

*Triradiate spicules of the parenchyma.*—Either quite regular or rather sagittal and irregular; rays straight, tapering from the base to sharp points; surface more or less smooth; the proportion between the length and thickness 8:1; the length, 0·6–1 mm.

*Cortical triradiate spicules.*—Sagittal; all rays lying in the same plane, tapering from the base to a more or less rounded end, usually of the same thickness, the proportion between this latter and the length varying from 10:1 to 16:1; basal ray straight, sometimes rather thinner than lateral rays, forming with each of these latter an angle of 115°; lateral rays either straight or slightly curved forwards, 0·325–0·5 mm. long, usually somewhat shorter than basal ray, often of the same length, sometimes even rather longer. In the wall of the collar these triradiate spicules become smaller, their rays being rarely longer than 0·15 mm., with a diameter of 0·0125 mm., and show a regular disposition, their basal ray being directed towards the closed end of the animal.

*Stout acerate spicules.*—Sparsely scattered in the wall perpendicularly to the outer surface, often projecting from it; spindle-shaped, tapering from the centre to a sharp point at each side, either straight or slightly curved; rarely exceeding 0·75 mm. in length and 0·04 mm. in diameter.

*Slender acerate spicules* of the same shape as and disposed similarly to the last-mentioned form, rarely longer than 0·3 mm. with a diameter of 0·0025 mm.

*Acerate spicules of the collar* straight or curved, either sharply or bluntly pointed; 0·5–1 mm. long, and 0·018 mm. in diameter.

*Colour.*—Pale yellowish.

*Habitat.*—Station 163A, June 3, 1874; off Port Jackson, Australia; depth, 30 to 35 fathoms; rock.

*Leuconia fruticosa*, Hæckel, sp. (Pl. II. fig. 4).

*Sycothamnus fruticosus*, H., Prodrömus, p. 240.

*Lipostomella clausa*, H., Prodrömus, p. 249.

*Leucetta primigenia*, H., Kalkschwämme, Bd. ii. p. 118.

This species is represented in the Challenger collection by three specimens of somewhat Asconoid aspect, owing to the considerable reduction of the inner cavity (Pl. II. fig. 4). Each specimen is provided with an osculum, surrounded in all three cases with a collar, while all the specimens examined by Prof. Hæckel were either mouthless or bare-mouthed. Two specimens are pear-shaped, the larger attaining a length of 23 mm. and a diameter of 19 mm.; the third is of quite irregular outline, rather resembling an incrustation, the thickness of the body exceeding, however, 5 mm. in its narrowest part. The measurements agree closely with those given by Hæckel for his variety *isoraphis*. In two specimens (from Balfour Bay) the triradiate spicules are all of the same size (0·15 mm. long), the proportion between the length and the thickness of the rays being 12:1, and the rays of conical form. In the specimen from Station 150 the majority of the spicules