

projecting towards the central cavity, without, however, communicating with it. In *Polyclonia*, on the contrary, there are twelve main branches of the chymiferous system, extending in a direct course towards the eyes, and forming a fork, between the branches of which the eyes are placed (Pl. XIII. *Fig. 2, 7, o o*). With these branches alternate twelve somewhat smaller radiating chymiferous tubes, which are lost in the network of anastomoses occupying the whole field between the main branches. There is, however, a marked difference between these anastomoses. Nearest to the margin, they are very small, and go on increasing towards the forks of the main branches, between the base of which they are largest; while the space nearer the main cavity is occupied by a net-work of large meshes, formed, however, by smaller lobes. The ramifications and anastomoses of the chymiferous tubes, along the margin, are represented magnified in *Fig. 9, a³*, Pl. XIII^a. Repeated injections of this chymiferous system has satisfied me that the main radiating chymiferous tubes, in the direction of the eyes, are afferent vessels, and that the stems, alternating with them, which seem lost in the marginal anastomoses, are recurrent tubes, through which the fluid passing from the main cavity, through the main branches to the periphery, is brought back to the main cavity. I am unable to say whether there is a similar difference of function among the chymiferous tubes of *Rhizostoma*. Occasionally the chymiferous tubes of *Polyclonia* present some irregularity in their course, and the marked arrangement of the adult, just described, is not yet visible in younger specimens (Pl. XIII. *Fig. 5*), in which the anastomoses between the main branches of the chymiferous system are comparatively few.

The main cavity of the body is formed by the combination of the bases of the eight arms arising from the thickened part of the lower floor, which closes the lower side of that cavity. *Fig. 4* of Pl. XIII. shows these relations, *l l, l¹ l¹, l² l²*, and *l³ l³* representing the eight arms which form, respectively, the rounded corners of the quadrangular cavity, *se se* marking the even thickness of the wall above the origin of the arms, and *oa oa* the intervals between two and two arms, corresponding to the sides of the main cavity, upon which open the holes leading into the cavity below the genital pouches, *oc oc*. In this figure the main cavity is seen from above, and its outer walls are cut immediately below the origin of the radiating chymiferous tubes. The lower floor of that cavity is even, and from it rise the walls of the four genital pouches, which project, like four lozenge-shaped sacs, into the main cavity. In this figure, two of the pouches are removed, so that the cavities, *oc oc*, which they cover, and which open outside, are visible; while the two other pouches (*o os, os'*) appear in their natural position. The genital organ proper (*o o*) forms a transverse band of folds across the middle of the pouches which are kept in their respective position by the smooth fold of the pouch itself. one part of which (*os'*) is turned towards the centre of the cavity, while the other