

### Classification of kingdom Animalia:

Phylum	Examples
Platyhelminthes (flatworms)	Planarians, flukes, tapeworms
Nematoda (roundworms)	Pinworms, hook worms

### Phylum Platyhelminthes- Flatworms

Flatworms have three germ layers. The presence of mesoderm in addition to ectoderm and endoderm gives bulk to the animal and leads to greater complexity. Free-living flatworms have muscles and excretory, reproductive, and digestive organs. Parasitic flatworms lack respiratory and circulatory organs, because the body is flat and thin, diffusion alone is adequate for the passage of oxygen and other substances from cell to cell.

#### A- Free-living flatworms - Planarians

- 1- Planarians live in fresh water and have an excretory organ that serves primarily to rid the body of excess water.
- 2- The beating of cilia in the *flame cells* keeps the water moving toward the excretory pores.
- 3- The digestive tract is incomplete because it has only one opening.
- 4- Planarians are **hermaphrodites**; they possess both male and female sex organs.

#### B- Parasitic Flatworms Flukes and Tapeworms

Flukes and tapeworms are two classes of parasitic flatworms. The anterior end of these animals carries suckers and sometimes hooks for attachment to the host. The parasite absorbs nutrients from the digestive tract of the host, and in tapeworms the digestive system is essentially absent. The tegument, a specialized body wall resistant to host digestive juices.

The extensive development of the reproductive system, with the production of millions of eggs, may be associated with difficulties in dispersing offspring.

Both parasites utilize a secondary host to transport an intermediate stage. The primary host is infected with the sexually mature adult; the secondary host contains the larval stage or stages. Both flukes and tapeworms cause serious illnesses in humans.

## Phylum Nematoda- Roundworms

Are non-segmented they have a smooth outside body wall. These worms, which are generally colorless and less than 5 cm in length, occur almost anywhere in the sea, in fresh water, and in the soil.

Roundworms possess two anatomical features not seen before:

1- A tube within a tube body plan: the digestive tract is complete; there is both a mouth and an anus.

2- The body cavity is a pseudocoelom, or a body cavity incompletely. The fluid-filled pseudocoelom provides space for the development of organs.

### **Ascaris**

In the roundworm *Ascaris lumbricoides*, females tend to be larger than males. Both sexes move by means of a characteristic whip-like motion because only longitudinal muscles and no circular muscles lie next to the body wall.

