opens immediately into the stomach by a single aperture, but just within the aperture the cavity of the lobe is divided into two, and again subdivided into four, and in large *Flabellums*, such as *Flabellum alabastrum*, again into eight. The lobe is similarly subdivided externally by a series of deep fissures, regularly disposed in pairs, in which, before decalcification, lay the calcareous septa.

Between the lobes and between their subdivisions are slit-like openings by which the chambers containing the septa communicate with the stomach cavity.

In all simple Madreporarian corals which I have decalcified, the mass of soft tissues resulting from the operation is divided into twelve primary lobes attached to the stomach. Hence there are in these only twelve pairs of complete mesenteries, and the remaining mesenteries are less and less complete in successive order. In *Actinia* there are many more complete mesenteries than this number.

The muscles of the mesenteries are inserted into the corallum along the lines of junction of the septa to the wall, or between these, and with great firmness, so that when the corallum is broken away small pieces of it hang tenaciously to the muscular shreds. The muscles are always on the sides of the mesenteries next the septa, and the chambers containing septa never contain mesenterial filaments unless when one of these, more than usually large, takes a few coils on the opposite side of the mesentery from that on which lies its main expanse. Towards the bottom of the calicle the muscles, as seen in transverse sections of the hardened coral, shift outwards, to be inserted eventually as long slips into the corallum ; and here the generative organs take the places of the mesenterial filaments.

The muscles are inserted only at the outer margins of the mesenteries to the corallum (unless possibly also to the columella). The muscular fibres are disposed amongst branching offsets of the median mesodermal plates of the mesenteries, which spring from the surfaces of these plates, standing out vertically from them, just as in *Sagartia* as described by Heider.[1]

In *Flabellum alabastrum* each mesentery has a sort of arch of muscular fibres, specially concentrated at its border, near its outer lower margin. Below the arch hang folds of the border of the mesentery thickly set with contorted filaments (Pl. XIV. fig. 11). A corkscrew-like mass of the filaments usually depends just below the muscular arch. Corresponding to the two faces of the twelve primary and secondary septa, twenty-four straight, ridge-like folds hang down the stomach-wall, and are continued below into thick filament-bearing borders. From these ridges spring the lower borders of the primary and secondary mesenteries, and the filaments on the borders are coiled on the faces of these mesenteries which are turned away from the septa. At the top of each stomach-slit, between these twenty-four folds, spring the borders of the tertiary mesenteries, which

[1] A. v. Heider, Sagartia Trogodytes (Gosse), Ein Beitrag zur Anatomie der Actinien Sitztz. der k. Akad. der Wiss. Wien, Bd. lxxv., 1877, s. 41, taf. vi. fig. 43.