mantle. The nerve ganglion is conspicuous (Pl. XXXIII. fig. 15, *n.g.*) and is of irregularly rounded form. The aperture of the neural gland is distinct. In the specimen figured (Pl. XXXIII. fig. 15) it seemed to open posteriorly to the peripharyngeal band.

Family V. Diplosomidæ.

Colony forming a thin, incrusting layer, rarely thickened, never pedunculated.
Systems irregular, usually inconspicuous. Common cloacal apertures usually visible.
Ascidiozooids divided into two distinct regions, thorax and abdomen.
Test soft and gelatinous, usually transparent, rarely containing calcareous spicules. Vascular ectodermal appendages provided with muscle fibres.
Branchial Sac large, with four rows of stigmata.
Dorsal Lamina represented by large languets.
Alimentary Canal extending behind the branchial sac. Stomach smooth-walled.
Reproductive Organs behind the intestinal loop or on its right side. Testis forming more than one mass. Vas deferens not spirally coiled.
Gemmation pyloric. Larva gemmiparous.

The first known member of this remarkable family was *Diplosoma rayneri*, described by Dr. J. D. Macdonald in 1859[1] from a specimen obtained at Sydney, Australia. In the account of this new species and genus, Macdonald really gave the most essential characters of the family, but it was Giard who, in 1871,[2] first formally defined the Diplosomidæ. This latter author also added two new genera, *Pseudodidemnum* and *Astellium*, each containing a single species; and in 1883 von Drasche[3] described several additional species belonging to the family, and pointed out the characters and relations of the group more fully and correctly than had previously been done.

The family is evidently of small size, but seems to be widely spread in shallow water. It is more closely related to the Didemnidæ than to any other group of the Ascidiæ Compositæ. Jourdain[4] has recently proposed that these two families should be united under the name Oligosomidæ. This is quite unnecessary, as the two groups are sufficiently separated by the structure of the reproductive organs.

The colony in the Diplosomidæ forms a very delicate incrusting layer, usually attached slightly by the greater part of the lower surface, and easily removed. It never becomes massive, and is always sessile.

Both Giard and von Drasche describe the colony as formed of two thin layers of

[1] *Trans. Linn. Soc. Lond.*, vol. xxxii. p. 373. [2] Recherches sur les Synascidies, *Archives d. Zool. expér.*, p. 654.
[3] Die Synascidien, &c., p. 38.
[4] Sur les Ascidies Composées de la tribu des Diplosomidæ, *Comptes rendus*, t. c., No. 24, p. 1512.