

form in question from *Ascetta primordialis*, H., Mr. Ridley states—1, that the minimum diameter of its largest spicule-rays exceeds 0·02 mm.; and 2, that it possesses a special dermal set of triradiate spicules, considerably larger than those subjacent to them.

Now I have numerous specimens from the Australian coast, all of which, presenting the auloplegma-form and being provided with pseudostomata, differ from *Clathrina poterium*, R., only in one important character, viz., the presence in the membrane of the pseudostome of sagittal, occasionally irregular triradiate, spicules, of the size of the smaller subdermal spicules, and just of the same form as the oscular triradiate spicules in my *Leuconia dura* (Pl. VII. fig. 7). If my supposition be true, and if such triradiates were wanting in the Australian specimens examined by Prof. Hæckel, and in the American ones described by Mr. Ridley—all these specimens having always presented the auloplegma-form—only for the reason that the delicate pseudostomial membrane was torn off in the dredging,—the species *Leucosolenia poterium* would receive still sharper determination, both by its constancy in form (auloplegma) and by the presence of peculiar triradiate spicules in the peristomial membrane. This latter character I consider to be particularly important, for the triradiate spicules in question I find in all the specimens I have of my conjectural *Leucosolenia poterium*, while with respect to the special dermal set of larger triradiate spicules, these specimens present a series of transition-forms, beginning with those whose outer spicules are almost of the same size as those of the interior of the colony, and ending with forms whose dermal triradiate spicules are, each ray, 0·3 mm. long, and 0·035 mm. in diameter; in all these cases the rays of the subdermal spicules, in accordance with Prof. Hæckel's statements, being 0·12 to 0·18 mm. long, and 0·006 to 0·01 thick. Some subdermal spicules show an incipient fourth ray.

I found in the specimens neither ova nor larvæ, and the spermospores, sparsely scattered here and there, were the only generative elements I observed in the examination (Pl. III. figs. 1 and 2).

*Colour*.—White and yellowish.

*Habitat*.—Station 163, April 4, 1874; lat., 36° 56' S., long., 150° 30' E.; off Two-fold Bay, Australia; depth, 120 fathoms.

*Leucosolenia lamarckii*, Hæckel, sp.

*Ascaltis lamarckii*, Hæckel, Kalkschwämme, Bd. ii. p. 60.

The two specimens of this species were found attached side by side to an alga, both presenting the auloplegma-form, and each being provided with a pseudostome. The larger specimen has rounded angles, the smaller is an oval cylinder; the longitudinal axis of the larger attains a length of 9 mm., that of the smaller one does not exceed 5 mm. The measurements of the spicules agree with those of Hæckel for his *Ascaltis lamarckii*, var. *agassizii*; all the spicules, however—not only the larger triradiate—showing a