

from 110° to 115° ; lateral rays undulating, forming one with the other an angle of about 170° ; apical ray curved, rarely longer than 0.1 mm. These quadriradiate spicules are connected by intermediate stages with the larger triradiate spicules of the parenchyma, which are furnished also here and there with short apical rays.

Triradiate spicules of the parenchyma.—Of two kinds; larger, sagittal, their basal ray in most cases directed centrifugally, and smaller, either regular or sagittal or irregular, scattered in the parenchyma without any order. *Larger triradiate spicules.*—All rays in the same plane and of the same diameter (0.015 mm.), occasionally rather thicker; basal ray straight, like lateral rays tapering from the base to a sharp point, length 0.38 mm. on the average; lateral rays either straight or more or less curved, often undulating, each forming with basal ray an angle varying from 115° to 125° , average length 0.2 mm. *Smaller triradiate spicules.*—Form variable (Pl. VII. fig. 4d-4d''); length of rays not exceeding 0.075 mm., the proportion between the thickness and the length being 1:10; not numerous.

Dermal triradiate spicules.—Of exactly the same size and form as the larger triradiate spicules of the parenchyma, the only distinction being that the angle between basal and each lateral ray is more constant (120°), and that the lateral rays are usually neither straight nor undulating, but slightly curved.

Colour.—Dirty yellowish.

Habitat.—Station 145, December 27, 1873; lat. $46^{\circ} 40'$ S., long. $37^{\circ} 50'$ E.; off Prince Edward Islands; depth, 150 fathoms.

Leuconia crucifera, n. sp. (Pl. VII. figs. 5a-5d).

This species is represented in the Challenger collection by a single fragment belonging to the inferior part of the animal. The fragment is of compressed form, 10 mm. long, with a maximum diameter of 8 mm. The thickness of the walls is 0.8 mm. The outer surface is bristly, the inner surface slightly roughened by the apical rays of the gastric quadriradiate spicules. These are all more or less cruciform, all the rays lying in the same or almost in the same plane. By this character the species can be very easily distinguished from all other Leuconidæ. There are indeed some forms which, like *Leuconia nivea*, *Leuconia johnstonii*, &c., possess cruciform quadriradiate spicules also; but in these species these are always minute, while here in *Leuconia crucifera*, on the contrary, they are of considerable size.

Leuconia crucifera and *Leucosolenia blanca* are of particular interest as forms inhabiting the greatest depth (450 fathoms) from which Calcareia have been hitherto obtained.

Skeleton.—The skeleton consists of gastric quadriradiate, of parenchymal triradiate, of dermal triradiate, and of stout acerate spicules, piercing the parenchyma obliquely, and projecting with their free end from the outer surface, and of slender acerate spicules, scattered here and there on the outer surface in small bundles.