

photograph. It has the form of a slender cup, attached to a broad basal plate, and is 12 cm. long by 4 broad in its upper portion. It is not, however, intact. Since Sir Wyville Thomson speaks of two specimens from this locality, of which the larger was 17 cm. in length, it is evident that the latter is not in the collection before me.

In Wyville Thomson's description, and in fig. 1 on Pl. LXXII., attention is directed to the oblique or transverse ridges projecting on the external surface of the cup and alternating with somewhat broader grooves. These transverse ridges consist almost wholly of a row of closely apposed and externally fused, short tubular stumps. The circular external end measures 4 to 5 mm. in breadth, and is directed radially outwards. In the grooves, on the other hand, there are numerous, irregularly arranged, round or elongated, oval openings of variable size, which lead into more deeply situated ducts.

The internal gastral surface of the cup presents another appearance. Here one observes a number of longitudinal ridges from 2 to 3 mm. in breadth, which project inwards and are separated by deep longitudinal grooves of equal breadth. Since these longitudinal ridges with arched roof extend from the lower blind end of the slender cup-shaped gastral space to the upper, and here and there part, their number gradually increases from below upwards, and in the upper broken end amounts to twenty. Each of these longitudinal ridges consists of two plates, which pass into one another at the free inner edge, and thus enclose an elongated slit-like space. Internally this is shut off from the gastral cavity by the skeletal fold referred to, while it communicates externally with those cavities and clefts which occur at the foot of the external transverse grooves. From the longitudinal furrows, however, which occur on the internal surface of the cup between the gastral ridges, there is a direct communication into the lumen of the tubular stumps which project radially on the external transverse ridges. When this is compared with the structure of the not very remotely allied *Periphragella*, it seems clear that the lateral tubular stumps of the outer transverse ridges, whose cavities communicate directly with the gastral cavity and which project radially outwards, represent the *effluent* lateral tubes of *Periphragella*, and like the large oscular terminal aperture of the whole cup serve for the exit of the water, while the apertures and cleft lying in the external transverse grooves, together with the associated, but internally closed, longitudinal ducts or slits, belong to the *afferent* system.

The dictyonal framework consists of smooth beams enclosing predominantly square or rectangular meshes, without thickening of the nodes of intersection. The freely projecting conuli are on the other hand beset with tubercles and teeth.

In the compact portions of the lattice-work, a few isolated spicules here and there occur, but it is, of course, doubtful whether they really belong to *Lefroyella decora* or are only intrusions. I have, therefore, simply mentioned their occurrence without giving any figure. Besides simple, smooth hexacts of small size and uncinates of medium length, there are scopulæ with four straight, terminally knobbed prongs.