segments that are most specialized in the anterior. Earthworms have a simple closed circulatory system. Most earthworms are decomposers feeding on undecayed leaf and other plant matter, others are more geophagous (soil eating).

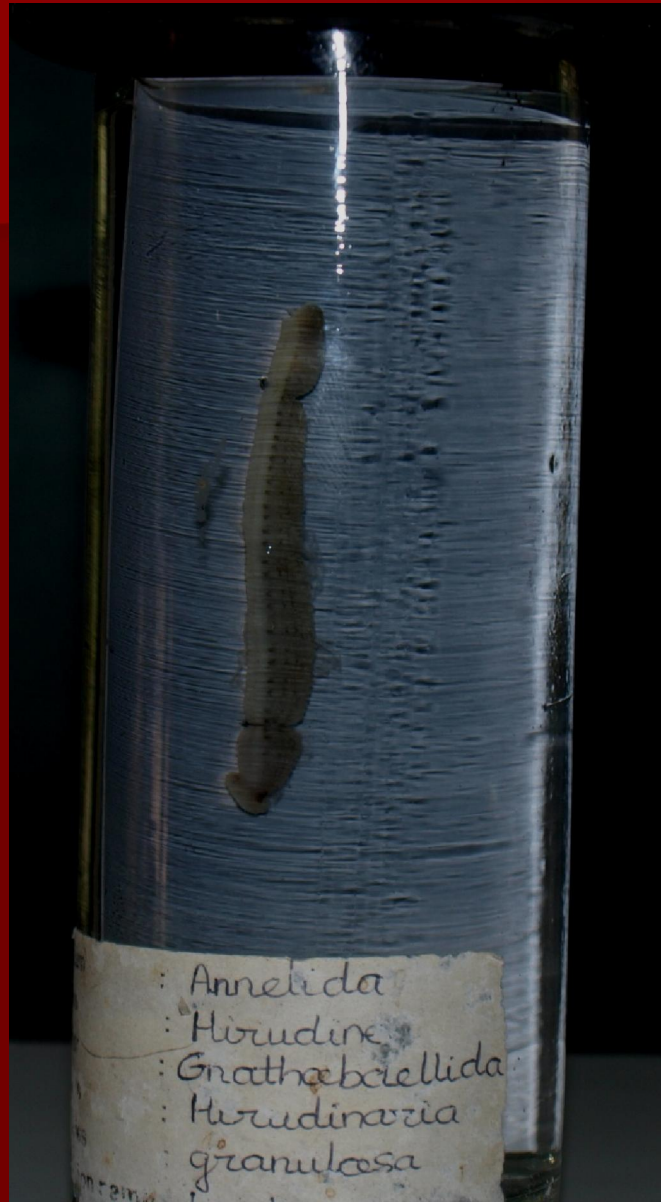
Sea Mouse



- n Kingdom: Animalia
- n Phylum: Nonchordata
- n Class: Polychaeta
- n Order: Errantia
- n Genus: *Aphrodite*
- n General characteristics:

It normally lies buried head-first in the sand. There is small head formed by prostomium & peristomium, the prostomium projects dorsally over the mouth. In front are two lateral palps & a short tentacle. Body is covered in a dense mat of *chaetae* (hairs), the body is short & broad with an arched dorsal side, and a flat ventral side which is annulated to form a creeping sole. It is carnivores, chiefly eating other polychaetes. The iridescent threads or setae are on the back.

Cattle Leech



- n Kingdom: Animalia
- n Phylum: Annelida
- n Class: Hirudinea
- n Order: Gnathobdellida
- n Genus: *Hirudinaria*
- n General characteristics:

Common leech found in our ponds, lakes, swamps, etc. It is a facultative ectoparasite of cattle, because it sucks blood (*sanguinivorous*). Body is 12 to 38 cm long, about a cm broad, somewhat dorsoventrally flattened & divided into 33 segments. There is no distinct head. Anterior part of body is narrower and terminally bears a ventral, triradiate mouth surrounded by a cup-like muscular anterior sucker.

Phylum

Arthropoda

Grasshopper



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Insecta
- n Order: Orthoptera
- n Genus:
- n General characteristics:

Grasshoppers have antennae that are almost always shorter than their body and short ovipositors. They also have pinchers or mandibles that cut and tear off food. Those species that make easily heard noises usually do so by rubbing the hind femurs against the forewings or abdomen. Hind wings are membranous while front wings are not fit for flight. Females are normally larger than males, with short ovipositors. Males have a single unpaired plate at the end of the abdomen. Females have two pairs of valves at the end of the abdomen used to dig in sand when egg laying.

Centipede



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Chilopoda
- n Order: Scolopendromorpha
- n Genus: *Scolopendra*
- n General characteristics:

Commonly called centipede. These are elongated metameric animals with one pair of legs per body segment. Despite the name, centipedes can have a varying number of legs from under 20 to over 300. Centipedes are found in an array of terrestrial habitats from tropical rainforests to deserts. They are among the largest terrestrial invertebrate predators.

Tadpole fish



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Crustacea
- n Order: Notostraca
- n Genus: *Apus*
- n It is found in fresh water in most parts of the world. Commonly known as tadpole fish. Body is elongated measuring about 20-30 mm in length. Anterior 2/3rd of the dorsal surface is covered by a horse shoe shaped carapace. Head is broad & depressed, bears paired eyes, a median eye & antennules & antennae below. Ana lsegment bears a pir of caudal styles.

Squilla



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Crustacea
- n Order: Stomatopoda
- n Genus: *Squilla*
- n General characteristics:

It is chiefly found and fished in the Mediterranean Sea. It grows up to 200 millimetres (8 in) long; dull brown in colouration, has two brown eye spots, circled in white, at the base of the telson. *Squilla* digs burrows in muddy and sandy bottoms. It remains in its burrow during the day and comes out at night to hunt, and in the winter to mate.

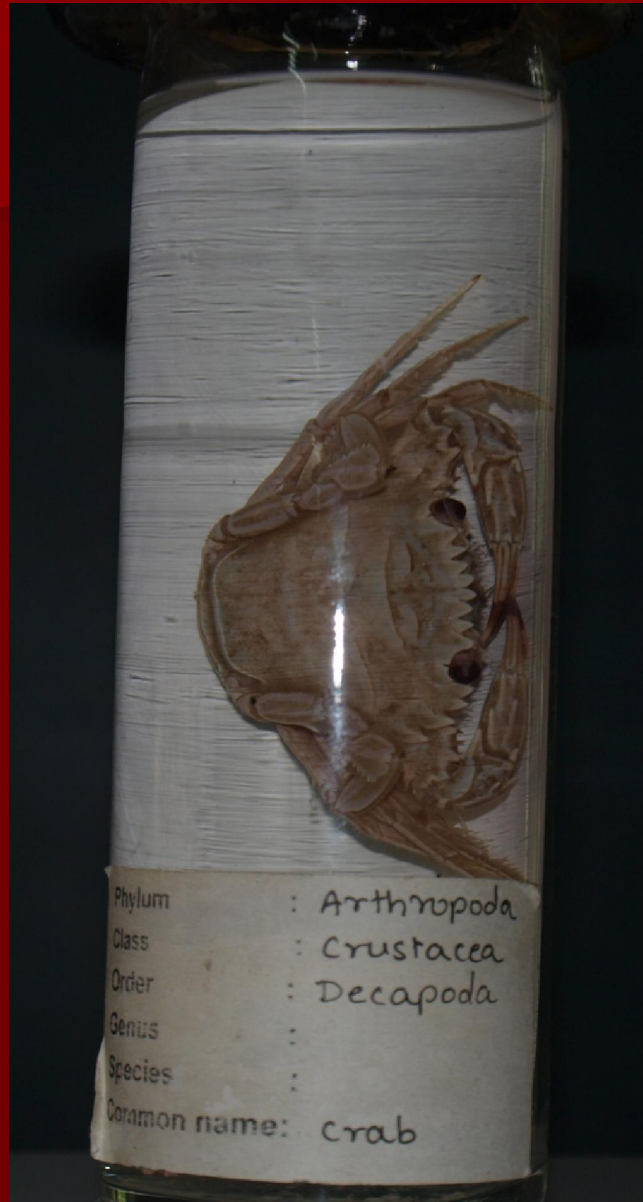
Prawn



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Crustacea
- n Order: Decapoda
- n Genus: *Macrobranchium*
- n General characteristics:

Prawns usually have claws on three pairs of their legs. They release the eggs into the water after fertilisation & the gill structure is branching in prawns. They are found worldwide and include commercially significant species.

Crab



- n Kingdom:Animalia
- n Phylum: Arthropoda
- n Class : Crustacea
- n Order: Decapoda
- n Genus:
- n General characteristics:

Crabs are generally covered with a thick exoskeleton, and armed with a single pair of chelae (claws). Crabs are found in all of the world's oceans, while many crabs live in fresh water and on land, particularly in tropical regions. Crabs vary in size from the pea crab, a few millimetres wide, to the Japanese spider crab, with a leg span of up to 4 metres (13 ft). They are found throughout the world's tropical and semi-tropical regions.

Termite



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: **Insecta**
- n Order: Isoptera
- n Genus:
- n General characteristics:

The termites are social insects. They divide labour among gender lines, produce overlapping generations and take care of young collectively. Mostly feed on dead plant material, like wood, leaf litter, soil, or animal dung. Termites are major detritivores, in the subtropical and tropical regions, and recycle wood and other plant matter. About 10% of 4,000 species are eco significant as pests that can cause serious structural damage to buildings, crops or plantation forests.

Julus



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Myriapoda
- n Order: Juliformia
- n Genus: *Julus*
- n General characteristics:

It is found hidden usually in dark & damp places under stones or wood or decaying leaves. Body elongated & cylindrical consisting of large no. of segments. Head bears a pair of short seven jointed antennae. Each trunk segment, except the first four & last segment, bears two pairs of legs. Sting glands present along the sides of the body.

Dragonfly



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Insecta
- n Order: Odonata
- n Genus:
- n General characteristics:

Characterized by large multifaceted eyes, two pairs of strong transparent wings, and an elongated body. In adults the wings are held away from, and perpendicular to, the body when at rest. Dragonflies possess six legs but most of them cannot walk well. Dragonflies are some of the fastest insects in world. They are valuable predators that eat mosquitoes, and other small insects like flies, bees,, and ants They are usually found around lakes, ponds, streams and wetlands because their "nymphs", are aquatic.

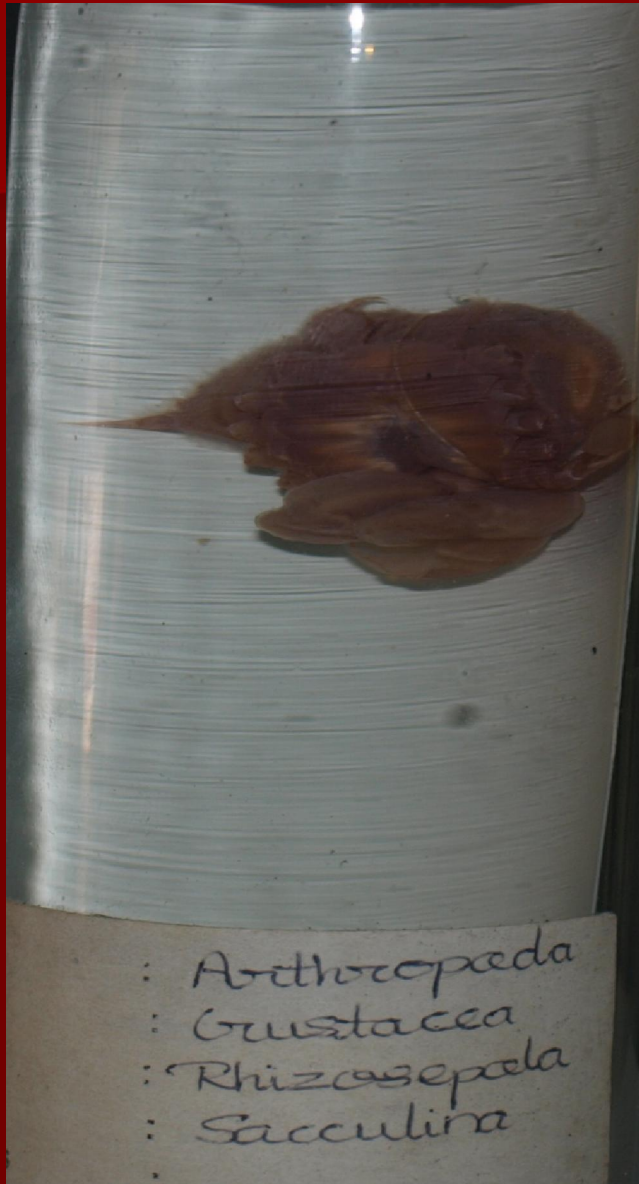
Scorpion



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Arachnida
- n Order: Scorpionida
- n Genus: *Centruoides*
- n General characteristics:

They have eight legs and a pair of grasping claws and the narrow, segmented tail, carried in a characteristic forward curve over the back, ending with a venomous stinger. Though the scorpion has a fearsome reputation as venomous, only 25 species have venom capable of killing a human being.

Sacculina



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Maxillopoda
- n Order: Cirripedia
- n Genus: *Sacculina*
- n General characteristics:

It is found as parasite on crabs, commonly known as root-headed barnacle. It has the appearance of a fleshy tumor attached by a peduncle to the abdomen of the crab on its ventral side. It shows extreme degeneration due to parasitic mode of life. Segmentation, *appendages, mouth & anus are absent.* *Sacculina* causes many changes in the secondary sexual characters of the host, a phenomenon known as parasitic castration.

Ear wig



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Insecta
- n Order: Dermaptera
- n Genus: *Forficula*
- n General characteristics:

Typical earwigs have characteristic cerci, a pair of forceps-like pincers on their abdomen, and membranous wings folded underneath short forewings. Some are tiny parasites on mammals and lack the typical pincers. Earwigs rarely fly, even though they are capable of doing so. Earwigs are nocturnal; they often hide in small, moist crevices during the day, and are active at night, feeding on a wide variety of insects and plants. Cause damage to foliage, flowers, and various crops.

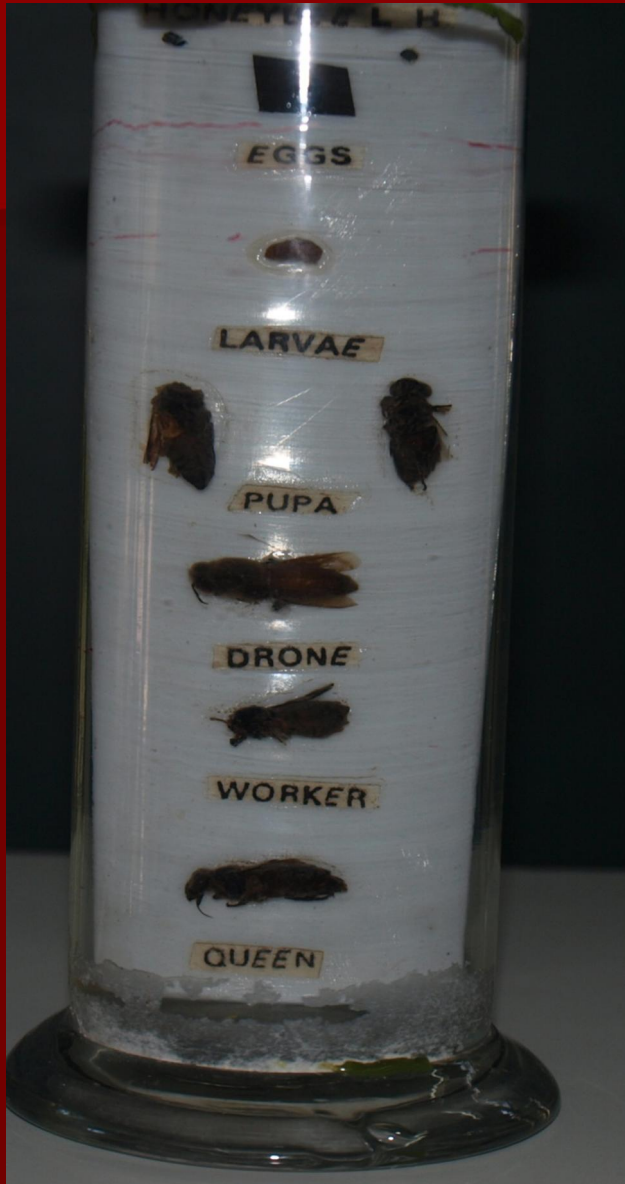
Goose barnacle



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Crustacea
- n Order: Thoracica
- n Genus: *Lepas*
- n General Characteristics:

Commonly known as Goose barnacle. It is sessile and found all over the world attached to the floating objects. Body consists of a long stalk or pedicel. Pedicel is covered with a wrinkled skin and bears the body proper at its distal end. *Lepas* feeds upon minute organisms gathered by the thread like feet and are wafted into the mouth.

Honey bee- life cycle



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Insecta
- n Order: Hymenoptera
- n Genus: *Apis*
- n General characteristics:

Life cycle of honey bee is complete including egg, larva, pupa and adult. The colony of honey bees is highly organized system of division of labour. A normal colony consists of 3 castes – 1 queen, 20000-30000 workers & few hundred drones. The queen is fertile while female workers are sterile females and drones are fertile males.

Silk worm -life cycle



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Insecta
- n Order: Lepidoptera
- n Genus: *Bombyx*
- n General characteristics:

The life cycle of silkworm is complete including the four stages namely, egg, larva, pupa & adult. After complete growth the larva spins a cocoon around itself & the pupa is inside the cocoon. Silk is obtained by boiling the cocoons.

Phylum

Mollusca

Sea Mussel



n Kingdom: Animalia

n Phylum: Mollusca

n Class: Bivalvia

n Order: Mytiloida

n Genus: *Mytilus*

n General Characteristics:

It is marine, sedentary, cosmopolitan and found attached to rocks between tide marks. Body is enclosed in a wedge shaped shell of two equal valves, which is pointed in front and rounded behind. Byssus threads protrude from between two shell valves ventrally by which it is attached stones and rocks. Mantle is bilobed and forms an exhalant siphon posteriorly. Foot is cylindrical, elongated with a ventral groove continuous with a byssus pit. Anterior adductor muscle is weaker while posterior adductor muscle is strongly developed.

Grey slug



n Kingdom: Animalia

n Phylum: Mollusca

n Class: Gastropoda

n Order: Pulmonata

n Genus: *Limax*

n General characteristics:

It is terrestrial, cosmopolitan and found in gardens over damp soil and cultivated lands. Body is elongated and tapering behind and is divisible into head, foot and visceral hump. Head bears two pairs of retractile tentacles, the posterior part of tentacles bears small, black eyes at their tips. Mantle forms a shield like area over the anterior portion of the body. Shell is internal, thin and rudimentary, lies embedded in mantle. Foot is well developed.

Pearl oyster



n Kingdom: Animalia

n Phylum: Mollusca

n Class: Bivalvia

n Order: Pterioida

n Genus: *Pinctada*

n General Characteristics:

These are saltwater clams, marine, bivalve molluscs. They have a strong inner shell layer composed of nacre, also known as "mother of pearl". *Pinctada maxima* pearl oysters are the only oyster that produces South Sea pearls. Currently cultured primarily in Australia and Tahiti. All species within the genus share the physiological properties that can lead to them making large pearls of commercial value.

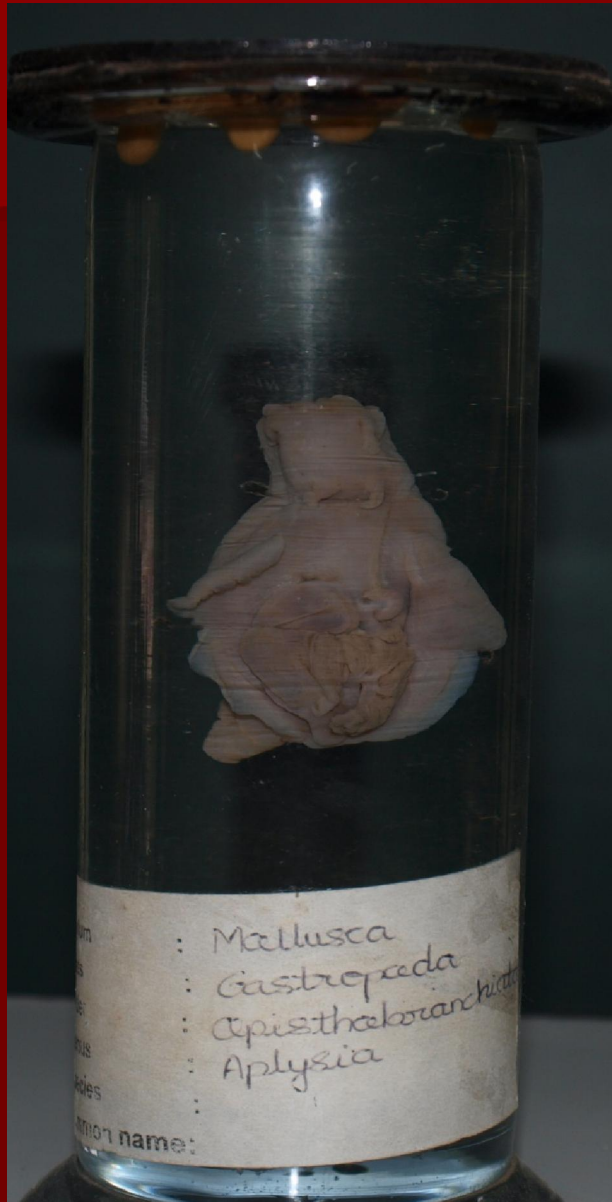
Hermit crab



- n Kingdom: Animalia
- n Phylum: Arthropoda
- n Class: Malacostraca
- n Order: Decapoda
- n Genus: *Pagarus*
- n General Characteristics:

Most species have long, spirally curved abdomens, which are soft, unlike the hard, calcified abdomens seen in related crustaceans. The vulnerable abdomen is protected from predators by a salvaged hermit, into which its whole body can retract. Most frequently empty seashell carried by the hermit crabs use the shells of sea snails; the tip of the hermit crab's abdomen is adapted to clasp strongly onto the columella of the snail shell. As the hermit crab grows in size, it has to find a larger shell and abandon the previous one. This habit of living in a second hand shell gives rise to the popular name "hermit crab", by analogy to a hermit who lives alone.

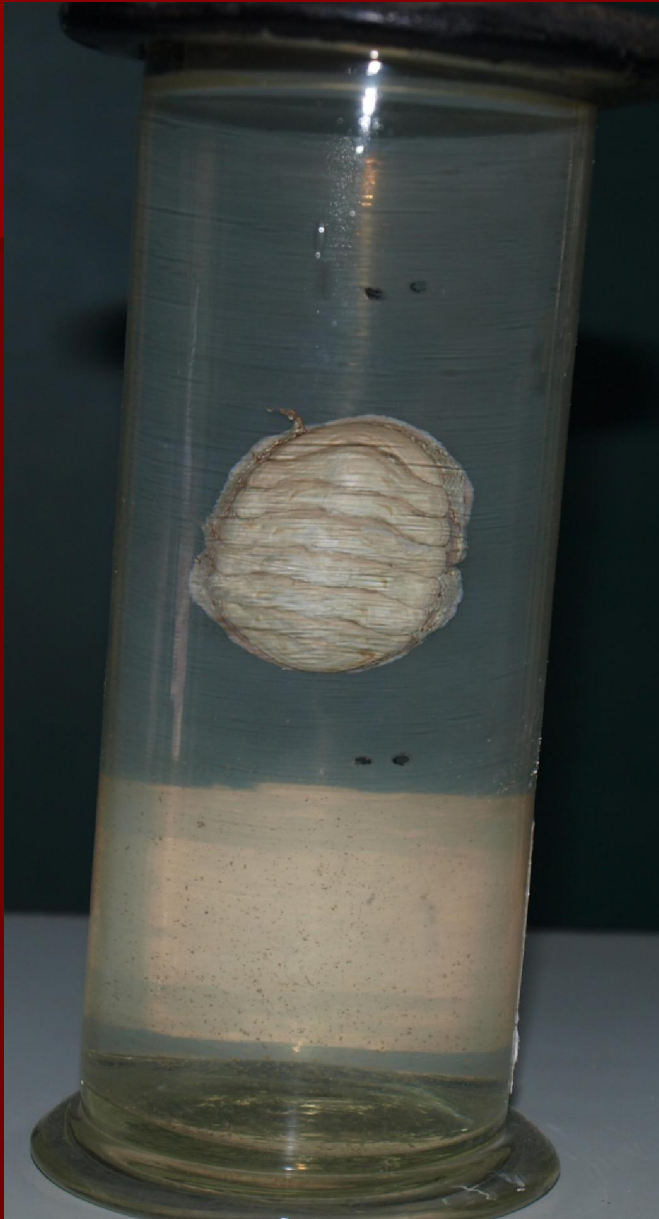
Sea Hare



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Gastropoda
- n Order: Opisthobranchia
- n Genus: *Aplysia*
- n General Characteristics:

It is found crawling in sea weeds in most part of the world from the arctic to Antarctic. It is commonly known as Sea hare. The body is soft and lumpy with a thin and flexible plate-like shell almost completely covered by mantle. Anus lies at the posterior end. Hermaphrodite with a single generative duct. In the wall of the mantle is a gland which secretes a purple pigment. It feeds mainly on the sea weeds.

Chiton



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Polyplacophora
- n Order: Chitonina
- n Genus: Chiton
- n General Characteristics:

It is a sluggish marine animal found attached to the rocks, empty shells and corals between tide marks. Body is elongated, Bilaterally symmetrical and dorso-ventrally compressed and consists of shell, foot, mantle and the visceral mass. Mouth and anus are at the opposite ends. Numerous pairs of bipectinate ctenidia lying on either side of the body in the mantle groove. Sexes are separate gonad is single and median and gonoducts are paired. Development includes a trochophore larva.

Doris



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Gastropoda
- n Order: Nudibranchia
- n Genus: *Doris*
- n General Characteristics:

It is sluggish marine animal moving between weeds and feeding on the encrusting organisms. It is commonly known as the sea lemon. The body is bilaterally symmetrical, short, flat and oval with convex dorsal surface. Skin is tough and contains calcareous spicules of various types arranged symmetrically. Head bears a pair of short retractile tentacles or rhinophores. Hermaphrodite. It exhibits complete detorsion as shown by the absence of shell mantle and ctenidium.

Unio



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Bivalvia
- n Order: Eulamellibranchiata
- n Genus: *Unio*
- n General Characteristics:

Aquatic, Body is bilaterally symmetrical and laterally compressed. Shell consists of two lateral valves, hinged together mid-dorsally. Head is not distinct; pharynx, jaws, radula and tentacles are absent. Foot large, byssus small or absent. Gills are firm and basket like. Gill filaments are united by vascular interfilamentar and inter-lamellar-junctions. Sense organs are statocyst and osphradia. Sexes are separate or united. Two equal; sized adductor muscles present. Siphon of small or large size present. Development is accompanied by metamorphosis which usually includes a trochophore larva.

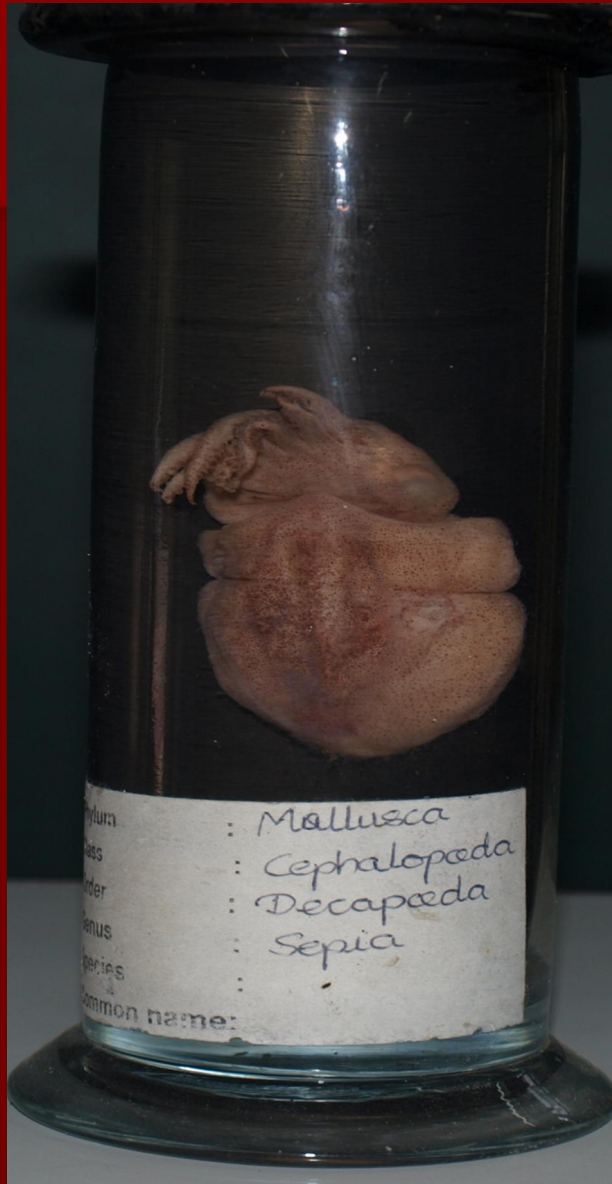
Patella



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Gastropoda
- n Order: Archaeogastropoda
- n Genus: *Patella*
- n General Characteristics:

Patella a limpet, is a small oval gastropod. It is a sluggish marine gastropod, found attached to the rocks and feeding on minute algae. Shell is oval and rounded without operculum. Head is distinct; bears a pair of stout, sensory tentacles and eyes. Foot is ventral, broad and flat, used for creeping and adhering. True mantle cavity is restricted anteriorly and the ctenidia or gills have disappeared. Secondary mantle cavity extends all round between the foot and mantle and contains a series of pallial; gills or secondary branchiae for respiration. Radula composed of very few, strong hooked teeth in each row. Heart with single auricle.

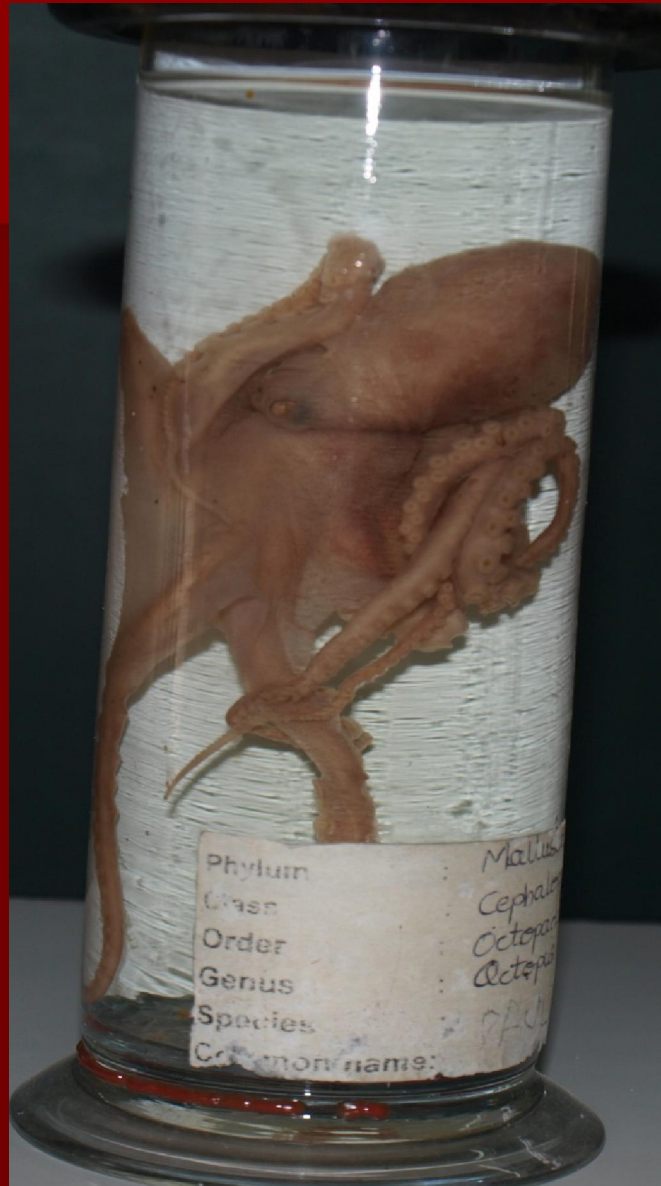
Sepia



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Cephalopoda
- n Order: Sepiida
- n Genus: *Sepia*
- n General Characteristics:

It is commonly known as cuttle fish. It is a marine form, found in the shallow waters and world-wide in distribution. Body is bilaterally symmetrical, dorso-ventrally flattened and is divisible into head, neck and trunk. Head bears a pair of large eyes and five pairs of arms surrounding the mouth. The four pairs are short and stout bearing four longitudinal rows of suckers on the inner flat surface. The fifth pair of arms is known as tentacles which are comparatively longer and narrower and provided with suckers only towards their free ends. A pair of plum shaped ctenidia or gills for respiration and single kidney for excretion. Sexes separate. In the male left fourth arm is hectocotylised

Octopus



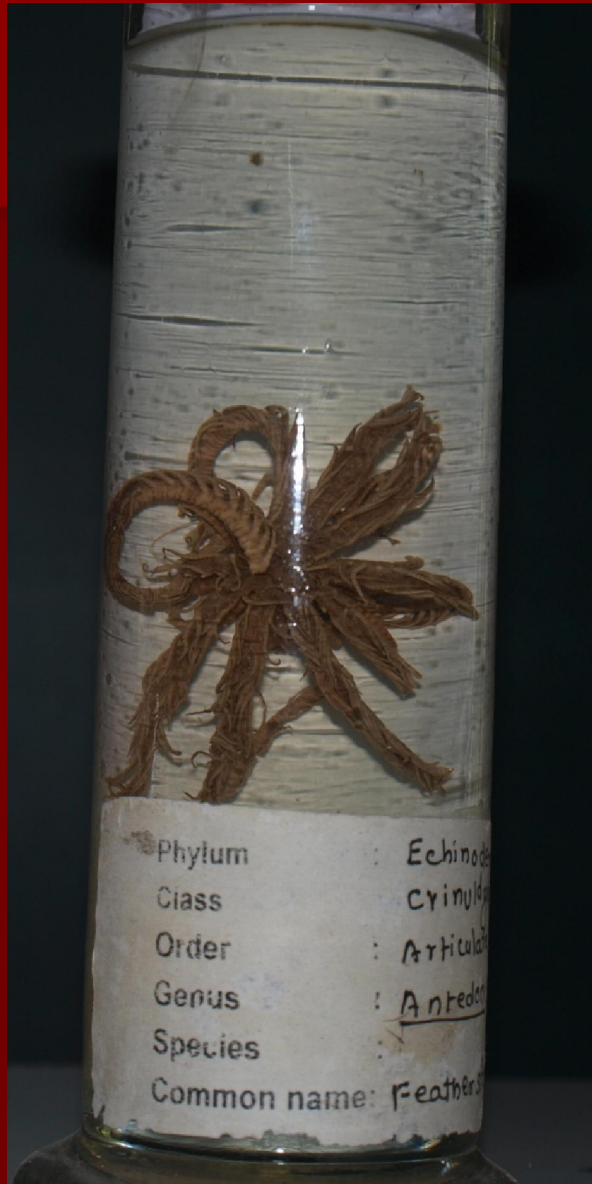
- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Cephalopoda
- n Super order: Octopodiformes
- n Order: Octopoda
- n Genus: *Octopus*
- n General Characteristics:

It is popularly known as Devil-fish. Body is globose with large head and trunk region. Head bears a pair of eyes and eight elongated equal arms webbed at the base which surrounded the mouth. Each arms bears suckers arranged in two rows. Third right arm in male is modified into a spoon-shaped structure which serves for transferring the spermatophore into the mantle cavity of the female for fertilising the ova. Shell is absent. Mantle encloses the mantle activity and the visceral mass.

Phylum

Echinodermata

Feather star



- n Kingdom: Animalia
- n Phylum: Echinodermata
- n Class: Crinoidea
- n Order: Articulata
- n Genus: Antedon
- n General characteristics:

It is marine, found at moderate depths attached to the rocks and stones. Body consists of a central disc and a series of five radiating arms. Central disc is differentiated into upper oral surface and lower aboral surface. Oral surface is covered with a soft and leathery skin. Aboral surface bears several slender, curved, jointed cirri. Each arm is divided at its base into two so that there are ten long slender flexible arms, bearing lateral pinnules.

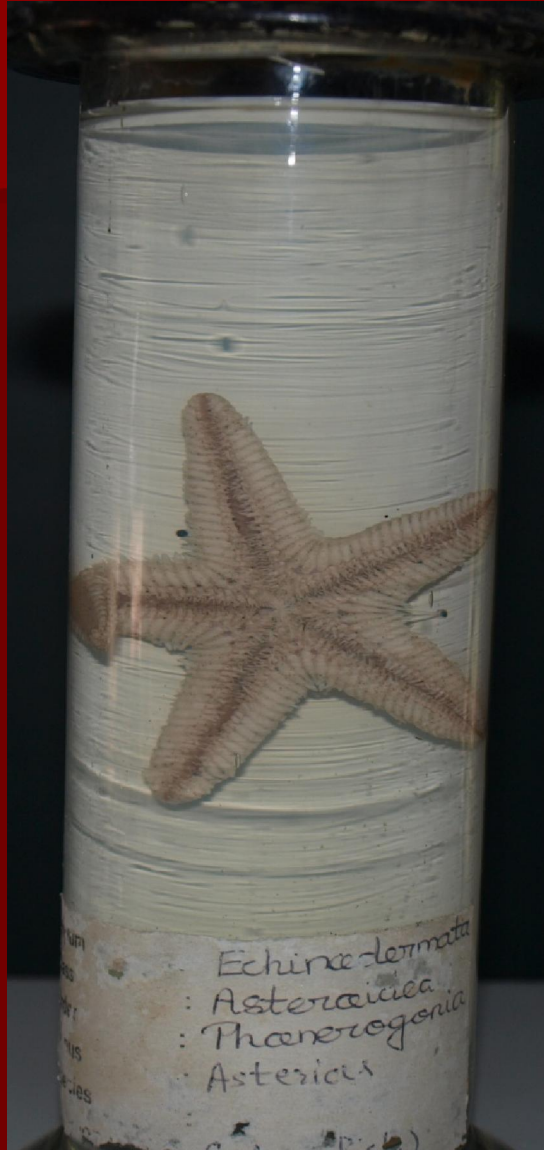
Sea cucumber



- n Kingdom: Animalia
- n Phylum: Echinodermata
- n Class: Holothuroidea
- n Order: Aspidochirota
- n Genus: *Holothuria*
- n General Characteristics:

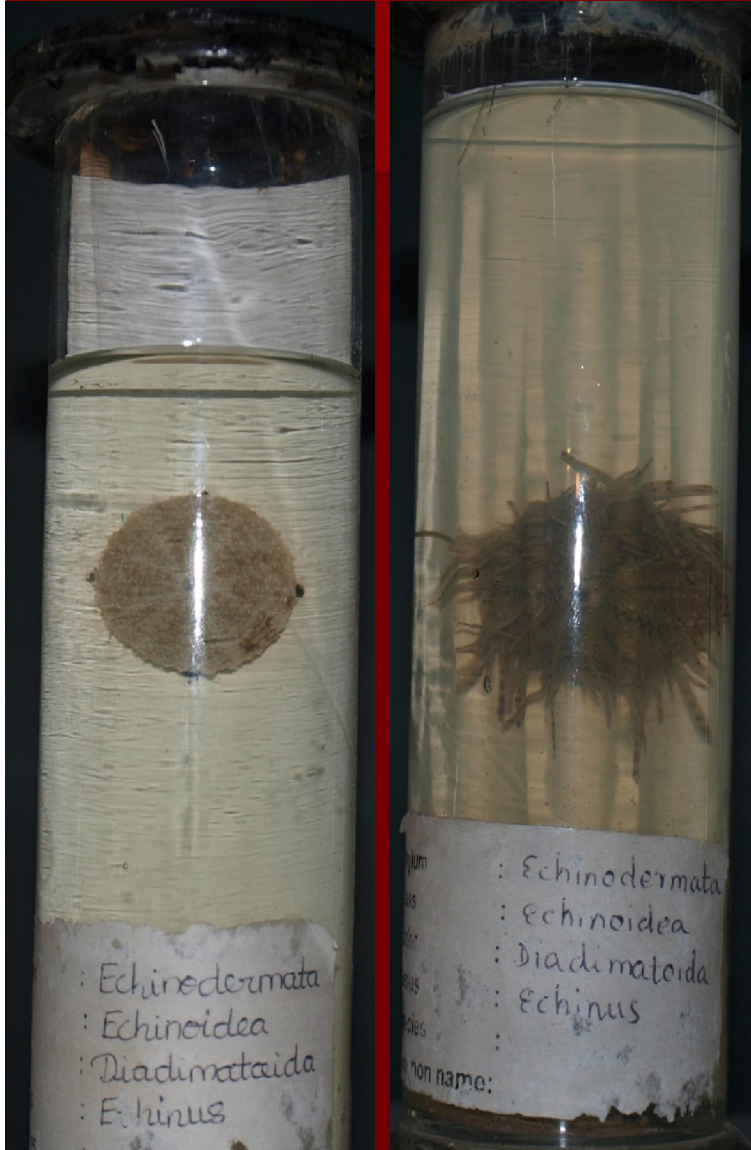
Body is bilaterally symmetrical, usually elongated in the oral-aboral axis having mouth at or near one end and anus at or near the other end. Body surface is coarse. Mouth is surrounded by 10-30 mostly 20 pelate or branched oral tentacles. Retractor muscles of pharynx are absent. A pair of well developed respiratory trees is present. Podia or tube feet are numerous.

Starfish



- n Kingdom: Animalia
- n Phylum: Echinodermata
- n Class: Asteroidea
- n Order: Forcipulata
- n Genus: *Asterias*
- n General Characteristics:
 - it is exclusive marine, bottom dwelling, or benthonic animal. The most species are generally solitary but under certain ecological conditions, such as to avoid direct sunlight or excessive drying, many individuals may gather at some place for the purpose of protection. Most of them are nocturnal and move by crawling on the bottom, mostly at a rather slow rate. All are carnivorous and feed voraciously on almost any available slow moving or sessile animals. In general, it exhibit remarkable power of autotomy and regeneration.

Echinus



- n Kingdom: Animalia
- n Phylum: Mollusca
- n Class: Pharetronida
- n Order: Sycettida
- n Genus: *Echinus*
- n General Characteristics:

It is commonly known as sea urchin. It is marine found in the sea in the rocky places. Body is globular in shape, somewhat flattened at the two poles forming distinct oral and aboral poles. Body is enclosed in a rigid globular shell formed of closely fitted calcareous plates. Entire surface of the animal is covered with spines articulated to the shell.

Phylum

Hemichordata

Balanoglossus



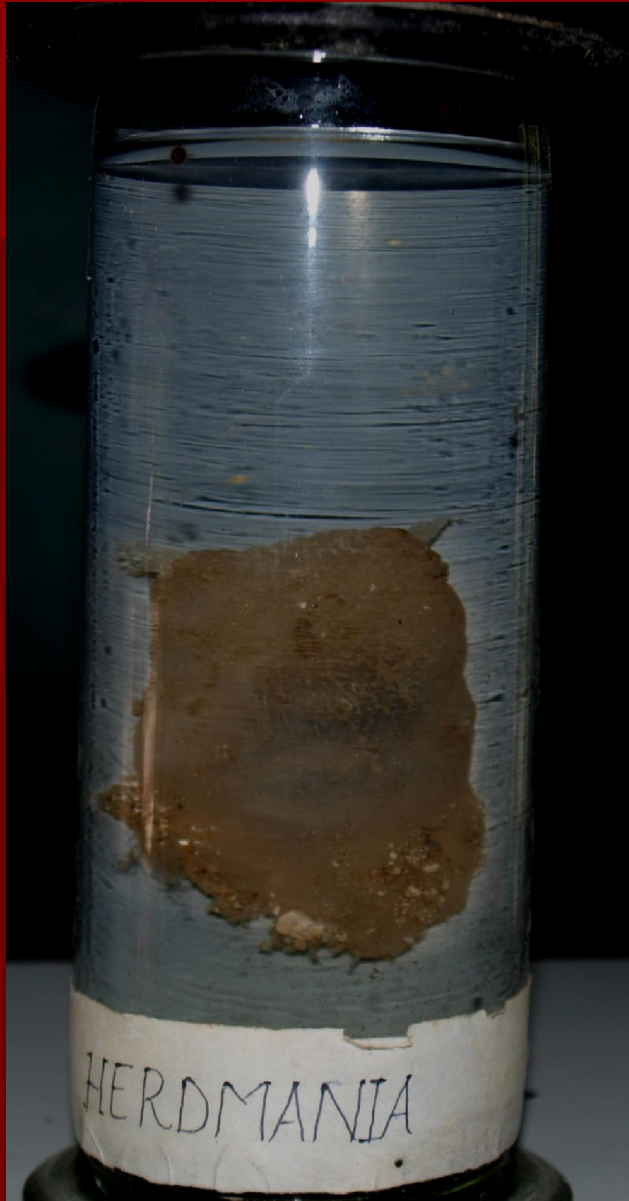
- n Kingdom: Animalia
- n Phylum: Hemichordata
- n Class: Enteropneusta
- n Genus: *Balanoglossus*
- n *General Characteristics:*

It is an ocean-dwelling acorn worm (Enteropneusta) genus of great zoological interest because it is, like Hemichordates, an "evolutionary link" between invertebrates and vertebrates. It is a deuterostome, and resembles the Ascidians or sea squirts, in that it possesses, or "gill slits", but no notochord and no nerve cord. It does have a stomochord, however, which is gut chord within the collar. Their heads may be as small as 2.5 mm or as large as 5 mm.

Phylum

Chordata

Herdmania



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Ascidiacea
- n Order: Pleurogona
- n Genus: *Herdmania*
- n General Characteristics:

The solitary ascidian is one of the most commonly encountered species of ascidians. It commonly referred to simply as sea squirts, this name is ambiguous, as it can refer to any member of the sub-phylum Urochordata. This solitary ascidian is sometimes referred to as the red-throated ascidian, as its two siphons are a vivid red in colour. The most solitary ascidians that are encountered are so covered in algae that the coloration is often not visible.

Petromyzon



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Cephalaspidomorphi
- n Order: Petromyzontiformes
- n Genus: *Petromyzon*
- n General characteristics:

The sea lamprey is a parasitic lamprey found on the Atlantic coasts of Europe and North America, in the western Mediterranean Sea, and in the Great Lakes. It is brown or gray on its back and white or gray on the underside and can grow to be up to 90 cm (35.5 in) long. Sea lampreys prey on a wide variety of fish. The lamprey uses its suction-cup like mouth to attach itself to the skin of a fish and rasps away tissue with its sharp probing tongue and teeth. Secretions in the lamprey's mouth prevent the victim's blood from clotting. Victims typically die from excessive blood loss or infection.

Myxine



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Myxini
- n Order: Myxiniiformes
- n Genus: Myxine
- n General characteristics:

It is also known as **Hagfish** & found in buried in the muddy sea bottom. They are nocturnal feeders. Body is eel like measuring about 60 cm in length. The surface of the body is soft and smooth without scales. The mouth is terminal and surrounded by soft lips and four pairs of short tentacles supported by skeletal rod. Hagfishes are injurious to fish industry.

Electric ray



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Chondrichthyes
- n Order: Torpediniformes
- n Genus: *Torpedo*
- n General characteristics:
- n The **electric rays** are a group of rays, flattened cartilaginous fish with enlarged pectoral fins. They are known for being capable of producing an electric discharge, ranging from as little as 8 volts up to 220 volts depending on species, used to stun prey and for defense. There are 69 species in four families. With their thick, flabby bodies and short tails, torpedo rays are poor swimmers. Their disk-shaped bodies allow them to remain suspended in the water or roam with minimal swimming effort.

Sea horse



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Syngnathiformes
- n Genus: *Hippocampus*

General characteristics:

There are nearly 50 species of seahorse. They are mainly found in shallow tropical and temperate waters throughout the world. They prefer to live in sheltered areas such as seagrass beds, coral reefs, or mangroves. These fish form territories, with males staying in about 1 square metre (11 sq ft) of their habitat while females range about one hundred times that area.

Catla



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Cypriniformes
- n Genus: *Catla*
- n General characteristics:

It is commonly found in rivers and freshwater lakes in India, Nepal, Myanmar, Bangladesh and Pakistan. In India it is commonly known as the Bhakur. Body is short, deep with rounded abdomen, measuring more than 1 meter in length. Colour blackish grey above & silvery on the sides. Scales are pink or coppery. Head is broadly large having large rounded eyes. Mouth is wide with prominent lower lip. It is important as a food fish.

Eel



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Anguilliformes
- n Genus: *Anguilla*
- n General characteristics:

Most eels live in the shallow waters of the ocean and burrow into sand, mud, among rocks, or in cracks found in coral reefs. A majority of eel species are nocturnal, and thus are rarely seen. Body is elongated, cylindrical and snake like. It measures up to one meter. The colour is brown on the back and yellowish below. Dorsal, caudal and anal fins are confluent, pectoral fin small and pelvic fin is absent. Fins are supported by rays.

Mrigal



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Cypriniformes
- n Genus: *Cirrhina*
- n General characteristics:

Cirrhina mrigala called as mrigal is freshwater carp of India. The colour of the body is silvery, dark grey along the back, sometimes with coppery tinge. The length of the body up to 66 cm. The body is covered by large hexagonal cycloid scales. Head large with eyes and mouth is wider with thinner lips. Pelvic, Pectoral & anal fins are orange³ in colour tipped with black. It is used as food.

Sardine



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Clupeiformes
- n Genus: *Sardina*
- n General characteristics:

Sardines are silvery, laterally-flattened fish.

These fish usually live in warm marine waters, are found around the shores of every continent, and are an extremely valuable food fish.

Sardines have a flat body which is covered with large, reflective, silvery scales. In the middle of their belly, they have a set of specialized scales, known as scutes, which are jagged and point backwards. Having very small teeth or no teeth at all, sardines eat plankton, which they filter from the water through their gills. While numerous species of sardines live off the coasts of India, China

Rohu



- n Kingdom Animalia
- n Phylum Chordata
- n Class Actinopterygii
- n Order Cypriniformes
- n Genus: *Labeo*
- n General characteristics:

Commonly called as rohu. Body is elongated with moderately rounded abdomen, measuring upto 1 meter in length. Colour brownish grey to black above and silvery white below. Scales are large and orange to reddish in colour in the centre. Head is prominent with blunt snout. Mouth is transverse and semi oval with fringed thick lips. Paired fins are present. Dorsal fin single just above the pelvic fins, caudal fins forked. It is economically important due to its food value.

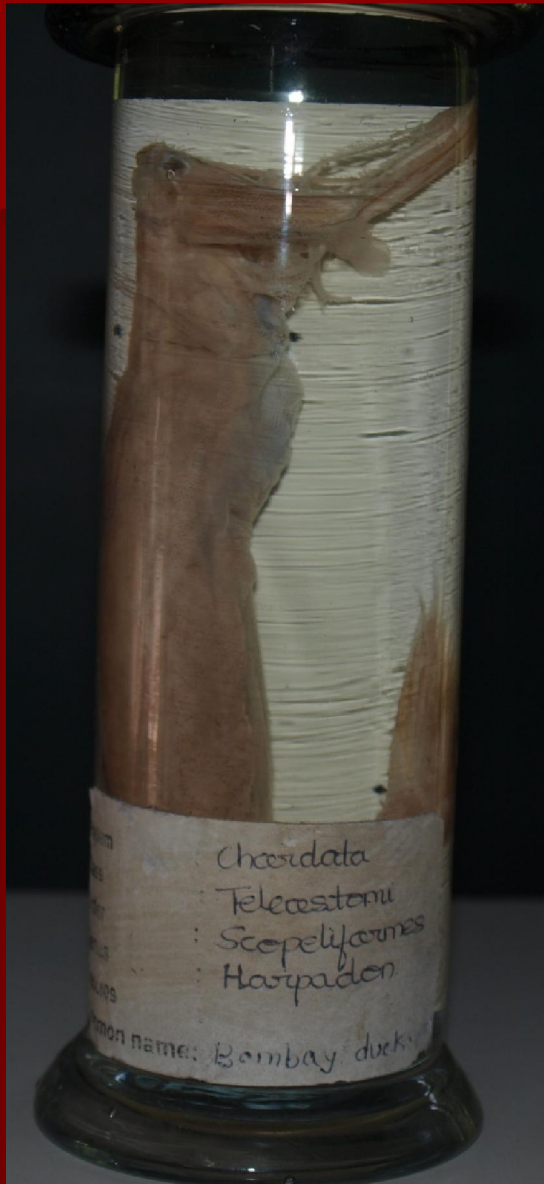
Flying fish



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Beloniformes
- n Genus: *Exocoetus*
- n General characteristics:

Flying fish live in all of the oceans, particularly in warm tropical and subtropical waters. Their most striking feature is their pectoral fins, which are unusually large, and enable the fish to hide and escape from predators by leaping out of the water, taking short gliding flights through air just above the water's surface. The curved profile of the "wing" has an aerodynamic shape that is comparable to that of a bird wing. The fish is able to increase its time in the air by flying straight into or at an angle to the direction of updrafts created by a combination of air and ocean currents. From 1900 to the 1930s, flying fish were studied as possible models used to develop airplanes.

Bombay duck



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Aulopiformes
- n Genus: *Harpadon*
- n General characteristics:

Indo-West Pacific fish is native to the Gulf of Arabia, around India and through Southeast Asia and the South China Sea. It shares many characteristics of fish living at great depth: gaping jaw with many long sharp teeth, translucent, almost gelatinous flesh, incompletely calcified bones and nighttime phosphorescence, so it may be a deep benthic fish that returned to shallower waters or there may be a common ancestor. It inhabits moderate depth water along the coasts and sometimes enters estuaries. Bumalo supposedly has scales on the posterior part of the body. Salted and sun dried, this fish is called "Bombay Duck".

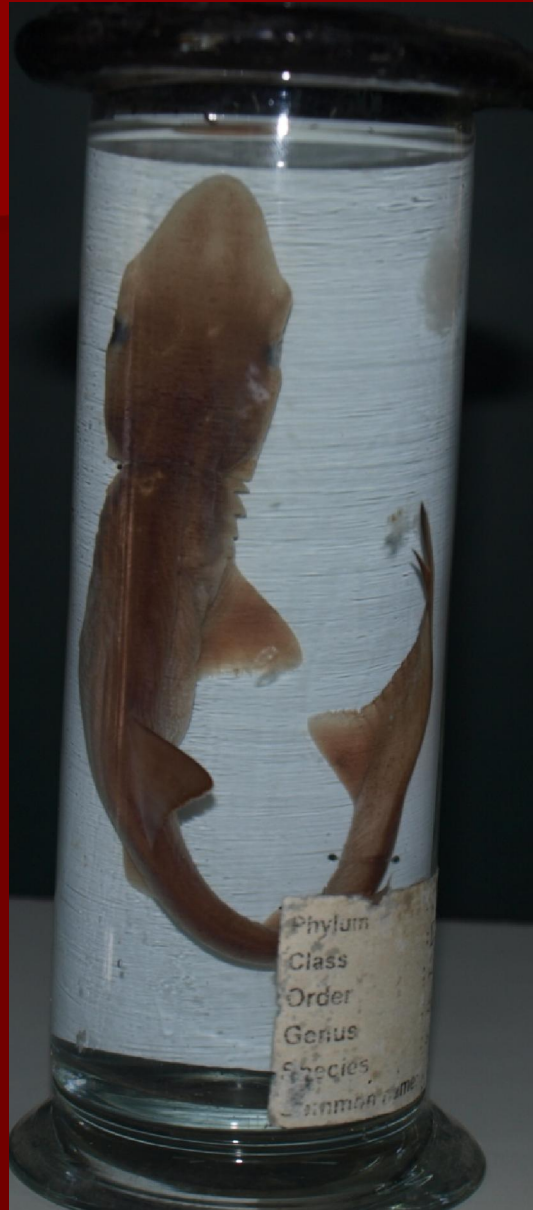
Sucker fish



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Actinopterygii
- n Order: Perciformes
- n Genus: *Echeneis*
- n General characteristics:

It is marine fish feeding on small fish. It attaches itself by means of its adhesive organs boats, sharks, turtles etc. Body is elongated, measuring about 1 meter in length, fusiform covered with small cycloid scales. Head is depressed, bears lateral eyes and wide and deep mouth. Adhesive disc is flat, oval and transversely furrowed and is an effective organ for attachment. It bears 21-28 transverse lamellae. On the east coast of Africa, it is employed for catching the turtles.

Spadenose shark



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Chondrichthyes
- n Order: Carcharhiniformes
- n Genus: *Scoliodon*
- n General characteristics:

Sharks were known to mariners as "sea dogs" a deep sea species of only 17 centimeters in length. Sharks are found in all seas and are common down to depths of 6,600 ft. Few exceptions such as the bull shark and the river shark which can live both in seawater and freshwater. Body is long spindle shape, long & is divisible into head, trunk and tail. The colour of the body is dark grey on the dorsal side and pale on ventral surface. They breathe through five to seven gill slits. Sharks have a covering of dermal denticles that protects their skin from damage and parasites, and improves their fluid dynamics so the shark can move faster. Shark has food value in many countries.

Frog



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Amphibia
- n Order: Anura
- n Genus: *Rana*
- n General characteristics:

It is found in moist places, fresh water ponds & streams. Body is green with black patches along with yellow midrib in the dorsal surface. Body divided into head & trunk. Head is flat & more or less triangular and bears nostrils, eyes with eyelids & tympanum.

European Tree Frog



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Amphibia
- n Order: Anura
- n Genus: *Hyla*
- n General characteristics:

The word *Hyla* translates to "tree," and tree frogs are indeed arboreal. Males range from 32-43 mm and females range from 40-50 mm in length. They are slender with long legs which have discs on the frog's toes, which it uses to climb trees and hedges. Their dorsal skin is smooth, while their ventral skin is granular and whitish in color. Their dorsal skin can be green, gray, or tan depending on the temperature, humidity, or their mood. Females have a white throat, while males have a golden brown throat with large (folded) vocal sacs.

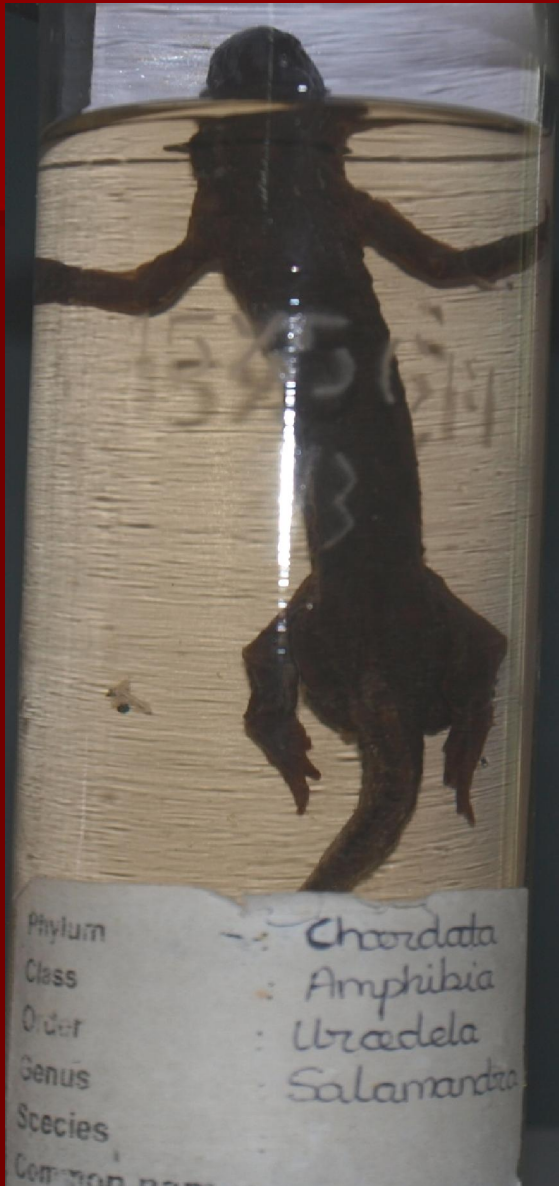
Toad



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Amphibia
- n Order: Anura
- n Genus: *Bufo*
- n General characteristics:

The characteristic features of toads are a result of convergent evolution in dry habitats. They are characterized by dry, leathery skin with brown coloration. They have wart-like parotoid glands, often mistaken as 'warts'. They are present on healthy specimens and are not a result of infection. Toads cannot transmit warts to people through handling or skin contact. The bumps on a toad's skin help the animal blend into its environment visually by breaking up its outline.

Salamander



n Kingdom: Animalia

n Phylum: Chordata

n Class: Amphibia

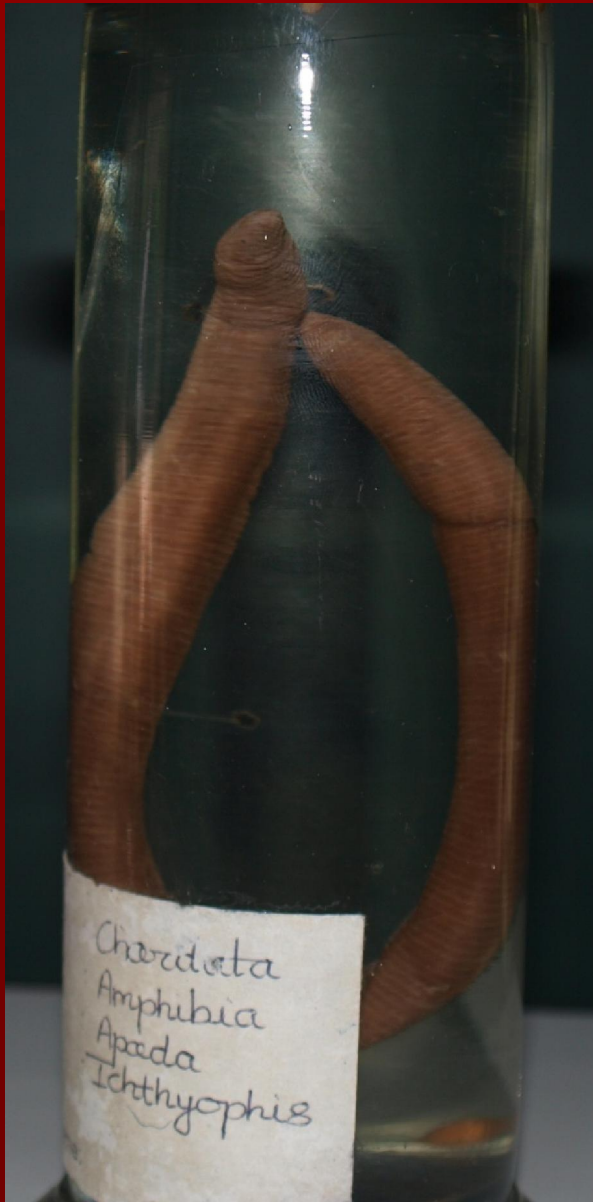
n Order: Urodela

n Genus: *Salamander*

n General characteristics:

They have slender bodies, short noses, and long tails. Their moist skin usually makes them reliant on habitats in or near water, or under some protection, often in a wetland. Some species are fully aquatic throughout life, some take to the water intermittently, and some are entirely terrestrial as adults. Most have four toes on their front legs and five on their rear legs. They are unique among vertebrates, they are capable of regenerating lost limbs, as well as other body parts.

Ichthyophis



- n Phylum: Chordata
- n Class: Amphibia
- n Order: Gymnophiona
- n Genus: *Ichthyophis*
- n General characteristics:

It sometimes called the Asian caecilian (Limbless Amphibians) found in Southeast Asia, southern Philippines, and western Indo-Australian Archipelago. It lies in burrows in moist ground. The animal is blind and adapted for burrowing life. Elongated and eel like body is divided into head, trunk & tail. Colour is dark brown or bluish black with a yellow band along the side. Skin is provided with numerous transverse grooves. Tail is short or vestigial. Tympanic membrane absent. Parental care is very well developed.

Cobra



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Reptilia
- n Order: Squamata
- n Genus: *Naja*
- n General Characteristics:

Cobra is a venomous (deadly poisonous) snake. Its venom is neurotoxic & fatal. When disturbed, most of these snakes can rear up and spread their hood in a characteristic threat display. It is shy residing under stones, mud walls, thick vegetation & in holes. It is diurnal. It hibernates in winters. Body is elongated measuring two meters in length, colour of the body is brown or blackish. Body covered with smooth scales without pits.

Flying lizard



n Kingdom: Animalia

n Phylum: Chordata

n Class: Reptilia

n Order: Squamata

n Genus: *Draco*

n General Characteristics:

It is gliding agamid lizard from Southeast Asia. It is arboreal, living on trees and feeds upon small insects and glides as long as 60m. The ribs and their connecting membrane can be extended to create a wing, the hind limbs are flattened and wing-like in cross-section, and a small set of flaps on the neck serve as a horizontal stabilizer.

Chelone



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Reptilia
- n Order: Testudines
- n Genus: *Chelonia*
- n General characteristics: It is marine. It measures 85-110 cm in length. Colour is olive or brown above with yellowish spots and pale yellow below. Body is divided into head, trunk and tail and is enclosed in a rigid shell. Carapace flat covered with smooth bony shield. Dorsal shields are juxtaposed, fitting closely into each other. Head short, tail & limbs are retractile inside the carapace.

Squirrel



- n Kingdom: Animalia
- n Phylum: Chordata
- n Class: Mammalia
- n Order: Rodentia
- n Genus: *Funambulus*
- n General Characteristics:

Squirrel is generally small animal having slender body, bushy tail, large eyes with soft and silky fur. The hind limbs are generally longer than the forelimbs, having four or five toes on each foot with a soft pad on the underside. They have very versatile and sturdy claws for grasping and climbing. They have an excellent sense of vision and a good sense of touch, important for tree-dwelling species. They have large gnawing incisors and grinding cheek teeth set back behind a wide gap, or diastema.

Rat placenta



§ Kingdom: Animalia

§ Phylum: Chordata

§ Class: Mammalia

§ Order: Rodentia

§ Genus: *Rattus*

§ General Characteristics:

Rats are medium-sized, long-tailed rodents. The best-known rat species are the Black and the Brown Rat. The common species are opportunistic survivors and known as Commensals. Male rats are called *bucks*, unmated females are called *does*, pregnant or parent females are called *dams*, and infants are called *kittens* or *pups*. A group of rats is either referred to as a *pack* or a *mischief*.

Bat



§ Kingdom: Animalia

§ Phylum: Chordata

§ Class: Mammalia

§ Order: Chiroptera

§ Genus: *Bat*

§ General Characteristics:

Bats are aerial, nocturnal, sleeping during daytime in caves or dark sheltered places & come out during night. It is gregarious & insectivorous, occasionally blood sucking. Body is small in size, covered with soft, dark brown fur. They produce ultrasonic sound waves. Only mammals naturally capable of true and sustained flight. The forelimbs are webbed and developed as wings. They do not able to flap their entire forelimbs, but instead flap their spread out digits, covered with patagium.