

## DETORSION DIIH/DI (S/B)

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Changes occurring in torsion are to a certain extent reversible. This reversion is known as detorsion and it is very characteristic of the whole group of the Euthyneura. As a result, pallial complex travels back towards the posterior end along the right side, ctenidia point back wards, auricles move behind the ventricle, and the visceral loop becomes untwisted and symmetrical. In this way, a secondary external symmetry is re-established. Torsion must be disadvantageous to adult snails, as many of them have undergone detorsion processes. Various degrees of detorsion are met within the Euthyneura. In the least specialized opisthobranchia and pulmonata (Ackenon, Bulla etc), detorsion is not complete, so that the visceral loop remains partly twisted and the anus and ctenidium are directed laterally, instead of anteriorly. Formerly, this condition was looked upon as an arrested stage in the torsion, but there is the same reduction of the paired parts of the pallial complex as in the specialized Streptoneura. Total detorsion, as shown by the

typical opisthobranchia (Aplysia), is accompanied by a reduction or disappearance of the shell. In extreme cases, as in petrosalcea, the mantle and the visceral sac also disappear and the body elongates to become worm-like. The mantle cavity, visceral hump, external shell and even Ctenidia may be lost, as in Nudibranchia (Eolis, Dons etc.)

The phenomenon of detorsion can thus be elaborated as follows:

1. In some cases the right Ctenidium (originally left) and the ophradium are absent.
2. In Eolis, there is veliger larva with a coiled visceral hump that undergoes torsion but adults do not show any loop and the pallial complex is posteriorly placed in adult. Naturally the <sup>de</sup>torsion must have occurred during the course of further development.
3. In Pulmonate, the ~~paraxial~~ pallial complex is shifted but there is no chirostony as a result of shortening of visceral commissures. The

Neurovisceral mass and so the chiasmata is  
secondarily lost. Also -