Cellaria australis, MacGillivray (Pl. II. figs. 1–4).

Cellaria fistulosa, var. *australis*, MacGillivray, Zool. of Vict., dec. v. p. 48.
Cellaria australis, MacGillivray, Trans. Roy. Soc. Vict., vol. xxi. p. 93.
Salicornaria clavata, Busk, Zool. Chall. Exp., part xxx. p. 88, pl. xii. fig. 8.
Cellaria fistulosa, var. *australis*, Hincks, Ann. and Mag. Nat. Hist., ser. 5, vol. xiii. p. 368, pl. xiv. fig. 4.

This is a very distinctly marked species, with very characteristic opercula and mandibles, well described by MacGillivray, but Busk seems to have been unaware of his later and fuller descriptions, and only refers to the earlier one.

This, being a larger species than most of the *Cellariæ*, is more favourable for studying in cross section, and some sections prepared rewarded me by showing in the clearest manner the function of what Mr. Busk calls the "foramina" of the operculum. These, instead of being as Busk supposed conical projections, are hollow sockets into which the denticles of the proximal edge of the aperture articulate.

An operculum in transverse section is shown in fig. 2. What Busk calls the granulated band is much thicker than the rest of the operculum, whereas the upper part and the "foramina" are thin.

Having worked out the signification of the lower denticles, I naturally asked, what are we to understand by the upper denticles, which occur in a few species, as *Cellaria rigida*, MacGillivray, &c., but I have not been able as distinctly to follow out the working of these, though no doubt the "branched chitinous support" is connected with them. Thus we have correlated structures, and, seeing that various fossils have these two pairs of teeth, this is of considerable importance. In *Cellaria rigida* the proximal pair of teeth are at a higher level than the distal (see fig. 5). The shape of the cover to the ovicell would seem to be specifically important. From each zoœcial chamber of the *Cellaria* a long tube arises which expands into the chamber above, and from the middle of these tubes there is a connection, of course, through a rosette plate to the zoœcia on each side. In one of the Challenger specimens the connecting chitinous tubes of a new branch follow the lines of the border of the zoœcia transversely across the zoarium forming zigzag lines.

Cellaria rigida, MacGillivray (Pl. II. figs. 5–7).

Cellaria rigida, MacGillivray, Trans. Roy. Soc. Vict., vol. xxi. p. 92, pl. i. figs. 1, 2.; Zool. of Vict., dec. xi. p. 17, pl. 105, fig. 1.
Salicornaria simplex, Busk, Zool. Chall. Exp., part xxx. p. 88, pl. xxxiii. fig. 8.

I have already referred to the shape of the teeth and to the connection from cell to cell when discussing the last species.