

Earthworms



Earthworm with clitellum (arrow), Photo by Aruna at Wikipedia.

Earthworms are terrestrial annelid worms found living in the soil. Most are hermaphrodites, having both male and female sexual organs, and many species are parthenogenic, that is they produce eggs without mating. Earthworms breathe through their skin and their gut runs the entire length of the body. The clitellum (see above) is part of the reproductive system of the worm located near the head, and it also secretes a fluid that encapsulates the eggs. These worms feed on organic matter in the soil, basically eating their way through the soil, often leaving behind piles of pellets on the surface.

Earthworms are considered by many to be essential to the development and maintenance of healthy soils. Ironically, nearly all of the earthworms we see in our gardens and agricultural lands are introduced from either Europe or Asia. Nine species are found in California associated with humans. With the exception of the crazy worm and *Microscolex dubius*, which is from South America, all of the rest of the commonly encountered earthworms originate from the Palearctic.

One of the most distinctive species is the **crazy worm** (*Amyntas diffringens*). This species squirms violently when disturbed or handled. It is commonest in permanent beds with abundant leaf litter in lower elevations. It is native to southern Asia.

The **green worm** (*Allolobophora chlorotica*) is found in poorly drained clay soils, particularly in polluted sites. Unlike the

crazy worm the green worm slowly rolls into a spiral when handled. It tends to be green, yellow, pink or gray in color.

Nightcrawlers (*Lumbricus terrestris*) are the largest earthworms in California, some reaching nearly a foot in length. These large earthworms are dark colored with a pale, flattened posterior. They are common in irrigated orchards, where they can form burrows up to 8 ft deep, with turrets of mud and debris.

The **manure worm** (*Eisenia fetida*) is the species most commonly used for composting kitchen waste and manure as well as for fish bait. It is one of the smaller earthworms, only reaching 5 or 6 inches in length.

The **red wriggler** (*Lumbricus rubellus*) has an iridescent reddish upper surface and unpigmented bottom. They spend their lives underground, burrowing in mineral soils, and are common in apple orchards with permanent cover crops.

Two other worms commonly found in orchards are the **Canadian worm** (*Aporrectodea tuberculata*) and **southern worm** (*Aporrectodea trapezoides*). The Canadian worm is unpigmented and builds extensive lateral burrows in the soil. The southern worm is slate gray to pink and both burrows in the soil and forages on the surface. They are commonly found in frequently flooded soil.

Finally, *Microscolex dubius*, which is found in clay and sandy soils, particularly in almond orchards, where they seem to be closely associated with nightcrawlers.



Earthworm pellet pile. Photo courtesy of Muhammad Mahdi Karim, Wikipedia.