

General characters of Echinodermata.

Gr. Echinus = spines, dermatos = skin.

Due to the presence of spines on the body surface, of these animals the phylum is known as Echinodermata.

- These animals have true Coelom, which during early development shows Biradial Symmetry, but towards the end of development becomes radially symmetrical.
- This phylum includes a large number of extinct animals together with about 5,000 living species.
- Exclusively Marine and are among the most common & widely distributed of Marine animals.
- Organ - System grade of body Organization.
- It occurs in all seas from the intertidal zone to the great depths.
- Triploblastic, Coelomate, & radially symmetrical, with distinct oral & aboral surface & without definite head and segmentation.
- They are of moderate to considerable sizes, but none are Microscopic.
- Its shape as Star like, spherical, Ascoidal, or elongated in shape.
- Surface of the body is rarely smooth, typically it is covered by five symmetrical spaced radiating grooves called Ambulacra, with five alternating inter-radic or inter-ambulacra.
- Body wall consists of an outer Epidermis, Middle dermis & inner lining of Peritoneum.
- Coelom is spacious, lined by Peritoneum, occupied mainly by digestive & Reproductive System & develops from embryonic mesenteron.
means Enterocoel.

Presence of W.V.S. (Water vascular system or Ambulacral system) is the most characteristic features.

It consists of Tubes filled with water.

- Alimentary canal is mostly coiled.
- Circulatory or Haemal or Blood lacunae system is typically absent.
- Respiratory organs include dermal branchiae, Tube feet, Respiratory tree & Bursae.
- Excretory system is wanting.
- Nervous system less developed. Means without a Brain & with circumoesophageal ring & radial nerves.
- Poorly developed sense organs - include, tactile organ, Chemoreceptors & Statocysts.
- Usually Dioecious, sexes are separate, with few exceptions. Gonads large & single or multiple with or without single ducts.
- Sexual reproduction takes place. few reproduce Asexually or by Regeneration.
- Fertilization is External, while few sps. are viviparous.
- Development - indirect / indeterminate, through free swimming larvae - which undergo metamorphosis into the Radial Symmetrical.
- Regeneration of lost parts a peculiarity.

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