the long, white alimentary canal, crowded with mud. The mouth is devoid of armature, and passes without break into the oesophagus; this is surrounded by the retractor muscles, which are inserted into the skin around the mouth, and have their origin in the body­wall, usually about one-third or one-half of the body-length from the anterior end (figs. 1 and 2). Their function is to retract the introvert, which is protruded again by the contraction of the circular muscles of the skin; these, compressing the fluid of the body-cavity, force forward the anterior edge of the introvert. The number of muscles varies from one *(Onchnesoma* and *Tylosoma)* to four, the latter being very common. The alimentary canal is U-shaped, the dorsal limb of the U terminating in the anus, situated not very far from the level of the origin of the retractor muscles. The limbs of the U are further twisted to­gether in a looser or tighter coil, the axis of which may be traversed by a “ spindle" muscle arising from the pos­terior end of the body. No glands open into the ali­mentary canal, but a diver­ticulum, which varies enor­mously in size, opens into the rectum. As is so often the case with animals which eat mud and sand, and extract what little nutri­ment is afforded by the organic débris therein, the walls of the alimentary canal are thin and appar­ently weak. All along one side is a microscopic ciliated groove, into which the mud does not seem to enter, and along which a continuous stream of water may be kept up. Possibly this is respiratory—there are no special respiratory organs. A so-called heart lies on the dorsal surface of the oeso­phagus; it is closed behind, but in front it opens into a circumoesophageal ring, which gives off vessels into the lophophore and ten­tacles. The contraction of this heart, which is not rhythmic, brings about the expansion of the tentacles and lophophore. This sys­tem is in no true sense a vascular system ; there are no capillaries, and the fluid it contains, which is cor- pusculated, can hardly have a respiratory or nutritive function. It is simply a hydrostatic mechanism for expanding the tentacles. The excretory organs are typical nephridia, with an internal ciliated opening into the body-cavity, and an external pore. One surface of the tube is pro­longed into a large sac lined with glandular excretory cells. The organs are typi­cally two, though one is often absent, *e.g.* in *Phas- colion.* They serve as channels by which the re­productive cells leave the body, and they are some­times spoken of as " brown tubes.” There is a well-, developed brain dorsal to the mouth; this gives off a pair of oesophageal commissures, which surround the oesophagus and unite in a median ventral nerve-cord which runs between the longitudinal muscles to the posterior end of the body. From time to time it gives off minute circular nerves, which run round the body in the skin and break up into a very fine nerve plexus. There are no distinct ganglia, but ganglion cells are uniformly distributed along the ventral side of the cord. The whole is anteriorly somewhat loosely slung to the skin, so as to allow free play when the animal is extend­ing or retracting its introvert. A pit or depression, known as “ the cerebral organ,” opens into the brain just above the mouth; this usually divides into two limbs, which are deeply pigmented and have been called eyes.

Sipunculoids are dioecious, and the ova and spermatozoa are formed from the modified cells lining the body-cavity, which are heaped up into a low ridge running along the line of origin of the retractor muscles. The ova and the mother-cells of the spermatozoa break off from this ridge, and increase in size considerably in the fluid of the body-cavity. Fertilization is external ; and in about three days a small ciliated larva, not unlike that of the Echiuroids, but with no trace of segmentation, emerges from the egg-shell. This little creature, which has many of the features of a Trochosphere larva, swims about at the surface of the sea for about a month and grows rapidly. At the end of this time it undergoes a rapid metamorphosis : it loses many of its larval organs, cilia, takes in a quantity of water into its body-cavity, sinks to the bottom of the sea, and begins life in its final form.

The following genera of Sipunculoids are recognized :—(i.) *Sipunculus.* This, with *Physcosoma,* has its longitudinal muscles divided up into some 17-41 bundles. It has no skin papillae. The members of this genus attain a larger size than any other species, and the genus contains some 16-17 species. (ii.) *Physcosoma* (fig. 3) has its body covered with papillae, and usually numerous rows of minute hooks encircling the introvert. It is the most numerous genus, and consists for the most part of shallow-water (less than 50 fathoms) tropical and subtropical forms. They often live in tubular burrowings in coral-rock. The following three genera have their longitudinal muscles in a continuous sheath:—(iii.) *Phascolosoma,* with some 25 species, mostly small, with numerous tentacles. (iv.) *Phascolion,* 10 species, small, living in mollusc-shells and usually adopting the coiled shape of their house; only one kidney, the right, persists. (v.) *Dendrostoma,* with 4-6 tentacles, a small genus found in tropical shallow water. (vi.) *Aspidosiphon,* with 19 species, is easily dis­tinguished by a calcareous deposit and thickened shield at the posterior end and at the base of the introvert, which is eccentric. (vii.) *Cloeosiphon* has a calcareous ring, made up of lozenge-shaped plates, round the base of its centric introvert. (viii.) *Petalostoma,* a