known as “ ship-worms,” and are notorious for the destruction which they cause in ships’ timbers, the woodwork of harbours, and piles or other wood immersed for a long period in the sea. They inhabit long cylindrical holes, which they excavate in the wood, and usually occur in great numbers, crowded together so that often only a very thin film remains between the adjacent burrows. Each burrow is lined with a layer of calcareous substance secreted by the mollusc; this lining is not usually complete, but stops short a little distance from the inner end of the burrow, where the boring process continues to take place. In some burrows, however, the lining is complete, either because the animal has reached its full size or because some cause pre­vents it continuing its tunnel; in such cases the calcareous tube has a hemispherical termination. The burrows are usually driven in the direction of the grain of the wood, but not in­variably so. When a knot or nail or the tube of a neighbour is reached, the course of the burrow is altered so as to bend round the obstruction. One burrow is never found to break into another.

The adult *Teredo,* when removed from its burrow and calcareous tube, is from a few inches to 3 ft. in length, according to the species to which it belongs, and is cylindrical and worm-like in appearance. The anterior end, which lies at the bottom of the burrow, is some­what enlarged and bears a pair of shells or valves, which are not connected by the usual ligament, but are widely separated dorsally. The valves are triangular in shape and very concave on the side which is in contact with the animal. In front their edges are widely separated, and the mantle tube, which is elsewhere closed, has here a slight median aperture, through which the short sucker-like foot can be protruded. The next portion of the body behind the shell-bearing part is naked, except for the shelly lining of the burrow, which is secreted by this part. Anteriorly this portion contains part of the body proper; posteriorly it forms a tube divided internally by a horizontal partition into two chambers and representing the two tubular outgrowths of the mantle called siphons, here united together. In the lower chamber are the elongated gill plates, which have the typical lamelli- branchiate structure. In the upper chamber anteriorly is the rectum. A thick muscular ring terminates this region of the body, and bears two calcareous plates shaped like spades or battledores. The expanded parts of these plates are free and project backwards;

the handle is fixed in a deep socket or pit lined by epidermis. These calcareous plates are called pallets (Fr. *palmules).* Behind the pallets the tubular body bifurcates, forming two siphons similar to those of other Lamellibranchs; the siphons can be con­tracted or expanded within wide limits of length. The principal organs of the body—stomach, heart, generative organs and neph­ridia—are situated in the anterior part of the body, forming a visceral mass, which extends some distance behind the valves. The heart is above the intestine and not perforated by it. There are two adductor muscles of which the anterior is rudimentary and situated just above the mouth, while the posterior is large and passes between the middle parts of the shell-valves. The visceral mass extends some distance behind the posterior adductor, and behind the rectum, and the visceral ganglia, which in most Lamellibranchs are attached to the ventral surface of the posterior adductor, are in this case at the end of the visceral mass and at the anterior end of the gills. Besides the visceral ganglia a cerebral and a pedal pair are present. The stomach is provided with a large crystalline style. The function of the pallets is to form an operculum to the calcareous tube when the siphons are with­drawn into it. In some species the external or narrower end of the calcareous tube is provided with transverse laminae projecting into the lumen; and in some the external aperture is divided by a horizontal partition into two, one for each siphon.

The *Teredo* is dioecious, and the males are only in the proportion of 1 : 500 of he females. As in the case of the oyster, the ova arc retained in the branchial chamber during the early stages of their development. The segmentation of the ovum is unequal, and leads to the formation of a gastrula by epibole. By the growth of a preoral lobe provided with a ring of cilia, and by the formation of a mouth and an anus, the trochosphere stage is reached. A pair of thin shells then appear on the sides of the larva, connected by a hinge on the dorsal median line, and the foot grows out between mouth and anus. By the time the larvae “ swarm,” or leave the branchial cavity of the parent to live for a time as free-swimming pelagic larvae, the valves of the shell have grown so large as to cover the whole of the body when the velum is retracted; the foot is also long, cylindrical and flexible, and can be protruded far beyond the shell. The valves of the shell at this stage are hemispherical in shape, so that the whole larva when its organs are retracted is contained in a globular case.

Concerning the later changes of the larva and the method by which it bores into wood little or nothing is known from direct observation. Much has been written about the boring of this and other marine animals, but even yet the matter cannot be said to be satisfactorily elucidated. Osler, in a paper in *Phil. Trans.,* 1826, argued that the *Teredo* bores by means of its shells, fixing itself by the surface of the foot, which it uses as a sucker, and then rasping the wood with the rough front edges of the shell-valves. This view was founded on the similarity of the arrangement of the shells and muscles in *Teredo* to those occurring in *Pholas,* in which the method of boring described was actually observed. W. Thompson, in a paper in the *Edinb. New Phil. Journ.,* 1835, supported the view that the excavation is due to the action of a solvent secreted from the surface of the animal. Albany Hancock, again *(Ann. and Mag. Nat. Hist.,* vol. xv.), thinks that the excavating power of *Teredo* is due to silicious particles imbedded in the anterior portion of the integument, in front of the valves. But the actual existence of either silicious particles or acid secretion has been denied by others. Jeffreys believes that the foot is the organ by which the animal burrows. In the larger number of Lamellibranchs the foot is doubt­less a burrowing organ, and it is difficult to see how the limpet hollows out the rock to which it is attached if not by means of the surface of its foot. At the same time it is difficult to explain how the soft muscular foot can penetrate into hard wood. The process is of course slow, and Jeffreys supposes that particles are detached one by one from the moistened surface to which the foot is applied. In any case the valves are covered by an epidermis, which could scarcely be there if they were used in burrowing.

*Teredo* grows and burrows at an extremely rapid rate : spawning lakes place in the spring and summer, and before the end of the year the animals are adult and their burrows of large size. Quatre- fages relates that at Guipuzcoa (N. Spain) a ferry-boat was sunk accidentally in the spring, and was raised four months afterwards, when its timbers were already rendered useless by *T. pedicellata.* How long the animals live is not accurately known, but Quatrefages found that they nearly all perished in the winter. This cannot be generally the case, as the size of the tubes varies so greatly. In Holland their greatest ravages are made in July and August. Iron ships have nothing to fear from their attacks, and the copper sheathing now almost universally used protects wooden hulls. A great deal of loss is, however, caused by *Teredo* in harbour works and shipping stages, and the embankments in Holland are con­tinually injured by it. The most efficient protection is afforded by large-headed nails driven in in close proximity. Soaking wood in creosote is not a certain safeguard; Jeffreys found at Christiania in 1863 that a large number of harbour piles previously soaked in creosote had been completely destroyed by *T. navalis.* Coal tar and the silicate of lime used for coating stonework have been suggested as protective coverings, but they do not seem to have been adequately tested.

Species of *Teredo* occur in all seas. The animal was known to the ancients and is mentioned by Theophrastus, Pliny and Ovid. In 1715 it is mentioned by Valisnieri, in 1720 by Deslandes. In 1733 great attention was drawn to it on account of the discovery that the wooden dikes of Holland were being rapidly destroyed by ship-worms, and that the country was in danger of inundation. Three treatises were published concerning the animal, by P. Massuet, J. Rousset and Godfrey Sellius. The work of the last-named, which was the best, described the anatomy of the creature and showed that its affinities were with bivalve molluscs. The truth of Sellius’s view was not grasped by Linnaeus, who placed *Teredo* together with *Serpula* in the genus *Dentalium·,* but its proper position was re-established by Cuvier and Lamarck. Adanson, un­aware of the work of Sellius, in 1757 believed himself to be the first to discover the molluscan affinities of *Teredo.* It will not be necessary to give here a definition of the genus taken from any systematist; it will be sufficient to point out that the long cylin­drical body with its two small anterior polygonal valves, the absence of a ligament and accessory valves, the muscular ring into which are inserted the calcareous pallets, and the continuous calcareous tube lining the hole bored by the animal are the diagnostic features.