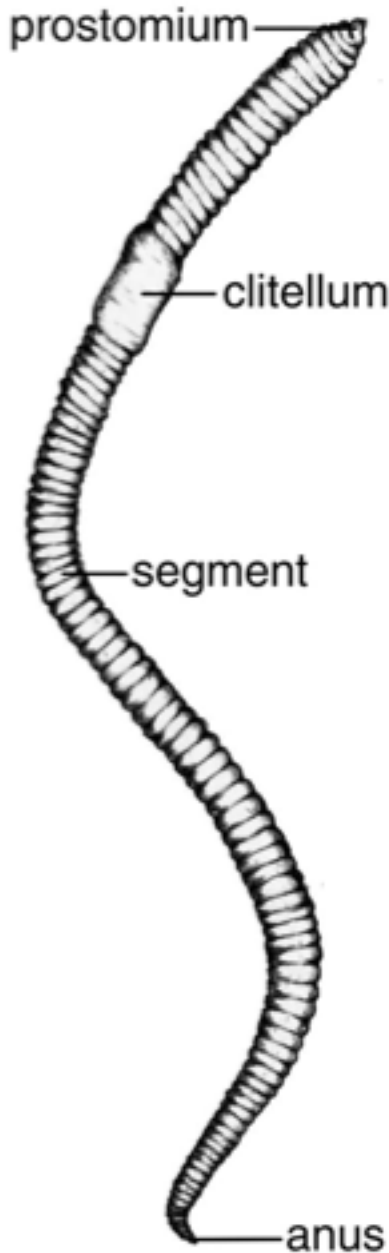


EARTHWORM ANATOMY - EXTERNAL FEATURES



Earthworms are invertebrates. That is, they do not have a backbone. Insects, sea stars, spiders, jellyfish, and millipedes are other examples of invertebrate animals.



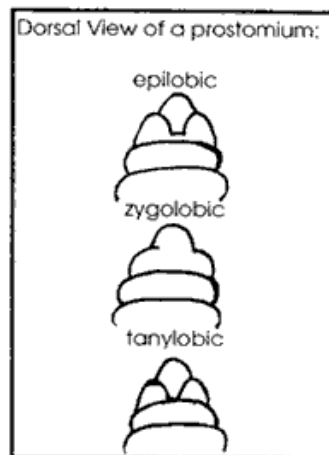
SEGMENTS

Study the illustration of an earthworm shown on the left. You will notice that earthworms have long, cylindrical body that is divided into similar segments. The grooves that extend around the body of the worm show the arrangement of the segments.

Some species of earthworms have a body composed of over 100 segments. How many segments does your earthworm have?

SYMMETRY

Earthworms have bilateral symmetry. This means that if you cut the earthworm down the centerline, the left side of the body would be identical to the right side.



PROSTOMIUM

Some species of earthworms have a tongue-like lobe above the mouth called prostomium. The prostomium is actually a sensory device. Earthworms do not have a nose, eyes, ears, or hands to gather sensory information about their environment. Instead, they depend on their prostomium and sensory receptors in their skin to "feel" their way through the soil.

PERISTOMIUM

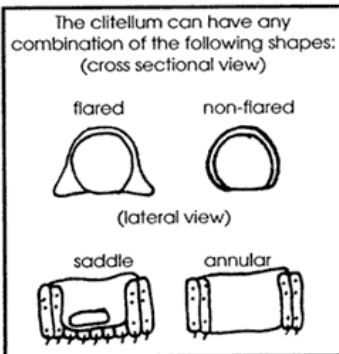
The first body segment is called the peristomium. The peristomium contains the mouth.



CLITELLUM



Adult (sexually mature) earthworms have a distinct swelling called a clitellum. It is located about one-third of the way down the earthworm. The clitellum is often white or orange in colour. It produces most of the material secreted to form earthworm cocoons. The clitellum forms a band that can be flared, non-flared, saddle-shaped, or annular. It is generally found between segments 26 and 33.



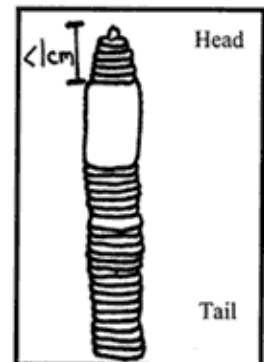
The clitellum is only found on adult worms. Young or juvenile worms do not have a clitellum. The clitellum of each species of earthworm has a distinct colour, size, and shape. Another key structure found on the clitellum is the tubercula pubertatis.

The diagram shows the shape and structure of the clitellum. They may have any combination of shapes.

ANTERIOR

Locate the clitellum of a mature earthworm. The shorter region to one side of the clitellum is the anterior or head-end of the animal. This end of the worm is usually more pointed than the posterior end of the animal.

The prostomium is the first segment at the anterior end of the animal.



POSTERIOR

Locate the clitellum of a mature earthworm. The longer region is the posterior or tail end of the earthworm.

DORSAL

The top-side of an animal is called the dorsal surface. For example, the fin you see in all shark movies shows the dorsal fin of a shark just before it attacks. The dorsal surface of some species of earthworms is darker than its ventral surface.

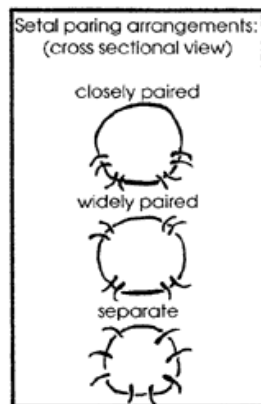
VENTRAL

The bottom-side of an animal is called the ventral surface. In many animals, the ventral surface is a lighter colour or shade than the dorsal surface.

PERIPROCT

The periproct is the last segment of an earthworm.

SETAE



Each segment, except the first and last, have tiny bristle-like structures called setae. These structures help the earthworm to move and act to sense the environment.

The number and arrangement of setae are important clues to the identification of earthworms.]

EPIDERMIS

The epidermis is the name for the skin of an earthworm. It is the outer layer of worm and it secretes a mucous.