THRIPP

SUPPLEMENTAL INSTRUCTION FOR SURVEY OF BIOLOGY by Richard X. Thripp

Week 14, Fall 2009, Dec 1 / 2 / 3. Animals Evolve ch. 17. daytonastate.org/biology

1.) What is the ONLY animal phyla that lacks true tissues? Porifera a.k.a. sponges

2.) Radial symmetry is like a pot, found in phyla cnidaria and echinodermata (as adult).

3.) Bilateral symmetry is a lobster, shovel, or a human face.

4.) Flatworms, roundworms, mollusks, annelida, arthropoda, and chordata are all animal phyla with bilateral symmetry. Flatworms have a 1-hole body plan; the others have 2.

5.) An animal must have 3 tissue layers to have a coelom (body cavitiy): the mostly external ecto derm, the middle meso derm, and the innermost digestive endo derm.

6.) "Pseudo" is the Greek prefix for fake, so a pseudocoelom is between the middle and innermost digestive layers (meso derm & endo derm). Platyhelminthes (flat worms) are pseudocoelomate.

7.) A true coelom is totally in the mesoderm. Animals with this are known as eucoelomate.

8.) Place these Animalae characteristics in order of evolution #1 through #4:

#1 Multicellularity #4 Body cavities #3 Bilaterial symmetry #2 True tissues

9.) Jellyfish (medusa) and sea anemone (polyp) are in phylum Cnidaria, which means they have radial symmetry, a 1-hole body plan, and only two tissues (and thus no coelom).

10.) Phylum Platyhelminthes are the simplest bilateral animals (blood flukes & tapeworms).

11.) The first phylum with a complete digestive tract (2 holes) is Nematoda (roundworms).

12.) Most seashells come from phylum Mollusca: soft-bodied animals protected by a hard shell.

13.) The three main classes of [Ans. 12] are gastropoda (single spiral shells), bivalvia (divided shell, i.e. clams), and cephalopoda which may or may not have a shell (octopuses).

14.) Segmented worms are phylum Annelida, including leeches and earthworms.

15.) Phylum Arthropoda, the most diverse animal phylum, is named for its jointed appendages (legs, pincers, fins, etc.). Have segments and appendages, covered by an exoskeleton.

16.) Insecta such as grasshoppers and mosquitoes are the most diverse group of arthropods.

17.) Phylum Echinodermata has a water vascular system for gas exchange and elimination. Includes sea stars, sand dollars, sea urchins. This phylum is closest to Chordata because both develop an anus before a mouth in the growing embryo, unlike Mollusks, Annelida, and Anthropoda.

18.) Phylum Chordata has 4 distinguishing characteristics: a hollow dorsal nerve chord (brain and spinal chord in humans), a noto chord (backbone in humans), pharyngeal slits (seen in developing human babies), and a post-anal tail (the coccyx a.k.a. tailbone in humans).

19.) Lancelets and tunicates are invertebrate chordates (no backbone).

20.) Mammals, birds, reptiles, amphibians, fish with cartilage (sharks), and bony fish are part of phylum chordata, subphylum vertebrate (backbone). (still at the DK ***P***COFGS level).

21.) You must know 7 classes (DKP ***C*** OFGS) under phylum Chordata, subphylum vertebrata.

22.) Class Agnatha, early vertebrates who lacked jaws such as lamprey.

23.) Class Chondricthyes, cartilaginous fish such as sharks, skates, and rays.

24.) Class Osteichthyes, bony fish with a bony operculum covering gills (trout, salmon).

25.) Class Amphibia: moist skin with many glands; land and water adaptations (frogs).

26.) Class Reptilia: scales to retain water, air-breathing, and amniotic eggs (leathery shells). Most are cold-blooded and lay eggs. Includes crocodiles, snakes, turtles, lizards, tuatara.

27.) Class Aves (think aviation, aviary = big bird cage), which have feathers. Birds are warm-blooded and lay eggs, but do not necessarily fly (ostriches and penguins). Pigeons, owls, robins, etc.

28.) Class Mammalia, which have hair and mammary glands to make milk to feed babies. Includes humans, monkeys, kangaroos, bats, cows, bears, whales, dogs, cats, zebras, etc.

29.) Amphibian s evolved from lobe-finned fishes to colonize land.

30.) Class Mammalia has 3 major groups: monotremes, the egg layers (5 species), and the mammals with placentas (~5395 species) divided into marsupials (pouched animals like kangaroos and koalas) and eutherians (more nurturing placentas, i.e. humans, rodents, and zebras).

31.) The "handy" man is Homo habilis, who made stone tools and had bigger brains than us.