

This genus was first instituted by H. Milne-Edwards under the impression that Savigny's *Didemnidae* has no common cloacal cavities, while the species which he found living on the French coast had. As all the members of the family probably agree in having more or less well-developed common cloacal cavities and apertures, Milne-Edwards' genus was really unnecessary, but it has been retained for a section of the old genus *Didemnum*, and now includes those species which form thin incrusting colonies, with a hard test stiffened by the presence of numerous calcareous spicules. In using the name in this sense von Drasche considers it as forming only a subgenus with *Didemnoides* as its companion group, but I feel convinced that *Leptoclinum* and *Didemnoides* are as distinct from one another as either is from *Didemnum*, and therefore I regard the three groups as being genera of equal rank.

In *Leptoclinum* the Ascidiozooids have the atrial apertures placed near the anterior end of the body, and usually provided with long atrial languets. They never have simple atrial siphons like those of *Didemnum*.

The branchial sac in *Leptoclinum* has usually four rows of stigmata, but this is not an invariable characteristic, as in *Leptoclinum thomsoni* I have found that some of the Ascidiozooids in the colony have four rows, while one at least has only three, and in *Leptoclinum propinquum* there are apparently only three rows of stigmata, and yet, as I shall point out in the description of that form, I cannot regard it as being a species of *Didemnum*. On the other hand, in *Leptoclinum edwardsi* five rows of stigmata were found in one of the Ascidiozooids examined, thus showing an approach to the condition characteristic of *Eucalium*.

The relations of the alimentary canal to the branchial sac may vary considerably in the genus. In most cases there is a distinct abdomen which extends beyond the thorax posteriorly, but in *Leptoclinum moseleyi* the alimentary canal lies on the dorsal edge of the branchial sac, and the body of the Ascidiozooid is short. This is probably a modification produced by the thin condition of the colony.

A large number of species of *Leptoclinum* have been described, chiefly by Milne-Edwards, Giard, Della Valle, and von Drasche. It is extremely difficult to distinguish some of these species, especially in the case of spirit specimens, where the natural colour is lost. I believe, however, that I am right in considering that all the Challenger specimens of this genus belong to species previously unknown to science, with the exception of those which I have referred to *Leptoclinum albidum*, Verrill, and its variety *luteolum*. It is possible that *Leptoclinum jacksoni* and two or three of the other more massive species should be removed from this genus and placed under *Diplosomoides*.

The various species and varieties of *Leptoclinum* in the collection may be distinguished shortly by the following characters:—