continuity of the layer distinguishes it from *Chorizocormus*. Alder's *Thylacium variegatum*, on account of its depressed Ascidiozooids, probably belongs to this genus. It is doubtful whether that species is distinct from Giard's species of *Synstyela*. The new Challenger species described below seems to agree well with what is known of this genus, but, as Giard does not give a detailed description, it is possible that his species may be generically distinct, and in that case *Synstyela incrustans* must become the type of a new genus.

As Giard has given neither a formal diagnosis of *Synstyela* nor the materials for forming one, I have drawn up the above generic description from the new species collected during the Challenger Expedition. Alder's description of his *Thylacium variegatum* agrees with the characters I have given, and there is nothing in Giard's few remarks contrary to them, consequently I believe they will prove satisfactory.

The new species *Synstyela incrustans* is almost certainly distinct from those previously described, but, from our imperfect knowledge of Giard's species, it is impossible to give here a tabular representation of the genus. *Synstyela* has a very wide distribution in space. It has been found on the coast of France, in the British Seas, in the Strait of Magellan, and off the Philippine Islands.

Synstyela incrustans, n. sp. (Pl. XLVI. figs. 9–14).

The Colony forms a flat expansion of irregular form, attached by more or less of the lower surface. It is frequently lobed. The upper surface is uneven but smooth. The colour is light grey, with a bluish or pink tint in some places.

The length is 4 cm., the breadth is 2·5 cm., and the thickness is 7 mm.

The Ascidiozooids are large and numerous. They are closely placed, and form slight rounded projections on the surface of the colony. The usual size of the anterior end is 4 mm. or 5 mm. The bodies are not elongated antero-posteriorly, and are not divided into regions. The branchial and atrial apertures are conspicuous, but they are not distinctly lobed.

The Test is firm and tough, but is not massive. The upper surface is stronger and more opaque than the internal part, which is hyaline and semi-transparent in most places. The matrix is delicately fibrillated in some regions. It contains small rounded test cells, but they are not numerous. There are no bladder cells. Vessels are present in the test, but they are not conspicuous. They are very abundant on the spreading edges of the colony, where they terminate in elongated swollen bulbs.

The Mantle is thin and delicate. Its musculature is feebly developed.

The Branchial Sac is large and well developed. It has rudimentary folds. The internal longitudinal bars are numerous and strong. The ordinary transverse vessels are usually wide and all of the same size, but there are also two or three intermediate much