

with the aid of this little organ. It is now necessary to abandon this idea, for there is no evidence that *Spirula* fixes itself by its aboral extremity.

There is besides nothing in the fossa and its papilla which recalls the structure of an acetabulum or sucker, especially there are no retractile muscles at the bottom of the cavity. Nor is this fossa a mucous pore, as other authors have supposed; there is no trace of special glandular apparatus. Its functions still remain very problematical. One might perhaps suppose that the papilla is a protective prominence; we know that owing to the rapid swimming of Cephalopods, being retrograde, their aboral extremity is much exposed. And *Spirula*, having a well-developed funnel, is organised for swimming backwards, like the other Dibranchiates, and its terminal papilla has

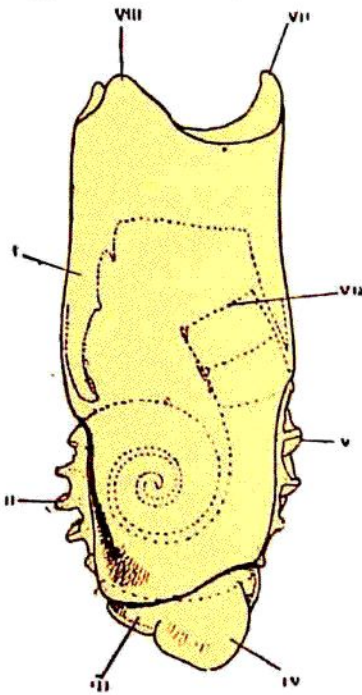


FIG. J.—Left view of *Spirula reticulata* (the internal part of the shell and the visceral sac represented by broken lines); $\times 2$. i, pallial cavity; ii, ventral external part of the shell; iii, terminal disk; iv, fin; v, dorsal external part of the shell; vi, last septum; vii, dorsal projection of the mantle edge; viii, ventro-lateral projection of the mantle edge.

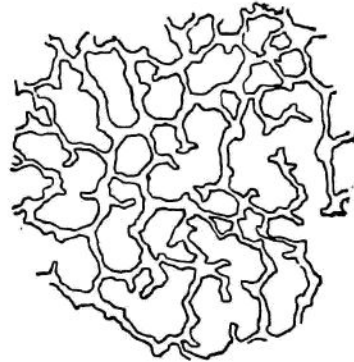


FIG. K.—Part of the external face of the shell of *Spirula*; $\times 90$.

precisely the situation of an organ of protection for the aboral extremity. In the majority of Decapods this situation is occupied by the point of the rostrum. Still, on the hypothesis that in the living animal this papilla would be covered by a small external shell, it does not appear that one could see in this the homologue of the rostrum of the Decapods, since the latter is formed in the shell sac.

c. *Shell*.—The shell of *Spirula*, being very common, can be easily studied, and is well known to zoologists. Therefore it is not proposed to dwell on this subject, except in so far as concerns the relations of the shell to the animal.

In the adult it is as we know multicellular, siphonated, and rolled like a spiral, in a