

In *Culeolus recumbens* the dorsal part of the intestine or rectum is short compared with the ventral part next the stomach ; this is caused by the atrial aperture being situated on the dorsal edge, and not at the posterior end of the body. In *Culeolus murrayi*, where the atrial aperture is more posterior, the rectum is longer. In *Culeolus perlucidus*, where the atrial aperture is not quite posterior, the great length of the rectum is caused by its devious course.

The form and course of the alimentary canal in the genus are thus very similar to what is found in the majority of Simple Ascidians, and may easily be derived from the arrangement found in the genus *Ascidia* (fig. 15, left hand diagram) by twisting the rectum round posteriorly, so as to allow the anus to follow the atrial aperture from the anterior to the posterior end of the dorsal edge.

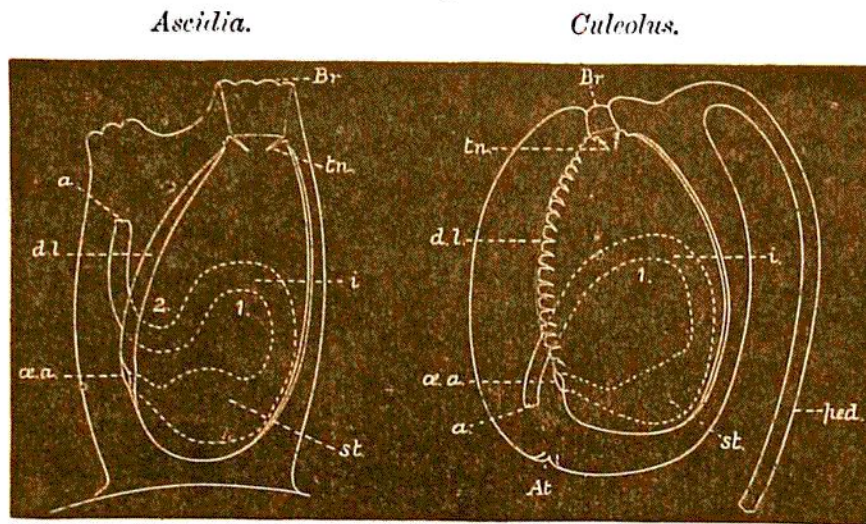


FIG. 15.—Diagrams of *Ascidia* and *Culeolus*, seen from the right side, to show the course of the Alimentary Canal. Br., branchial aperture ; At., atrial aperture ; ped., peduncle ; tn., tentacles ; d.l., dorsal lamina ; a.a., œsophageal aperture ; st., stomach ; i., intestine ; a., anus ; 1, intestinal loop ; 2, rectal loop.

Thus the rectal loop, or second intestinal curve (2), concave anteriorly in *Ascidia*, is entirely done away with in *Culeolus* (fig. 15, right hand diagram). In *Culeolus perlucidus* there is a rudiment of it, as the rectum is long, and, after running rather farther posteriorly and ventrally than the atrial aperture, has to curve up again dorsally, so as to bring the anus near it. If we compare this arrangement with that found in a species of *Ascidia* where the atrial aperture is placed far back on the dorsal edge, as in *Ascidia depressa*, the difference will appear very slight.

The course of the intestine in *Culeolus murrayi*, where the atrial aperture is posterior and the rectum runs straight towards it, is the simplest, and seems probably to have been the archaic form. *Culeolus perlucidus* has the atrial aperture rather more dorsal in position, and consequently there is a slight twist upwards in the terminal part of the rectum. *Ascidia* is a still more modified form in which the atrial aperture is normally at the anterior end of the dorsal edge, and here we find the rectal loop fully developed and the rectum running anteriorly in place of posteriorly as in *Culeolus*.

*The Genitalia.*—The genital glands, like the intestine, could only be examined in the three species of which there are more than single specimens.