

of directive septa also belong to the six pairs of principal septa. These are easily found as they lie at the opposite ends of the oral fissure, and thereby furnish us a fixed point for the determination of directions. The remaining four pairs of principal septa are distributed in the space in such a way that each two are found right and left from the oral fissure at equal distances from one another and from the directive septa. The six pairs of principal septa form together a regular six-rayed star.

In an Actinia with the first six pairs or the first twelve septa, the space round the œsophagus is divided into twelve radial chambers, of which six lie inside the pairs and six between the adjacent pairs. The former are the "intraseptal" spaces or "inner" spaces, the latter the "interseptal" spaces or "interspaces." Whilst the inner spaces remain unaltered, the interspaces grow, and the accessory septa develop in them in pairs, and in an arrangement which will not undergo any change. This definite arrangement may be shortly characterised as follows:—A pair of septa lie in the middle of each interseptal space: if we term the principal septa of the first order, or shortly, "primary septa," these are the six pairs of septa of the second order, or "secondary" septa. They nearly equal the primary septa in size, and, except in the Sagartidæ, are fused with the œsophagus; they divide the interseptal spaces into three parts: (1) an intraseptal space of the second order, and (2) two interseptal spaces of the second order. Then follow twelve pairs of septa of the third order in the interspaces between the primary and secondary septa, twenty-four pairs of septa of the fourth order in the interseptal spaces so formed, and so on. The septa usually decrease in size, for whilst the first, which arise from the pedal disk and from the wall, are inserted into the oral disk and the œsophagus, as far as the lower margin of the latter, the succeeding pairs gradually extend to a less distance down the œsophagus, then fail to reach it at all, and finally are attached only to the oral disk at a distance from its centre. The same process is repeated at the pedal disk. The older septa project nearly as far as the centre of the pedal disk, the younger only a little way inwards from the periphery. As the size of the septa undergoes very gradual modification, we can merely place them in two categories, "imperfect" septa, which do not reach as far as the œsophagus, and "perfect" septa, which are fastened to the œsophagus. After what has been already said, it is unnecessary to add that all the pairs of secondary septa have longitudinal muscles on the faces which are turned towards one another, and transverse muscles on the faces which are turned away from one another.

Methods of inquiry, differing according to the size of the animal, are to be recommended in order to recognise the above-mentioned conditions. Small specimens may be examined in transverse sections taken through the œsophagus, by which we survey the whole arrangement of the septa at a single glance. Care must be taken, however, that the section actually passes through the œsophagus and not somewhat through the oral disk, which in contracted animals often reaches deep down into the interior. For example, it appears to me not improbable that v. Heider gave too high a number of complete septa in *Sagartia*