

Type Study: Balanoglossus

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Balanoglossus belongs to class Enterozoa which have a straight digestive tube with mouth and anus at opposite ends. They have numerous gill clefts but have no anus. They are burrowing animals ranging in size from about 2 cm to 50 cm. It has about 20 species.

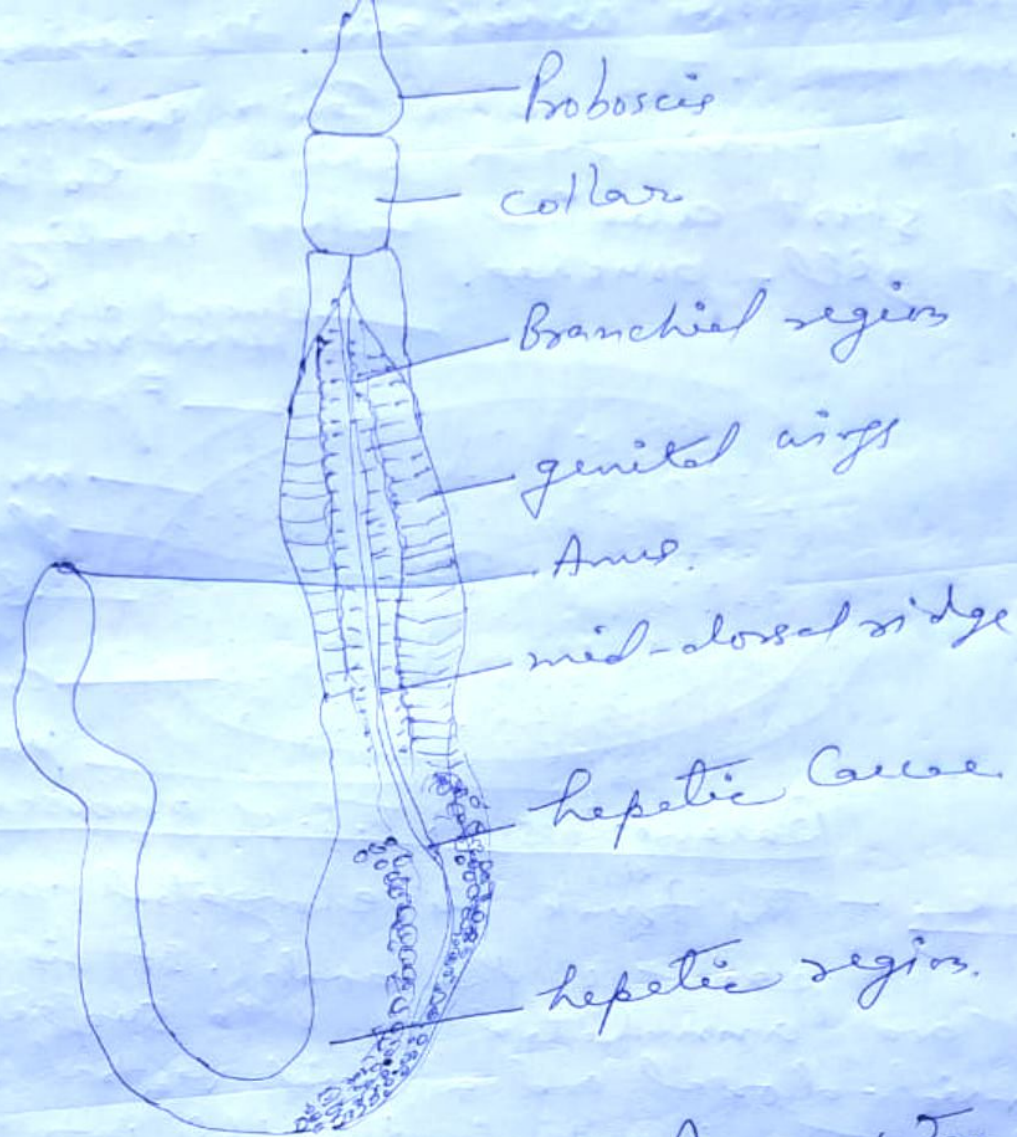
Habit & Habitat → Balanoglossus is a marine animal. It is found in shallow waters between tide marks along the coast of warm and temperate oceans. Balanoglossus is world-wide in distribution. It is tubicolous, living in V-shaped burrows excavated in the sandy bottom. The walls of the tube are lined with mucus secreted by the mucus gland of the animal. The burrows are open at both ends and epical coils of faeces are present at the posterior opening. The animal moves in the burrow with the help of parapodia present all over the body. External structure → The body of Balanoglossus is

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soft, elongated, cylindrical, being richly ciliated all over and covered with mucus. The length of animal varies from 2 cm to 2.5 meters. Most forms are drab coloured though reddish tints are present. Several species are luminescent due to mucus. They have an offensive odour. The body is bilaterally symmetrical and divided into three regions, viz. Protosome, collar or Mesosome, and trunk or metasome.

Proboscis - The proboscis forms the anterior part of the body and is either rounded or conical in shape. It is continued posteriorly into a short, narrow neck or proboscis stalk. The proboscis is hollow and has thick muscular walls. Its cavity opens to the outside by means of a small opening called the proboscis-pore. In certain cases, there are two proboscis pores. The proboscis sits in the collar somewhat like an acorn in its cup, a character that has given the name "acorn worms" to the group. The mouth, which is always wide open and incapable of closing completely, lies on the ventral side and its lips are the ventral edges of the collar region.

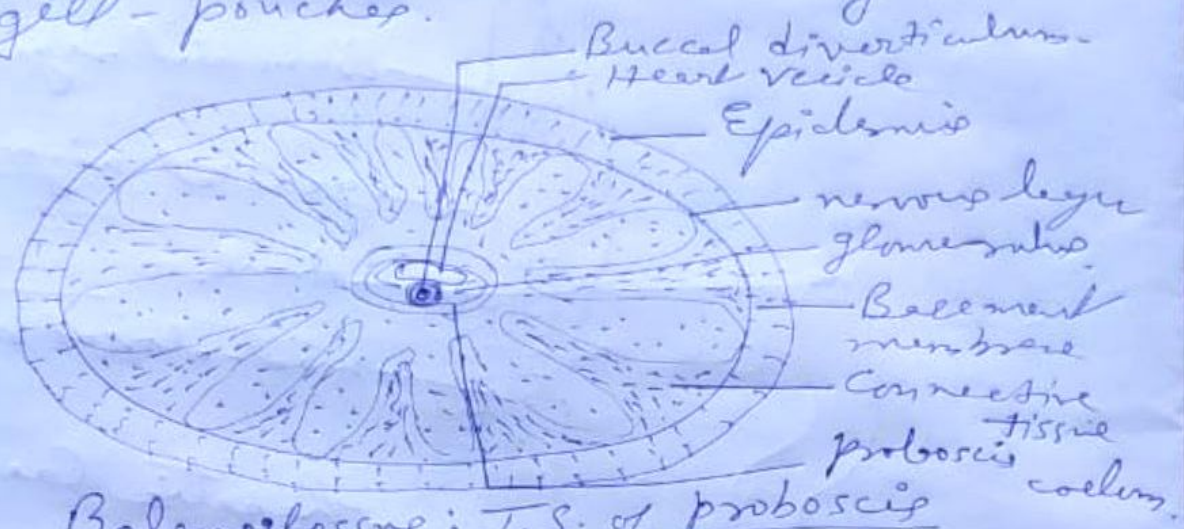
Collar: - The collar lies posterior to the proboscis and anterior to the trunk. It is a short cylinder usually cylindrical, mostly shorter than the



Belanoglossus or Acros - Worm - External Fistulae

proboscis. The funnel like anterior part of collar, the collarette, embraces the proboscis stalk and usually also the posterior part of the proboscis. Posteriorly, the collar is sharply demarcated from the trunk by a circular indentation. The collar is also muscular and possesses two coelomic cavities. The right and left coelomic cavities are separated from one another by dorsal and ventral mesenteries. The coelomic cavities of the collar are completely cut off from the proboscis cavity. The collar cavity as well as the proboscis cavity are crossed by numerous strands of

Connective tissue which give the region a spongy appearance. The Collar Cavity Communicated with the exterior by a pair of Collar-pores and short ciliated tubes leading into first gill-pouches.



Balanoglossus: T.S. of proboscis

Trunk - The trunk is elongated posterior part of the body. It is somewhat flat and annulated on the surface. It has a mid-dorsal and a mid-ventral longitudinal ridge. The trunk is divisible into three parts - an anterior branchiogenital region, a middle hepatic region and a posterior post-hepatic region. On the dorsal surface of branchio-genital region of the trunk is a double row of small pores - the branchial apertures. Each row is situated in a long furrow. These pores increase in number during growth. In some species the most anterior are overlapped by a posterior prolongation of the collar called the operculum. A pair of longitudinal genital ridges or genital wings extend throughout a considerable part of the body behind and is the region of branchial apertures. In some genera, genital ridges are so prominent that they form a prominent wing-like folds called genital wings. (contd in part 1)