

## Structure and Affinities of Peripatus:

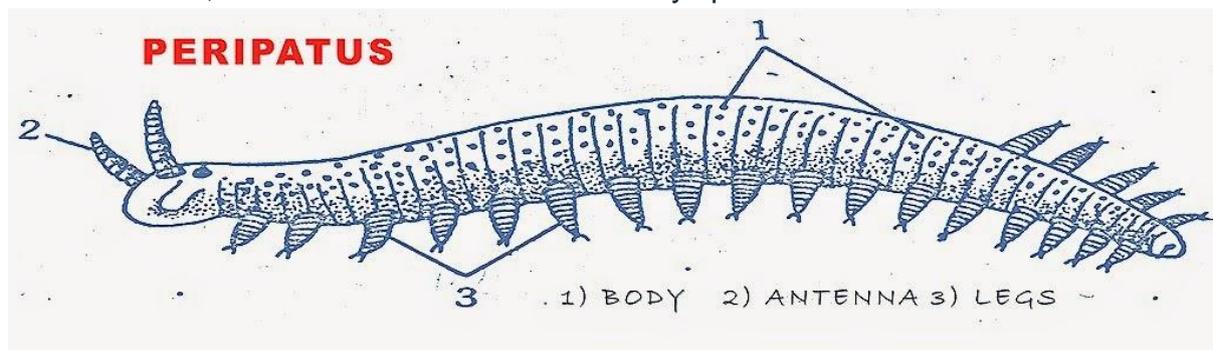
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Peripatus is a soft bodied worm like, bilaterally symmetrical animal. It shows tracheal mode of respiration. It is grouped in Phylum Arthropoda and Class Onychophora. This class is the smallest and it includes only one genus, and seventy species. Class Onychophora includes primitive worm like, Arthropods. It is a connecting link between annelids and arthropods.

Peripatus is seen in neotropical regions like West Indies, America, Congo, Australia, Tasmania, New-Zealand, Malaya etc. It exhibits Peripatus is terrestrial animal. It lives under stones; bark of trees and in shady places. It is nocturnal in habit.



During day time it remains in the dark place and in night time it comes out in search of food. It feeds on small insects, worms and termites.

### External Structure

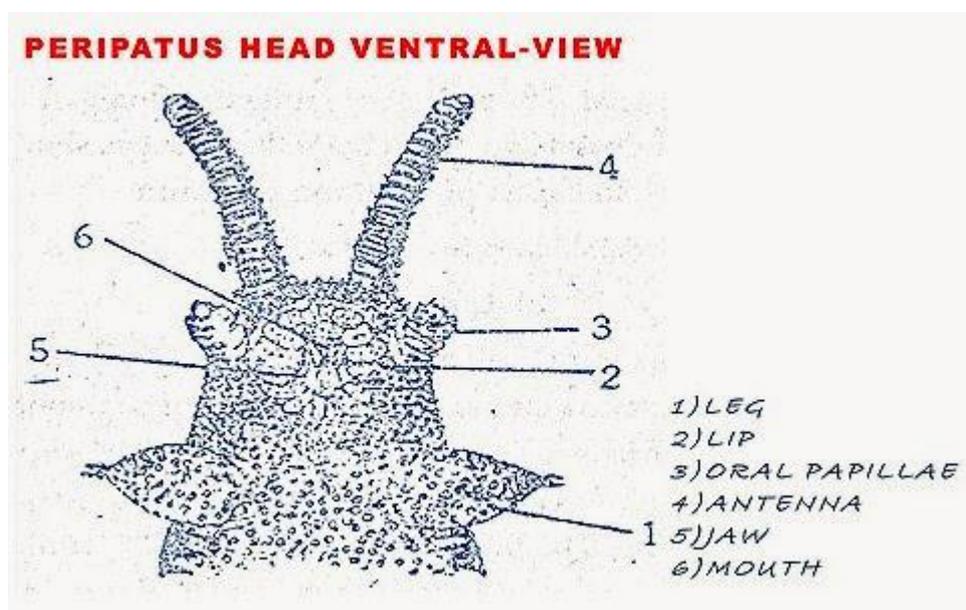
It is a soft bodied, worm like animal. It grows up to 1 to 2" in length. The soft body shows deep black colour on the dorsal side and light red colour on the ventral side.

The integument exhibits large number of wrinkles or ring like constructions which are superficial. The skin is soft and bears many minute papillae and bristles along the mid-dorsal line of the body. It produces slimy secretion which is protective and helps in capturing the food organisms.

The body is divisible into two parts.

## 1) Head. 2) Long trunk.

**1. Head:** Head is composed of three segments. They are fused. It has a pair of antennae. Each antenna shows a large number of segments. On the ventral side of the head mouth is seen. The mouth is surrounded by a lip which has ridges. A pair of jaws with teeth surrounds the mouth. A tongue is also seen in the mouth. A pair of oral papillae will be present. Each oral papilla contains the openings of slime glands. On the dorsal side of the head a pair of simple eyes will be seen.



**2. Trunk:** It contains 14-42 segments arranged serially. All the segments are alike. Each segment shows a pair of appendages. The anus is terminal and it is present at the posterior end of the body. On the ventral side below the anus the genital pore is present.

**Appendages :** Each segment contains a pair of appendages. Each appendage shows 2 parts. 1) A conical proximal leg. 2) A short distal foot with a pair of horny claws.

The leg shows 2 spiniferous pads at its distal end. The leg bears rings of papillae with bristles. The foot is attached to the distal end of the leg. All the appendages are hollow.

### Affinities Of Peripatus

Peripatus is a unique organism. It forms a connecting link between Annelids and Arthropods. It exhibits several important Annelida

characters and some Arthropodan characters. In addition to these, peripatus exhibits some peculiar characters not shown by either Annelids or Arthropods.

### **Annelidan Characters:**

- 1) Presence of worm like body with bilateral symmetry.
- 2) Presence of thin flexible cuticle.
- 3) Absence of distinct head region.
- 4) Presence of dermomuscular body wall with circular and longitudinal muscles.
- 5) Presence of a pair of simple eyes on the dorsal side of head.
- 6) Presence of hollow stumpy appendages in the trunk segments.
- 7) Presence of muscular pharynx.
- 8) Presence of short stomodaeum and proctodaeum regions of alimentary canal.
- 9) Presence of salivary glands which are modified Nephridia.
- 10) Presence of paired Nephridia in every segment.
- 11) Presence of segmentally-arranged coxal glands which are homologous with settiparous glands of chaetopods.
- 12) Presence of cilia in the reproductive ducts.

### **Arthropodan Characters:**

- 1) Presence of a chitinous cuticle.
- 2) Presence of jointed appendages arranged one pair in each segment.
- 3) Presence of jaws in the mouth which are modified appendages.
- 4) Presence of haemocoel.
- 5) Presence of colourless blood.
- 6) Presence of long, tubular and dorsal heart enclosed by pericardium.

7) Presence of tracheal system with stigmata. 8) Presence of tubular gonads around the gut.

**Primitive characters of Peripatus :**

- 1) Presence of superficial segmentation of the body.
- 2) Presence of one pair of jaws in the mouth cavity.
- 3) Presence of trachea which open out with diffused stigmata.
- 4) Presence of a ladder like nervous system.
- 5) Presence of velvety skin.
- 6) Genital organs are arranged in a manner which is not seen in any other animals.

In 1930 Onychophora fossils "Aysheaia" were discovered in Cambrian period stones. Hence we can conclude the Onychophora included many genera along with Peripatus. We can consider this as a very primitive group and kept in separate phylum

**Reference:**

1. Invertebrate Zoology-E.L. Jordan
2. Invertebrates-R.L.Kotpal.
3. Biology of Animal-Ganguly,Sinha and Adhikari.