

crown, where it divided into two branches, which passed within and around the tentacular cup, and sent a twig to each of the tentacles. Along these the corpusculated blood streamed, returning by a vein in each, while four large trunks passed from the base of the ring (one from the inside, and another from the outside of each of the horns of the ring). Each pair and afterwards the two trunks united, and then the two latter coalesced to form a single large vein, which traversed the axis of the body on the opposite side of the gullet to the artery. The whole of the trunks are contractile, the artery pulsating about fifteen times per minute. Professor Allman, again, found that the blood returned by the same channel in the tentacles—the current being thus alternately forward and backward; and in the examples from the Challenger only one distinct trunk is visible. Dyster describes the blood as ascending some tentacles and descending others. The pulsations occur only in the artery, whereas in the vein the current is continuous, and the main trunks are connected by numerous branches. Schneider regards, after Krohn and Claparède, the vessels just alluded to as dorsal and ventral; and he makes the statement (which has not been confirmed) that the red blood-corpuscles in the young form float freely in the body-cavity, and then enter the vessels at the base of the tentacles. In a note on the British species, Kölliker gives the size of the nucleated and intensely red blood-corpuscles as 0.004–0.005, and mentions also colourless amœboid cells and yellowish corpuscles. Dyster gives the diameter of the corpuscles in his species as 1-3200th to 1-1700th in., and about 1-8000th of an inch in thickness; while Kowalewsky estimated them as about four times the size of those in man.

Nervous System.

In the preliminary account no observations of note were made on the nervous system, but the subsequent appearance of Mr. Caldwell's paper in the Proceedings of the Royal Society again directed attention to the subject, though, from the imperfect preservation of the specimens collected both by the Challenger and Dr. Haswell, considerable difficulties were met with.¹

Mr. Caldwell observes² that “nervous processes of the ectoderm cells retain their connection with the ectoderm, and concentrations, both of fibres and ganglion-cells, occur in the skin outside the homogeneous basement-membrane. The central nervous system remains therefore in the epidermis, *representing* the primitive condition.

“Concentrations of the nervous system take place round the mouth to form a *postoral nerve-ring*. The anus lies outside this. The ring follows the line along the base of the tentacles, and has therefore, like them, the form of a horse-shoe. In front of

¹ Dyster could detect no distinct nervous system, “though it is possible two obscure organs at the posterior part of the floor of the lophophore may be œsophageal ganglia.” The animals showed no sensibility to light.

² *Proc. Roy. Soc.*, vol. xxxiv. p. 372.