

the folds are more constant in number and position. There are almost always the same number of folds on each side,¹ and that number is either five (*Molgula crystallina*, Møller), six, or seven—usually the latter. Large papillæ on the internal longitudinal bars, like those characteristic of the Ascidiidæ, are never seen. Usually the bars are perfectly smooth, but in a few species minute projections, evidently corresponding to papillæ, are present.

In a typical *Molgula* the arrangement of the stigmata is very peculiar. Each fold projecting from the inner surface of the branchial sac is formed of a longitudinal series of conical bags, having square external bases, and pointed internal apices, which may be branched. The stigmata form spiral slits more or less interrupted, extending from the base to the apex of this bag or infundibulum, as Lacaze-Duthiers names it.

The flat spaces lying between the rows of infundibula have their stigmata more irregularly arranged, but still curved, and usually having an indistinctly marked spiral disposition. In some of the new forms this typical arrangement is not found, the stigmata being irregularly disposed though still curved, but occasionally almost straight.

The tentacles are compound, and are very like those of the Cynthinæ and Bolteninæ. Lacaze-Duthiers mentions as characteristics of the Molgulid tentacles the greater number of secondary and tertiary pinnules, their more irregular size, and less tapered extremities, and most important of all the raising up of the membrane covering their inferior or branchial surface into puffed-out projections and folds.

The appearance of the intestine is rather characteristic of the Molgulidæ. It is firmly attached to the mantle on the left side, and is so sunk in it that it becomes very clearly visible from the outer surface, and seems to be in the middle of the thickness of the mantle.

The genitalia are placed on the inner surface of the mantle, and are usually developed on both sides. On the left side the gland is close to the intestine, on its anterior edge, however, not in the loop. The opposite gland, which is absent in the genus *Eugyra*, occupies the centre of the right side; while posteriorly to it lies the heart, separating the genital gland from the renal organ, which has rather a characteristic appearance in the Molgulidæ, being a compact and more or less solid organ placed near the inner surface of the mantle towards the posterior end of the right side.

The following genera have been at various times referred to this family:—*Molgula*, *Eugyra*, *Ctenicella*, *Anurella*, *Glandula*, *Gymnocystis*, *Pera*, *Lithonephrya*, *Cæsira*, and *Ascopera*. Of these *Molgula*, *Eugyra*, and *Ascopera* are represented in the Challenger collection.

Ctenicella was founded by Lacaze-Duthiers in 1877, and is probably a good genus. I have found it impossible, however, to accept his *Anurella*. It is distinguished from all other Molgulidæ by the remarkable structure of the larva, which is "amœboid" and

¹ In *Molgula pyriformis* (see page 79) there are seven folds on the right side and six on the left. It is possible, however, that this may be an individual peculiarity.