

or the tertiary (Pl. I. fig. 5 a). In some specimens there are fourteen major septa and chambers only, and fourteen pali. In the only very large specimen obtained (Pl. I. fig. 4 a), which is somewhat broken, there appear to have been twenty-four pali, with a corresponding development of the septa, which however are a little irregular. In one young specimen, measuring 12 mm. in height, and 10 mm. in longer diameter of the calicle, there are twelve pali, and the major chambers show evidence of having been twelve originally, but two of them contiguous to one another at one end of the long axis of the calicle have developed additional septa so as to appear as four major chambers; in these, however, pali are wanting opposite the so-called tertiary septa. Two of their septa which have taken upon themselves, by the subdivision, the rank of primary or secondary septa, have nevertheless opposite them still each a palus. As the coral widens in growth, and these new septa of first order assume their full dimensions, no doubt their pali become lost to view, and partly fused with the columella mass, partly incorporated in the growing septa. Two new pali must be developed in front of the two new tertiary septa to make up the fourteen, and in the young specimen now under consideration a trace of one such new palus has commenced to grow in front of one of the four septa. The accompanying diagram will explain the mode of multiplication of the chambers and septa. The major septa are marked α , those of secondary size or the tertiary b , the new major and tertiary septa α' and b' respectively, the pali p , and the

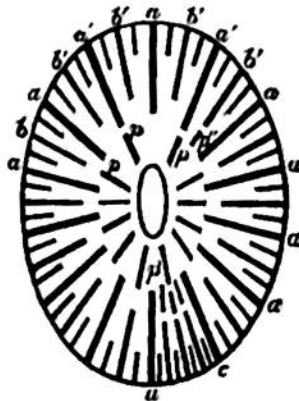


Diagram showing the mode of development of new septa and pali in *Caryophyllia communis*.

new palus p'' . The new chambers develop in this coral in the same manner therefore as in *Flabellum irregulare* as described by Semper,¹ that is to say, the additions to the septa take place in the chambers at the ends of the longer axis of the calicle. It would seem probable that in some instances a pair of extra-major chambers develop, as in the young specimen first described, only at one end of the oval calicle; hence are derived the specimens with fourteen pali. In other instances, probably, a pair of additional

¹ C. Semper, Ueber Generationswechsel bei Steinkorallen und über das M. Edwards' sche Wachsthumsgesetz der Polypen. Zeitsch. für Wiss. Zool., Bd. xxii., 1872, s. 243.