

ECHINODERMATA (LARVAL FORMS)

Echinoderm larva is strikingly bilaterally symmetrical in marked contrast to radially symmetrical adult. It swims about by means of a ciliated band, which may be complicated by a number of short or long slender projection or arms from the body wall. Based upon the nature and position of the arms or their absence, larvae of different classes of Echinodermata may be distinguished. After a free-swimming planktonic existence, the bilateral larva undergoes a metamorphosis, in which the radial symmetry of the adult is developed. In different classes of echinoderms, different types of larvae complete the development.

Class - 1. Asteroidea

Bipinnaria Larva:- Two types of development occurs in astroids. The different type has large, yolkky eggs and no free swimming larval stage. The indirect type has homolecithal eggs with little yolk and a free swimming larval stage. After hatching the larva develops cilia

and begins a free-swimming life. The larva feeds on diatoms as an alimentary canal is formed. The presence of powerful ciliary band on the stomodaeal walls helps in feeding. Two lateral longitudinal locomotory ciliated bands develop which connect in front of mouth, forming a preoral loop and in front of the anus, to form a postoral loop, preoral loop later, separates or in some cases develops independently, into an anterior ciliated ring around the body. Three lateral lobes or projections are also developed on each side of the body bordered by ciliary bands. This larva is

known as bipinnaria and develops in 2 to 7 days.

Brachiolaria Larva: - Bipinnaria transforms into brachiolaria larva which develops three short arms at preoral lobe, known as brachiolary arms (one median and two lateral arms).

They contain coelomic extensions and adhesive cells at their tips. An adhesive glandular area at their base acts as a sucker. Appearance of the sucker marks the beginning of metamorphosis.

Class II Ophiuroidea :- Ophioputeus Lörre

Puteus is the free swimming larva in brittle stars which is known as ophioputeus. It is similar to echinoputeus of echinoderms with the only difference that the larva has fewer arms than the later. The posterolateral arms the longest and directed forward. After gastrulation the arms develop gradually. Posterolateral arms are formed first. After 4, 10 and 18 days, anterolateral, postoral and posterodorsal arms develop, respectively. Ciliated bands accompany the arms edges. Internally the larva contains coelomic chambers and archenteron. Internal development proceeds in the same way as in other classes;

while free swimming metamorphosis of the larva starts, there being no attachment stage.