

is precisely what is observed in *Peracelis*, whose operculum closely resembles that of the young Cymbuliidæ.

4. Besides this it has been pointed out that the older larvæ of the Cymbuliidæ, in which the proboscis is not yet reflexed in front of the fin, have the head shaped exactly like that of *Peracelis* (compare for example *Gleba*, Pl. III. fig. 12); it is quite symmetrical as regards the tentacles, with the same small prominent proboscis, the penis even being also situated on the right side. Further, in *Peracelis*, as in all the Cymbuliidæ, the central nervous system has three visceral ganglia.

We may say then that the Cymbuliidæ have descended from "Limacinoid" ancestors, and that among the recent Limacinidæ *Peracelis* is the form which most closely resembles those ancestors.

II. It now remains, then, for us to ascertain which of the two families, Limacinidæ and Cavoliniidæ, is the more primitive; that is to say, are the Cavoliniidæ descended from the Limacinidæ or have they given origin to them? Very numerous arguments speak in favour of the former hypothesis, and show that the rotation of 180 degrees, which has been alluded to above, has taken place from right to left in a Limacinoid type to give rise to the Cavoliniidæ, whilst the converse is impossible.

1. Let us consider first the relations of the digestive tract and genital duct. We see (Pl. I. fig. 3) that in the Limacinidæ the duct arises on the ventral side of the gland and passes directly to the right side of the body, making a quarter of a revolution (90 degrees) round the digestive tract (see Pl. III. fig. 6). In the Cavoliniidæ (Pl. II. fig. 1) the duct arises on the dorsal edge of the genital gland, and instead of proceeding directly to the right side of the body where the genital aperture is situated, it passes by the left side, then ventrally, and finally reaches the right side, having thus made three-quarters of a revolution (270 degrees) around the digestive tract (see Pl. III. fig. 6). It is clear that of these two routes the shorter (that is, 90 degrees) is the more primitive. It follows then that in the Cavoliniidæ, considering the genital aperture which is in the head as fixed, the visceral portion where the genital gland is situated along with the origin of the genital duct, has made a half rotation from right to left around a longitudinal axis, which explains why the genital duct makes a half revolution (180 degrees) round the tube more than in the Limacinidæ.
2. A large number of events in the development prove beyond all possibility of contradiction that the Cavoliniidæ spring from Limacinoid ancestors by the relative displacement of the visceral and cephalic portions of the body.

A. In stating his theory of rotation in the Cavoliniidæ, Boas remarks that the anterior or cephalic portion has performed a rotation of 180 degrees relatively to the posterior part, or *vice versa*. This manner of expressing the process does