

20. *Verticordia tornata* (Jeffreys). Station 106; 1850 fathoms; a single specimen.

The mantle is almost quite open ventrally; only a short pallial commissure separates the branchial from the pedal aperture (from  $q$  to  $j$ , Pl. III. fig. 3). The two posterior orifices are surrounded by a common crown of tentacles arranged in a single row ( $r$ ) and of an odd number; one of them being alone on the dorsal side, and seven others, of different sizes, on each side.

The anal aperture has a short siphon (Pl. III. fig. 3,  $p$ ). The branchial aperture is sessile. But it possesses, internally, a large tubular valve, incompletely closed (cut open on the ventral side) (Pl. III. fig. 3,  $k$ ), which certainly cannot be externally evaginated.

The foot ( $d$ ), retracted in the specimen, must be very long in its extended state; it has a byssal groove on its posterior surface (Pl. III. fig. 4,  $d'$ ).

The buccal aperture ( $\alpha$ ) has two pairs of labial palps, the anterior ( $b$ ) greatly developed, the posterior ( $c$ ) somewhat reduced.

There is no gill, or, at least, no structure like the respiratory organs of other known Pelecypoda. We have seen in *Lyonsiella* (Pl. II. fig. 10,  $e$ ) that the gills form a partition separating the pallial cavity into two great chambers, and traversed by the foot.

Here a similar partition exists ( $e$ ). But it is muscular throughout its entire length, and is entirely different in structure and aspect from the branchial partition of *Lyonsiella*. It only exhibits on each side two groups of transverse lamellæ, very slightly projecting ( $g$  and  $g'$ ), between which narrow slits establish communication between one chamber and the other. These groups of lamellæ exhibit three longitudinal stays on the inner surface of the partition (see Pl. III. fig. 5,  $c$ ).

The muscular partition extends from the anterior adductor to behind the foot, which traverses it without uniting with it. Behind the foot it is continued, without interruption, by a thinner portion ( $h$ ), which forms the division between the two siphons.

The relation and position of this partition place it beyond doubt that it is homologous with the branchial partition in *Lyonsiella* (see Pl. II. fig. 10,  $e$ ). We have thus here to do with a very remarkable rudimentary respiratory apparatus. The two groups of transverse lamellæ on each side ( $g$  and  $g'$ ) seem to me to represent a portion of the branchial lamellæ which has been preserved.

The muscular partition is united to the mantle over all its circumference; at several points on each side there are muscular bundles, which attach it to the shell: an anterior, beside the retractor muscle of the foot; a second, dorsal and rather large; and a third, posterior, long and delicate (Pl. III. fig. 4,  $h$ ), which is inserted near the posterior retractors of the foot. These last ( $n$ ) are remarkable because they are only distinct at their insertion, and arise from a common trunk. The muscles of the partition probably serve to make it contract in order to expel, through the slits between the plates ( $g$ ,  $g'$ ), some of the water contained in the anal or dorsal chamber.