

*Leiothealia nymphæa* (Pl. VII. figs. 1–5).

*Actinia nymphæa*, Drayton, in Dana. Expl. Exp., Zooph., p. 146, pl. iv. fig. 33 (Synopsis, p. 10), 1846.

*Paractis* (?) *nymphæa*, Milne-Edwards, Hist. des Corall., tom. i. p. 252, 1857.

*Sugartia* (?) *nymphæa*, Verrill, Trans. Connect. Acad., vol. i. p. 486, 1871.

Tentacles short, in three rows, body constricted half-way up by a special circular muscle, insertions of the septa shining through the wall as longitudinal lines.

*Habitat.*—Station 149. Christmas Harbour, Kerguelen. January 29, 1874. Depth, 120 fathoms. One specimen.

*Dimensions.*—Height, 1 cm.; breadth of the base, 2 cm.

This small *Actinia*, of which there was only a single specimen, was examined in a strongly contracted condition. The oral disk was completely inverted, and the margin of the peristome drawn over it, so that only a narrow passage was left; at two-thirds of the height the body showed a circular constriction, caused, as we shall see, by a special muscle, which is wanting in most *Actiniæ*.

The surface of the body in *Leiothealia nymphæa* is perfectly smooth, and so thin that the origins of the septa, which number more than a hundred, shine distinctly through it, in the form of white lines. Muscular fibres are present only on the endodermal side, and form a smooth layer, which, from the contraction of the animal, was only slightly pleated, though it was thickened at two places into distinct sphincters. The upper sphincter is the more powerful, and corresponds to the sphincters of other *Actiniæ* in its position, immediately under the margin of the peristome, and in its action, for like them it draws the wall together like a bag; it is a circumscribed muscle, and projects into the stomach as a circular swelling, which is only fastened to the wall by a narrow base, and pierces the origins of the septa. Seen in transverse section (Pl. VII. figs. 2 and 4) a process of the supporting lamella of the wall makes its way into the inside of the swelling, and traverses it nearly to the opposite end; it thus divides the swelling into two parts, the upper being about three times as broad as the lower, which pass into one another at the free end of the process. Unless the section passes through the precise point where the sphincter pierces the septum, each part shows on the surface a layer of epithelium, and inside the repeatedly folded muscular lamella, supported by very fine folds of connective tissue. The folds of connective tissue spring from the axis of connective tissue, and throw out irregularly several lateral branches, all equally covered with muscular fibrillæ. The spaces between the folds of connective tissue are open towards the epithelium, so that the latter passes in between them. The lower ends of the pleatings of the muscle are rarely detached, so as to form flat mesodermal bundles of fibrillæ; this takes place more frequently at the free end of the axis of connective tissue.

The lower circular muscle (figs. 2 and 5, *ms'*) is less highly developed; to the naked eye it shows as a narrow palish-yellow tract, running upwards and downwards; seen