membranous layer, which is strengthened by some muscular elements and seems to include some small cavities.

As in all previously known Holothurids, the efferent duct is generally simple, but in some cases it may be observed that its end, when piercing the perisoma, gives off some very fine branches, each communicating with the surrounding medium by a pore. In *Elpidia purpurea* and *Peniagone vitrea* the efferent duct divides into two narrow divergent branches, which pass in opposite directions through the perisoma, and open externally, one on each side of the madreporic pore. In *Peniagone wyvillii* the efferent duct (Pl. XXXVII. fig. 6, *e*) is surrounded by the same thick and dense sheath of connective tissue which envelops the madreporic canal, and divides into two short, wide, and divergent canals, each of which, when the inside of the perisoma is reached, terminates in about eight long slender canals, which run within the perisoma, and communicate with the exterior by pores. These pores are scattered, not only over the anterior portion of the odd interambulacrum, but sparsely on the lateral interambulacra also.

The walls of the reproductive organs are often strengthened by calcareous deposits, which in some forms, as, for instance, *Deima fastosum*, &c., are very closely crowded, and covering one another, the walls thus becoming very hard and brittle. Having nothing of importance to add to the facts already known regarding the histological structure, I only refer to Plate XXXVII., which shows some sections of the reproductive organs.

General Remarks.

The most remarkable and distinguishing characteristic of the Elasipoda is their agreement in several important points, in their inner as well as their outer organisation, with the larval state, an agreement more close than occurs in any previously known Holothurid. The following characteristics are especially worthy of note as reminiscences of the development of the Holothurioidea :—

1. The strongly marked bilateral symmetry of the body and the fact that the highly convex dorsal surface is often extended further than the mouth, which thus becomes fully ventral in position.

2. The presence of pedicels on the ventral surface only, and their arrangement in pairs, but, above all, in the Elpidiidæ, their small number and their occasional position on the posterior part of the body only.

3. The simple shape of the calcareous deposits of the body-wall.

4. The simple conformation of the calcareous ring.

5. The communication of the water-vascular system with the exterior.

6. The absence of respiratory trees and ciliated cups.

Our present knowledge of the development of the higher Holothurids is rather unsatisfactory, and confined to that of a few forms. However, the development of *Holothuria tremula*, Gunner, *Holothuria tubulosa*, Gmelin, and *Cucumaria doliolum*,