

are also 0.15 mm. long, but there are, moreover, chiefly on the outer surface, spicules reaching 0.2 mm. in length; in both cases the proportion between the length and the thickness of the rays being 15 : 1, and the rays of rather cylindrical form. According to his theoretical speculations, Hæckel gave to the species in his Monograph another name. We know, however, that the speculations alluded to have no real foundation, and therefore I propose to return to the older specific name of the Sponge in question.

*Colour.*—Dirty yellowish.

*Habitat.*—Station 149, Balfour Bay, Kerguelen Island, January 19, 1874; depth, 20 to 60 fathoms. Station 150, February 2, 1874; lat. 52° 4' S., long. 71° 22' E.; near Heard Island; depth, 150 fathoms; rock.

*Leuconia dura*, n. sp. (Pl. II. fig. 3; Pl. VII. figs. 7a-7a''').

This species is represented in the collection by many colonial and solitary forms from the Bermudas, and by one colonial specimen from Australia. This latter may be seen drawn in its natural size on Pl. II. fig. 3. All the specimens are either bare-mouthed or provided with a collar, and their inner cavity is either still distinguishable, although more or less short and narrow, or reduced (Australian specimen) to a small hollow space just under the osculum. The skeleton consists principally of large and small regular triradiate spicules, the latter showing occasionally the rudiment of the fourth ray (Australian specimen). The measurements of these smaller and larger regular triradiate spicules agree closely with those given by Hæckel for his *Leucetta primigenia*, var. *microraphis* (specimen from Bermudas), and var. *megaraphis* (specimen from Australia). There are, however, two distinctions: in *Leuconia dura*, in company with the regular spicules, are also others, which, although of the same dimensions as the smaller regular triradiate spicules, are yet either sagittally, or sometimes, though not often, irregularly differentiated. These chiefly sagittal spicules are to be found only in the region of the osculum; they prove, consequently, the permanence of the presence of this latter, and this forms the second difference, the varieties of *Leuconia fruticosa* being, according to Hæckel, sometimes furnished with oscula, sometimes mouthless. The spicules in question are represented on Pl. VII. fig. 7; they have, apart from their size, just the same form as the corresponding triradiate spicules of *Leucosolenia poterium* (?), *Leucetta vera*, and *Leucetta hæckeliana*. We learn from this coincidence that the horn-shaped form of spicule is very well adapted for constituting the skeleton of the borders of the osculum or of the membrana oscularis. It is not, however, always the case. The corresponding spicules in *Leuconia fruticosa* just described show no difference in their form from the other spicules of the sponge, and as the regular triradiate spicules are comparatively very constant in their outlines, I think I am right in concluding that their local differentiation into