doubt partly due to a confusion with “ scant," stinted, of short measure; this is for *scamt,* cf. “skimpy,” “scamp” (q.v.), and is related to O.N. *skammr,* short, brief.

SCAPHOPODA, the third of the five classes into which the Phylum Mollusca is divided.@@1 The Scaphopoda are marine Molluscs with the body, especially the foot, adapted to a burrowing life in sand. The structure is bilaterally symmetrical, the body and shell elongated along the antero-posterior axis and nearly cylindrical. The right and left margins of the mantle are united ventrally, leaving an anterior and posterior aperture to the mantle cavity. The shell has therefore the form of a tube open at both ends. The head is somewhat rudimentary and without eyes, but bears two dorsal appendages produced into numerous long filaments. Buccal mass and radular apparatus are present, but ctenidia are entirely wanting. The foot is cylindrical. At first supposed to be tubicolous Annelids, *Dentalium* and its allies were afterwards placed among the Gastropoda, to which recent authorities consider them to be closely related. In 1857 Lacaze-Duthiers raised them to the rank of a division equal to Lamellibranchia. This view is now generally adopted. The shell is narrower at the posterior end and is slightly curved to the dorsal side. Both the vernacular name, “ tooth shell,’’ and the Latin name, *Dentalium,* refer to the resemblance of the shell to a long tooth.

The animal grows at the anterior end, and therefore the shell at the posterior end is older and thicker. The edge of the mantle at the anterior aperture is very thick and muscular; at the posterior aperture also there is a circular muscle, and here the edge is interrupted by a ventral sinus and is provided internally with a dorsal and ventral valve which can be applied to each other so as to close the aperture. The living animal buries itself in the sand with only the posterior extremity projecting into the

water, so that the posterior aperture of the mantle cavity is both inhalant and exhalant.

The head is situated on the dorsal side of the body anteriorly within the anterior aperture of the mantle, from which it cannot be protruded. It is a small somewhat cylindrical projection with the mouth at its anterior end. In the Dentaliidae the mouth is surrounded by eight small lobes, but these are absent in the

Siphonopodiidae. **At the** base of the head dorsally are a pair of flat tentacular lobes from the edges of which the cephalic filaments or captacula arise. These captacula are of unequal length, highly contractile and extensile, easily thrown off and regenerated. They are ciliated, and their extremities are enlarged and have a small lateral depression in each. The captacula are tactile and prehensile and can be protruded from the anterior aperture of the mantle. The foot is elongated and cylindrical, and can be protruded from the anterior aperture to serve as a burrowing organ. In Dentaliidae it is pointed at the end and has an oblique projecting fold on either side behind the extremity. In Siphonopodiidae it ends in a disk with papillated margins, and in Pulsellum there is a filament in the centre of the disk. Two retractor muscles pass back from the base of the foot to the dorsal side of the shell.

*Internal Anatomy*.—The cavity within the head leads into a true buccal cavity situated within the body at the base of the foot. This buccal sac is provided with a dorsal mandible and a ventral radula. The latter is short and carries five teeth in each transverse row. The intestine is short and forms several loops all situated close behind the foot. The stomach is small ; into it open a small pyloric caecum and the ducts of the liver, paired in Dentaliidae, one on the left only in *Siphonodentalium.* The anus opens just behind the base of the foot. The liver is placed entirely behind the intestine in the middle of the body, and behind it the rest of the body is occupied by the unpaired gonad. The vascular system is very rudimentary. Heart and blood-vessels are entirely absent ; the blood is contained in sinuses which have no distinct walls or endothelial lining, and the principal of which are the perianal, the pedal, the visceral and the pallial. It is remarkable that in Scaphopoda only among Mollusca the blood-spaces are in communication with the external medium: a pair of apertures near the renal openings lead from the perianal sinus to the exterior and allow the bl∞d to escape during violent contractions of the body. There are no special respiratory organs, their function is carried on by the internal surface of the mantle.

The renal organs are a pair of short wide sacs with folded walls lying on either side of the anterior end of the liver. They open to the exterior on either side of the anus. The pericardium being absent, there are no reno-pericardial apertures.

The nervous system resembles that of Gastropoda and Lamelli- branchia. A pair of cerebral ganglia lie on the dorsal side of the oesophagus: they innervate the proboscis or head and its tentacular lobes and captacula. Close to each cerebral ganglion is a pleural ganglion, and each is connected by a long nerve with the pedal ganglion of the same side, the two connectives of either side being united in the distal part of their course. The pedal ganglia are situated in the middle of the foot. The pleural ganglia are also united by a long visceral commissure as in Lamellibranchs, and this commissure bears two ganglia lying close beneath the epidermis in front of the anus. There is also a stomatogastric system arising from the cerebral ganglia.

Eyes are absent; attached to the pedal ganglia are a pair of otocysts. They are innervated from the cerebral ganglia. The buccal cavity contains a sense-organ on the ventral side called the sub-radular organ. It consists of ciliated epithelium, beneath which are two ganglia connected with the labial commissure by nerves. The only other sense-organs are the captacula, which are tactile and olfactory. Each contains a terminal ganglion connected with sensory cells in the lateral pit.

The sexes are separate. The gonad, whose position has already been mentioned, is divided into transverse lobes; its duct is anterior and single, and diverges to the right to open into the right kidney as in primitive Gastropods and Lamellibranchs.

*Development.*—The ova are laid separately and develop in the sea-

@@@1 For a discussion of its relationship to the other classes of the Phylum see Mollusca.