

cupping the place of one of the radiating septa; these are in general well developed, denticulated upon their margins, and extend upon the surface of the transverse diaphragms to the central of the visceral chambers.

Edwards and Haime in the *Polypiers Fossiles*, page 326, have in substance given the above definition of this genus. In some of the species there is a rudimentary columella, and sometimes even in the same species the radiating septa may or may not reach the centre in different individuals.

ZAPHRENTIS PROLIFICA (Billings).

Description.—Corallum simple, turbinate, curved, with a few broad shallow encircling folds. Septal fossette of a pyriform shape, gradually enlarging from the margin towards, but not quite reaching the centre, variable in its position in relation to the curvature of the fossil. Radiating septa in the adult specimens between sixty and seventy-five of the larger size, alternating with a like number of smaller ones, the former in some of the individuals extending to the centre on the bottom of the cup, where they are spirally twisted or irregularly contorted, in other specimens not reaching the centre, which is then occupied by a smooth space or often with a columella elongated in a direction from the septal fossette towards the opposite side. The septa are also sharp-edged for about half the distance from the bottom of the cup to the margin, then become gradually less projecting until at the edge of the cup they are reduced to mere flat rounded ridges. Length from four to five inches or a little more. Width of cup from two inches to two inches and a-half. Depth of cup about one inch.

Very numerous specimens of young individuals of this species one inch and a-half and upwards in length, and with fifty or more principal radiating septa occur along with those full grown. These small ones might perhaps be regarded as constituting distinct species, but when good specimens can be observed they all exhibit the characters which are persistent in the large individuals.

The presence of the columella seems at first sight to be a sufficient ground for placing the individuals in which it occurs in the genus *Lophophyllum* (Edwards and Haime). I have however examined a great number of specimens and have found every gradation between the following characteristics.

1st Specimens with a perfectly smooth space in the bottom of the cup, no columella.