thus rendering the colony thick and massive. In none of the Polystyelidæ have the Ascidiozooids come to be arranged in systems, and no common cloacal cavities have been formed,—the atrial apertures of all the Ascidiozooids open independently on the exterior of the colony. In this respect the colony is in the same stage of differentiation as that reached by most Distomidæ, while the other groups of Compound Ascidians (*e.g.* Botryllidæ, Polyclinidæ, Didemnidæ) have advanced a stage farther by the formation of systems with common cloacal cavities (see Fig. 26, p. 141).

It is possible that the family Botryllidæ may be more closely allied to the Polystyelidæ than I have shown in the table. The line N., in place of springing from the primitive Cynthiidæ, may possibly have been derived from the Polystyelidæ, near the point where *Goodsiria* and *Synstyela* diverged. In that case the evolution of the primitive Botryllidæ would consist in the gradual formation of systems in the colony, and the complete disappearance of all traces of folds in the branchial sac.

The primitive Cynthiidæ at the point M. (table, p. 150), after the separation of *Bathyoncus* and the ancestral Styelinæ, must have acquired compound or branched tentacles, as they were the common ancestors of the Cynthinæ, the Bolteninæ, and the Molgulidæ. At the same time, the folds in the branchial sac became more marked and increased in number. At or about the point O. in the table the important line of descent leading to the family Molgulidæ probably diverged, while the main branch was continued onwards to form the Cynthinæ.

In the ancestral Molgulidæ the branchial sac became still more complicated by the curving of the stigmata and the fine interstigmatic vessels so as to produce a series of more or less perfect spirals. The folds in the branchial sac remained of large size, and the compound tentacles became greatly branched. At the same time the test became prolonged into a number of branched hair-like processes, containing blood-vessels, and probably corresponding to the stolons of the Clavelinidæ. These processes have the power of taking up and attaching sand grains to their surfaces so as to form a sandy investment all over the body.

The remarkable genus *Eugyra* was derived from these ancestral Molgulidæ (see table, p. 150), and has undergone modification and a slight degeneration. The stigmata have become more completely spirally coiled than in any other Molgulid, but the folds in the branchial sac have completely disappeared, while the internal longitudinal bars have been widened and flattened to form ribbon-like bands.

Amongst the species of the more typical Molgulidæ[1] a considerable amount of differentiation has taken place. In some forms (e.g. *Ascopera*, and some species of *Molgula*) the sandy investment and the hair-like processes of the test have been lost, while in others the body has become pedunculated. In some cases (e.g. *Molgula carpenteri*) the stigmata are not curved, and closely resemble those of the family

[1] See H. de Lacaze-Duthiers, *Arch. d. Zool. exper.*, tom. iii., 1874, and tom. vi., 1879.