

STUDENT REVIEW SHEET INVERT I

PHYLUM CNIDARIANS: please examine the demos

A) *Hydra*

1) external structures: polyp, medusa, ectoderm, tentacles, mouth, cnidocytes containing nematocysts, body, basal disk, buds, testis, ovary (some species are hermaphroditic or monoecious (one house for both sexes) while others are dioecious (two houses for both sexes)).

2) internal structures (longitudinal section): gastrovascular cavity, cnidocytes containing nematocysts, endoderm (gastrodermis), mesoglea, food vacuoles.

PHYLUM PLATYHELMINTHES: please examine the demos

A) *Dugesia*

1) external structures: ectoderm (ciliated epidermis), cephalization, pharynx, pharyngeal cavity, mouth, eye spots, feeding behavior.

2) internal structures: 3 germ layers, ectoderm, mesoderm & endoderm, cephalization (nerve cords), no coelom, digestive tract, digestive epithelium,

PHYLUM ANNELIDA: please examine the demos

A) *Lumbricus*

1) external structures: evidence of metamerism = segmentation, setae, mouth, anus, dorsal blood vessel, clitellum.

2) internal structures: true coelom, digestive tract = mouth, pharynx, esophagus, crop, gizzard, calciferous glands, intestine with chloragogen cells and a typhlosole (yellow cells surrounding the intestine, and an infolding of the intestine respectively both are visible in the cross section slides) anus; closed circulatory system = ring-like hearts, dorsal blood vessel, closed blood vessels-see ventral and dorsal blood vessel (in cross section slide); excretory system = nephridia, (nephrostome, optional); reproductive system = hermaphroditic (monoecious), male functioning--testis, seminal vesicles female functioning--ovaries, seminal receptacles (receive & store sperm from another individual); nervous system = supra-pharyngeal ganglia, ventral nerve cord with ganglia.

3) slides: note the body wall with cuticle, epidermis, circular and longitudinal muscles. Note the prominent digestive tract within the very large coelomic cavity. It consists of several structures, note in particular chloragogen cells and a typhlosole (yellow cells surrounding the intestine, and an infolding of the intestine respectively) and intestinal epithelium. Do you see peritoneum? Can you identify the ventral and dorsal blood vessels? Can you identify the ventral nerve cord?

PHYLUM MOLLUSCA: please examine the demos

A. Gastropods

1) external structures and feeding behavior

B. Freshwater clam

1) external structures/shell structures: hinge, valves, umbo and scars of adductors (posterior & anterior).

2) internal structures: mantle, ctenidia, anterior & posterior adductors, inhalant & exhalant siphon, foot, heart, anus

C. Squid, Loligo: Not dissected but you should be able to recognize these structures.

1) external structures: head, eyes, mouth, tentacles, mantle.

2) internal structures: pen (remnant of an internal shell).