

tudinally plicated, and the grooves are cut up into pouches which are seen clearly on the external surface. The transverse vessels are usually larger and smaller alternately. The internal longitudinal bars are strong, and bear large, irregular, often cleft or lobed papillæ. The meshes are transversely oblong, and each contains about six stigmata.

The Dorsal Lamina is ribbed transversely; the ribs are rather wide, and project in the form of small teeth on the free margin.

The Tentacles are filiform, slender, and of two sizes, placed large and small alternately; they are probably thirty to thirty-five in number.

This species seems closely allied to the last described one (*Pachychlæna oblonga*), but on account of the imperfect condition of both the specimens in the collection, many of the characters could not be determined. The small portion of the test remaining, suggests that the shape was more or less spherical, at least as far down as the place of attachment. The anterior end is broad. The apertures in place of being prominent are depressed (Pl. XXVIII. fig. 1), and in neither of the specimens can the number of lobes around them be determined. The depression of the apertures can scarcely be due to contraction, on account of the excessive thickness and rigidity of the test (Pl. XXVIII. fig. 1). Probably the depression was advantageous in rendering the test at the margin of the opening less solid, and thus permitting a certain amount of motion around the apertures.

The test contains many ellipsoidal pigment cells, varying from $\frac{1}{600}$ to $\frac{1}{300}$ of a millimetre in their long diameter; they are very regular in outline, and contain each one or more strongly refracting circular bodies, and some granular dark yellow pigment. These are thickly scattered throughout the test. Bladder cells are present in the outer layers, where the terminal twigs of the blood-vessels are also seen, generally filled with yellow corpuscles.

The mantle differs greatly in its thickness on the two sides of the body. It is thick on the siphons, which are necessarily long and narrow (Pl. XXVIII. fig. 1).

The branchial sac has a very different appearance according as it is viewed from the inside (Pl. XXVIII. fig. 2) or the outside (Pl. XXVIII. fig. 3). Internally the internal longitudinal bars and their curiously shaped papillæ are the most prominent features; the plication of the stigmatic part is also visible, but the pouches are indistinct (Pl. XXVIII. fig. 2). Externally, on the other hand, the pouches are the most evident characteristic (Pl. XXVIII. figs. 3 and 4), while the internal longitudinal bars are not seen. The transverse vessels are of two sizes, and the smaller ones enter into the longitudinal plications, while the larger ones interrupt it, hence the crests and troughs extend each across two meshes (Pl. XXVIII. fig. 4), and the pouches contain each two rows of stigmata (figs. 3 and 4).

The ribs on the dorsal lamina (Pl. XXVIII. fig. 5) are broad and band-like, and rather increase in width as they approach the free margin, from which they project as small teeth.