tube (Pl. LXI. fig. 1). This is often some little distance in front of the point where the lowest part of the long gullet turns off westwards to enter the great outside coil. The walls of this long digestive tube are tolerably simple and but slightly plicated. For an

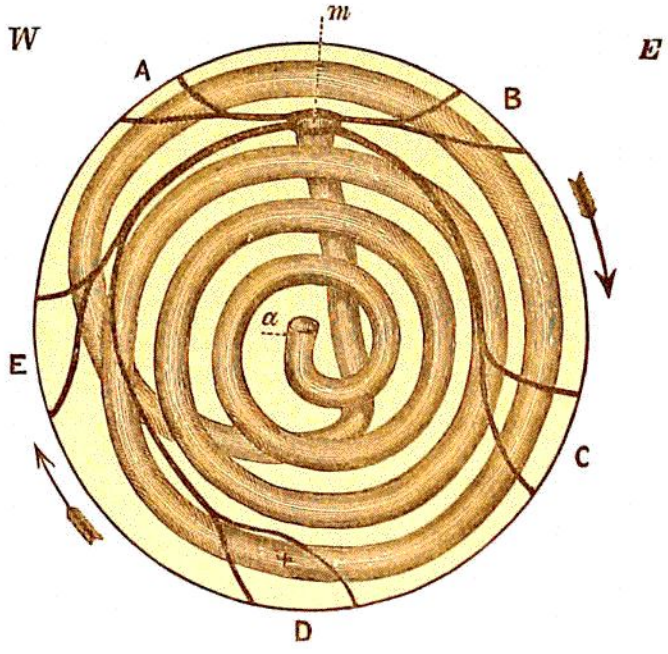

FIG. 3.—Diagram showing the course of the Digestive Tube in an *Actinometra* with Interradial Mouth, as seen from the ventral side.

Letters as in fig. 2. The + on the hinder portion of the outer coil indicates the limit of that part of the gut which corresponds to the entire digestive tube (excepting the rectum) of an endocyclic Crinoid.

extensive secreting surface is amply provided, without the necessity of this further complication, which is so largely developed in the simple spire of the gut in *Promachocrinus*, *Antedon eschrichti*, and *Antedon antarctica*.

C. The Water-Vascular System.

The water-vascular system of a Crinoid consists, like that of the Stellerids, of an oral ring and radial vessels, the former being connected indirectly with the exterior through the intervention of the water-tubes, water-pores, and the body-cavity. Neither the oral ring nor the radial vessels have any ampullæ connected with them; though, as suggested by Ludwig,[1] these are perhaps represented by the small lateral pouches of the radial vessels which are opposite to the tentacular branches, and are crossed by muscle-threads[2] (Pl. LX. fig. 6).

The presence of these tentacular branches is invariably correlated with that of the food-groove. Where this is well marked, and lined by ciliated epithelium with the subjacent ambulacral nerve and blood-vessel, the water-vessels beneath the latter give off their branches to the tentacular groups in the usual regular way (Pl. Vc. fig. 7. Pl. LVII. figs. 1, 3, 4; Pl. LIX. figs. 1, 5; Pl. LX. figs. 1, 2, 6—*tb*; Pl. LXI. figs. 4, 6).

[1] Crinoideen, *loc. cit.*, p. 337.

[2] See also fig. 5 on p. 121, *m'*.