

dimensions, whilst *Limacina australis*, which was the subject of Souleyet's investigations, is one of those small forms classed by him under the generic name *Spirialis*. He recognised, however, their close relationship to the larger *Limacina*, the only difference which he stated to exist between them—the absence of the operculum in *Limacina*—has been found to have no foundation, for it is only that the adults in the large forms have lost the operculum. In consequence of the small size of his specimens a number of points in their organisation have escaped him.

In the Challenger collection there was only one specimen of a large *Limacina* (*Limacina antarctica*) which I have therefore been compelled to preserve intact; but since Mr. John Murray has placed in my hands a number of specimens of *Limacina helicina* from Hudson's Strait, I have been able to study a great part of the organisation of the genus, upon a large species and upon small forms (*Limacina lesueuri* and *Limacina australis*), which latter have served more especially for special points and for purposes of comparison.

Lastly, as regards the genus *Peracelis*, the form studied is *Peracelis reticulata*; but as specimens of this genus are very rare, I have only been able to make use of two, and hence have not been able to push my researches so far as I could have wished.

In all the Limacinidæ the shell is sinistral, and hence the animal is coiled in a left-handed direction; but although twisted in this manner, in all its organisation the animal is dextrorsal, that is to say, that in the asymmetrical disposition the right side predominates; it is here that are found the anus, the genital aperture, and the copulatory organ.

This is a fact opposed to the usual condition in the sinistrorsal Gastropods. In *Physa*, for example, the spiral (and hence the shell) is sinistral; the anus, the genital aperture, and the copulatory organ are all placed on the left side, and hence it is this side which predominates in the asymmetry of the animal. Thus the direction of the spiral corresponds with the kind of asymmetry observed in this Mollusc.

The difference between these two cases shows, however, that the mode of asymmetry in a Mollusc is in no way dependent upon the direction of its coil. In *Physa* there is a complete *situs inversus*; and it is this which has brought about the left-handed twisting of the animal and the sinistral character of its shell, for we are acquainted with no Gastropod which has acquired a left-handed asymmetry of organisation, and had at the same time preserved a dextral shell. In this case, then, the sinistral coiling appears to be only one of the consequences of the *situs inversus*.

On the contrary, as we see in the Limacinidæ, an animal with dextral organisation may be coiled sinistrally. The case of the Limacinidæ, too, does not seem to be unique, since, according to Bouvier,¹ the genus *Lanistes* (*Ampullaria* with left-handed spiral) also has a dextral organisation.

The direction of the spiral, then, does not permit us to determine the mode of the

¹ Sur le système nerveux typique des Prosobranches dextres ou sénestres, *Comptes rendus*, t. ciii. p. 1276, 1886.