

General characteristics of Phylum: Annelida (ring worms):

1. Mostly live freelifing in (fresh; marine) water, soil and some are ectoparasites.
2. Ring-worms are metamerically segmented, Triploblastic coelomate animals and bilaterally symmetrical. their body is covered with a thin moist cuticle and the body wall with outer circular and inner longitudinal muscle layers.
3. Digestive is complete (**mouth, pharynx, oesophagus, crop, gizzard, intestine and anus**).
4. Respiratory gas exchange through **skin, gills, or parapodia**.
5. **Circulatory system closed**; respiratory pigments (hemoglobin, hemerythrin, or chlorocruorin) often present; amebocytes in blood plasma
6. Excretory system typically a **pair of nephridia for each segment**
7. Nervous system is consisted of a pair of ganglia (brain), a pair of nerve cord and a pair of ganglia in each segment.
8. Reproduction is either **sexual** by copulation or **Asexual** reproduction by fission and fragmentation, regeneration, budding in some. Hermaphroditic or separate sexes; Male reproductive system is of two pairs of testes and Female reproductive system is consisted of a pair of ovaries.
9. **Lifecycle is either as follow.**
 - A. Indirect growth: **Egg** → Trochophore larva → **Adult**.
 - B. Direct growth: **Egg** → Small worm like parents → **Adult**.

Phylum: Annelida is divided into THREE Classes, are as follow:

1. **Class: Polychaeta** (have many setae):, example; *Nereis virens*
2. **Class: Oligochaeta** (have few setae), example; *Lumbricus terrestris*
3. **Class: Hirudinea**, example; *Hirudo medicinalis*

Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Annelida

1. **Class: Polychaeta**

Order: Phyllodocida

Family: Nereidae

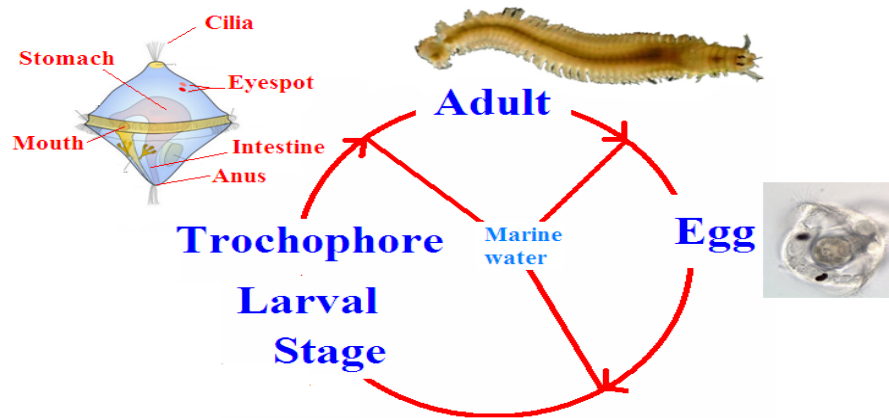
Nereis virens (Clam or sand worm)

Characteristics:

1. The body is flattened dorsoventrally and may reach a length of over (30) cm.
2. The head is distinct. Above the mouth is the **prostomium** which bears a pair of terminal tentacles, two pairs of simple eyes and two pulps.
3. The first true segment is the **peristomium**; from each side of this arise four tentacles.

4. Behind the head are segments each bearing a fleshy out growth on either side, **parapodia**, these are used as locomotors organs and have setae (chaetae). clitellum absent
5. Reproduction is sexual. Sexes are separated; fertilization happens externally in water.
6. Lifecycle includes indirect growth. Trochophore larva is found.

Egg → Trochophore larva → Adult.



Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Annelida

2. **Class: Oligochaeta**

Order: Haplotaxida

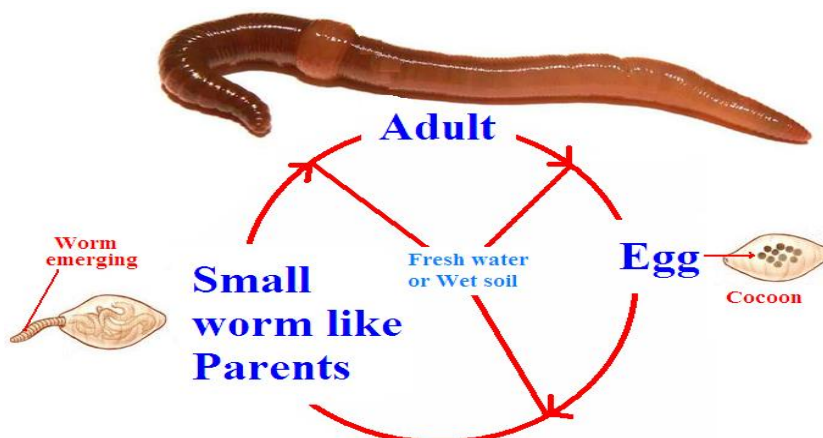
Family: Lumbricidae

Lumbricus terrestris (**Earth worm**)

Characteristics:

1. Body is cylindrical with 100 segments, The segments 31 or 32-37 are swollen in mature worm forming a saddle-shaped enlargement (clitellum), of use during reproduction, few setae on body, but no parapodia.
2. Head is not distinct and does not bear appendages, no parapodia
3. Respiratory is via body surface.
4. Reproduction is sexual or asexual. They are hermaphroditic worms. **Sexually**, they reproduce by Copulation. Eggs are fertilized and laid in cocoon. **Asexually**, they reproduce by regeneration, no larva.
5. Lifecycle includes direct growth. Trochophore larva is not found in the lifecycle.

Egg → Small worm like parents → Adult.



Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Annelida

3. Class: Hirudinea

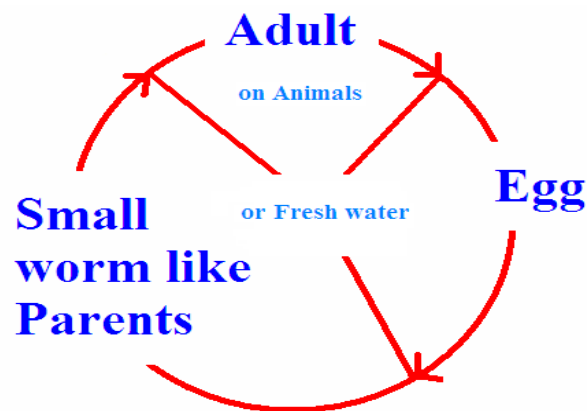
Order: Hirudinida

Family: Hirudinidae

Hirudo medicinalis (**medical leech**)

1. They are ectoparasites live on animals, like, sheep, fish, Man etc. They feed on blood.
2. Dorsoventrally flattened (4) inches in long with 32 body segments, small coelom, but setae, and parapodia are not found, two suckers; an oral sucker and a posterior sucker.
3. Respiratory is via body surface. oral and posterior suckers usually present; clitellum present;
4. They are hermaphroditic worms; they reproduce by Copulation in which cross-fertilization takes place. Eggs are fertilized and laid in cocoon.
5. Lifecycle includes direct growth. Trochophore larva is not found in the lifecycle.

Egg → Small worm like parents → Adult.



Lifecycle of Hirudinea (Leeches)