Jonathan Quang 11/24/14  
Biology - Mrs.Prabhu

Lab #8 Summary Questions

3. Answer located on the diagram sheet.  
4.Setae are on the outside of the body because they are used to anchor the earthworm to the surrounding soil. If the setae were inside the body, they wouldn't serve much of a purpose. When each segment of a worm contracts and expands in a horizontal and radial manner, the setae either extend or retract to anchor that segment while other parts are unanchored. This is how an earthworm moves. In an emergency where a large amount of friction is required, such as trying to not get pulled out by a bird, the worm may extend all of its setae to stop itself from moving.  
5. One part of the external anatomy that was interesting was the prostomium. It was interesting because the prostomium is a fleshy extension used as a flap to cover the mouth. Flaps to cover orifices are not exactly common in animals. For most common animals a person can think of right off the bat, the closest to covering an orifice is just closing the orifice.  
6.The internal anatomy of the is fairly linear. At the front is the brain. Behind it are the aortic vessels encircling the esophagus. Some dorsal vessels can be seen behind it. To the sides of the worm, there are the seminal vesicles. Returning back to the "main tube," there is the crop followed by the gizzard and intestines. A coelom can be identified. This structure can be identified as the empty space between the skin of the worm and the "inner skin" because the coelom is just a body cavity. The closest to identifying the coelom as anything but empty space would be the inside skin.  
7. Within the crop, gizzard, and intestine, this black material was found. This most likely would have been dirt. The muscle around the crop is thinner than the gizzard. The crop is an organ that just stores food. It has no need for thick muscles as all the crop needs to do is occasionally push food further into the digestive system. The gizzard has a need for thicker muscles because its purpose is to grind food.  
8. Earthworms demonstrate cephalization because they do have simple brains that control the rest of the body located at the anterior end. The parts that serve as the brain of an earthworm is this mass of nerve cells called the ganglion. The brain is then connected to two large ganglia below the digestive system. This makes up the nerve collar. From here, the ventral nerve cord carries the rest of the nervous system's information around the segments of the worm.  
9. The nephridia are located on either side of a segment. The nephridia appear to be small pores on the skin of the earthworm. If an earthworm has an anus for the elimination of waste, each segment has two nephridia because the anus really expels the waste from food the earthworm eats. The nephridia more or less filter out dead cells and other wastes from the blood. Having nephridia at each segments allows the waste to leave the body much quicker than through a small opening.  
10. The reproductive organs observed are the oviduct, sperm duct, sperm groove, and the clitellum. The oviduct and the sperm groove look like bumps on the side of the worm. The sperm groove is this vessel like tube underneath the skin that goes up until the clitellum. The clitellum of the worm is shaped like a tube that has been slipped around the worm. The oviduct and the sperm duct occur before the clitellum. The positions of these organs accomplishes sexual reproduction. When earthworms reproduce, they approach each other from opposite directions. The clitellum begins secreting a tube filled with nutrient rich protein. As the earthworms slide past each other, they deposit sperm in each other's receptacles. The secreted tube then slides over the egg sac, which is then fertilized by the sperm. The position of the sexual structures allows the sliding action of the tube to actually pick up the components of sexual reproduction. The tube eventually slides off and becomes a cocoon.