New Terms - Kingdom Animalia - Invertebrates

invertebrates - animals without a backbone - includes: jellyfish, sea stars, worms, insects, clams, and more.

vertebrates - animals with a backbone - includes: fish, mammals, birds, and others

Porifera - the sponges, characterized by having no symmetry or organs and have specialized collar cells.

Cnidaria - sea anemones and jellyfish, have two different body forms: medusa and polyp

radial symmetry - defined as having body parts equally arranged regularly around a central axis - sort of like the spokes on a bicycle.

bilateral symmetry - used to describe those animals, where if divided down the middle, would have a right and a left half that would be mirror images of each other.

nematocysts - cells that are responsible for defense and capturing in the jellyfish and sea anemones, by stinging and stunning the prey.

polyp - the body form in cnidarians that is tube-like and attached to some form of substrate.

medusa - the bell-shaped form of cnidarians

Platyhelminthes - the flatworms and tapeworms, first phylum to show cephalization; have no coelom.

cephalization - term that describes that one end of an animal is the head

Nematoda - the roundworms; have a cuticle covering and are scavengers.

pseudocoel - false coelom

Annelida - the earthworms and leeches; first phylum to show segmentation; have excretory devices called nephridia, and a water based hydrostatic skeleton.

coelom - the main body cavity of most animals with three layers, it is also filled with fluid-filled space between the inner and outer layers.

nephridia - funnel-shaped excretory devices found in most every segment of the annelids to remove water and waste.

hydrostatic skeleton - water based skeleton providing shape and support to the annelids

Mollusca - snails, clams, and squid; characterized by a mantle, some type of modified foot, and bilateral symmetry.

mantle - a fold of tissue that is draped around the soft fleshy body of the animal.

gastropods - snails and slugs; literally stomach foot; feed with radula.

bivalves - clams, scallops, oysters; flattened shells in two halves; are filter-feeders

cephalopods - squid, octopus, nautilus; literally ”head foot“; many move by jet propulsion; have large well developed eyes.

Arthropoda - spiders, crabs, insects; literally ”jointed foot“; many go through a process called metamorphosis.

exoskeleton - an external body skeleton that provides protection and support

antennae - sensory organs located on the head of arthropods

trachea - branching networks that are attached to the spiracles and are responsible for carrying oxygen to the body of arthropods.

spiracles - microscopic holes in the bodies of arthropods that open and close to regulate air flow and water loss in arthropods.

arachnids - the spiders, scorpions, and ticks; characterized by book lungs for respiration.

crustaceans - shrimps, crabs, lobster; able to regenerate lost or damaged appendages

insects - beetles, bees, grasshoppers, roaches; have special excretory organs called Malpighian tubules.

metamorphosis - process by which a larval form changes into an adult; typically seen in butterflies that were caterpillars in their larval state.

molting - growth process in arthropods that involves shedding the old, smaller exoskeleton and secreting a new, larger exoskeleton.

Echinodermata - sea stars, sea urchins, sand dollars; literally ”spiny skin“; noted for the water vascular system.

endoskeleton - internal support skeleton found in the echinoderms

water vascular system - system of canals in echinoderms that contain fluid which is supplied to the tube feet for feeding and movement.

Chordata - phylum characterized by animals that have a notochord, nerve cord, pharyngeal gill slits, and a tail that extends beyond the anus in some point of its development.

notochord - long rod of stiffened tissue that helps support the body.

nerve cord - runs parallel to the notochord and develops into the brain and spinal cord.

pharyngeal gill slits - paired organs that are used for respiration, feeding, or both.

Urochordata - the sea quirts, the invertebrate chordates

chelicerae - specialized appendages in the form of claws in some arthropods.

compound eye - an eye made up of many small eyes, like those seen in the insects.

Malpighian tubules - excretory devices in arthropods

ganglia - bundles of nerve found along the ventral nerve chord in some arthropods.

mandibles - in arthropods they are a pair of specialized appendages that form part of the mouth and are used for crushing food.