

an interesting peculiarity in the histological character of the pavement cells of their surface, these cells, as well as the granules of their protoplasm, being here incomparably larger than usual (fig. 8). Of the generative products I found in the specimen only young ova. In its spiculation the species shows a great affinity to *Leucetta clathria* H. (sp.), but the form and dimensions of the spicules of the parenchyma are so very different, that the establishment of a new species is necessary.

*Skeleton*.—The skeleton consists of gastric and parenchymal quadriradiate, of cortical quadriradiate spicules, disposed like those in *Leucetta imperfecta*, and of cortical triradiate spicules.

*Gastric and parenchymal quadriradiate spicules*.—Usually regular; rays smooth, tapering from base to approximately sharp points, facial rays straight, apical ray either straight or undulating, length varying from 0.05 mm. to 0.1 mm., the proportion between the length and the thickness being 10:1. Some of them occasionally become sagittal, the angle between the basal and each of the lateral rays becoming more acute; in the parenchyma such sagittal quadriradiate spicules show an inclination to lose their apical ray.

*Cortical quadriradiate spicules*.—Regular or sagittal, the angle between basal and lateral rays varying from 120° to 112°; all rays smooth, tapering from the base to sharp points, the proportion between the length and the thickness being 10:1; basal and apical rays straight; lateral rays either straight or slightly curved; facial rays rarely longer than 0.8 mm., length of the apical ray inconstant, varying from 0.6 mm. to 2 mm., its free end projecting occasionally from the inner surface.

*Cortical triradiate spicules*.—Regular; rays conical, tapering from base to sharp points, 0.45 mm. long, with a diameter of 0.0375 mm.; near the osculum these triradiate spicules become smaller and sagittally differentiated, adopting the form of the oscular triradiate spicules of *Leucosolenia poterium* (?), *Leuconia dura*, &c.

*Colour*.—Greyish.

*Habitat*.—Off Kerguelen, January 1874; depth, 10 to 100 fathoms.

*Leucetta hæckeliana*, n. sp. (Pl. II. fig. 6; Pl. VIII. figs. 1–6).

This species, which I dedicate to the illustrious author of the Kalkschwämme, shows, like *Leucetta vera*, a very close relation to *Leucetta clathria*, H., but the differences in spiculation are still considerable enough to separate these two forms into different species. The cortical quadriradiate spicules are in *Leucetta hæckeliana* strikingly rare, their apical ray never projects with its free end from the outer surface; the gastric and parenchymal quadriradiate spicules are, although similar in size to those in *Leucetta clathria*, yet of quite different outline, and finally, *Leucetta clathria* was found in the form of a mouthless colony (Kalkschwämme, ii. p. 159), while all the specimens of my *Leucetta hæckeliana* are provided with an osculum, the collar of which possesses its own skeleton, different from those of the cortex and of the parenchyma. Three individuals of this