Genus *Plexaurella*, Kölliker.

Plexaurella, Kölliker, Icones Histiol., Abth. i. p. 138.

Kölliker established this genus for a number of forms previously placed with *Plexaura*, but in which the structure of the axis differed from that of *Plexaura* in being composed of irregularly deposited layers of horny and calcareous substance. Valenciennes had long since indicated this genus but had given no diagnosis thereof. As Kölliker observes, the genus agrees, with the exception of the structure of the axis, in most particulars with *Plexaura*; it may be observed that in the only species found in the Challenger collection, the affinities to *Plexauroides*, so far as the shape of the spicules is concerned, is very marked, but the stem structure is exactly as described by Kölliker in *Plexaurella*; this stem structure is also to be met with in some species of *Juncella*, viz., *Juncella juncea*, but here the very different characters of the spicules will always serve as a good generic difference.

Plexaurella phillipinensis, n. sp. (Pl. XXXIII. fig. 4).

The only specimen in the collection has been torn from its attachment, and may be the entire colony with the exception of its basal portion; or possibly it may be but a portion of a very much larger mass; the lower parts of the stem and branches are somewhat rubbed and worn.

The colony is a much branched one; the branches arising approximately in the one plane. The portion of the colony preserved forms a fan-shaped mass, about 35 cm. in height, by 50 cm. broad. The diameter of the apparently main stem is 3 mm., that of the larger branches 2 mm., the terminal portions of the smaller ramifications measure from 1 to 1·5 mm. The principal branches arise in an alternate manner, and these give off again and again smaller branches, the ultimate twigs being from 5 to 10 mm. long. There are no traces of any anastomosing of the branches. The basal portions of the stem and branches are flattened, but towards the terminations of the twigs this is less noted. The polyps are completely retractile, and when in a state of repose, sink within cover of the cœnenchyma of the axis; they are scattered irregularly over the whole of the colony, and are about 1 mm. apart; the very small spicules of the bases of the tentacles form in the retracted state of the body a protective operculum.

The cœnenchyma is thin and friable. The foliaceous portions of the club-shaped spicules are short and lobose, giving a roughened granulose appearance to the surface, which is well seen with a low magnifying power.

The main axis is flattened and consists of irregularly concentric layers of calcareous and horny substance, which seem to be more developed on the one half of the axis than on the other. In the smaller branches the axis seems to be entirely horny and flat;