

Branchial Sac large and well developed. Folds sometimes present. Internal longitudinal bars strong, and fairly numerous.

Dorsal Lamina in the form of a plain membrane.

Tentacles numerous.

Alimentary Canal usually placed alongside the branchial sac, rarely extending beyond it posteriorly.

Reproductive Organs in the form of polycarps attached to or imbedded in the mantle, and projecting into the peribranchial cavity.

Gemmation effected by means of the vessels in the common test (?).

I form this family for a very interesting little group of Ascidians, the position of which is difficult to determine. I regard them as Compound Ascidians which are allied to the Cynthiidæ amongst Simple Ascidians, and have been evolved from the subfamily Styelinæ.¹ Various previously described forms must be placed here along with the new Challenger species. The history of the family is as follows:—

In 1850 Dr. Victor Carus, in a paper on the Zoology of the Scilly Isles,² described the genus *Thylacium*, which he considered as a Social Ascidian allied to *Clavelina*. The individual animals in his species, *Thylacium sylvani*, were connected by a common fleshy base from which they projected upwards, the body was divided into an abdomen and a thorax, and both apertures were four-lobed. Carus considered that in *Thylacium* reproduction was probably effected by gemmation as well as sexually, and he placed the *Cynthia aggregata* of Forbes and Hanley, which he also regarded as capable of reproducing by gemmation, in his new genus under the name of *Thylacium aggregatum*.

In 1863 Alder³ gave a definition of *Thylacium*, Carus, and described two new species, *Thylacium normani*, which seems to be allied to the form described by Carus, and *Thylacium variegatum*, which differs from the other two in having the Ascidiozooids depressed and scarcely projecting from the surface of the colony. Alder does not specially mention the condition of the abdomen in this species, but I think from his general description of the body that the abdomen cannot be distinct from the thorax, and in that case this species ought not to remain in the genus *Thylacium*. I should be inclined then to remove Alder's *Thylacium variegatum* from the genus *Thylacium* and place it in Giard's genus *Synstyela*.

In 1868 Dr. J. E. Gray briefly described,⁴ and figured in a woodcut, a new form which he regarded as a Social Ascidian and named *Oculinaria australis*. It was found at Fremantle in Western Australia, and formed an erect elongated colony composed of a massive test in which rounded Ascidiozooids were imbedded. The test contains imbedded sand-grains. There can be little doubt that *Oculinaria* belongs to this family, but whether it is

¹ See Summary and General Remarks at the end of this Report.

² *Proceedings of the Ashmolean Society*, vol. ii. p. 264, Oxford, 1843-52.

³ *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xi. p. 152.

⁴ *Proc. Zool. Soc. Lond.*, vol. for 1868, p. 564.