from the centre of the Pacific Ocean, on the equator. It is a curious fact that not more than one of the species was obtained at any single locality. The only two from the same neighbourhood are *Culeolus recumbens* and *Culeolus perlucidus*, which were obtained at consecutive Stations (Nos. 146 and 147) in the Southern Ocean.[1] The first of these stations is the most southern locality for the genus, while Station 44, the locality for *Culeolus perlatus*, is the most northern extension.

Culeolus wyville-thomsoni, which is by far the least deep form of the genus, has a thicker and more ordinary looking test than any of the other species. Otherwise the depth seems to have no effect, the two deepest forms, *Culeolus murrayi* and *Culeolus moseleyi*, having thick, opaque tests, while much the most fragile and transparent form is *Culeolus perlucidus*, from the intermediate depth of 1600 fathoms.

It seems impossible to establish any relation between the nature of the bottom and the occurrence of this genus. Three of the localities are marked globigerina ooze. Two of these, Stations 146 and 147, are very pure and typical examples of this deposit, while the third, Station 271, has a considerable admixture of Radiolarians and Diatoms. Of the three remaining localities, one, Station 241, is a red clay; another, Station 170, is a volcanic deposit, composed of fragments of rock and pumice, with a little mud; while the last, Station 44, is a blue mud, formed of continental débris.

The most important morphological peculiarity is undoubtedly the very remarkable condition of the branchial sac, which is found in all the species of *Culeolus* (*e.g.*, Pl. VIII. fig. 3), in *Fungulus cinereus* (Pl. XIII. fig. 9), and in the curious little species *Bathyoncus mirabilis* (Pl. XXIV. fig. 9.) one of the Styelinæ, but also a deep-water form. It is quite distinct from the branchial sac in any other known Simple Ascidians, and it is interesting to find it present in a member of a different sub-family. This peculiar and simple structure, in which stigmata are apparently not formed, in consequence of the suppression of the fine interstigmatic vessels, at first naturally suggests the simple mesh-work found in *Pyrosoma;* but I am inclined to believe that the true structure of the sac in that genus is a double row of laterally placed stigmata, running transversely in place of longitudinally, and crossed at right angles by the internal longitudinal bars. In this case the branchial sac of *Pyrosoma* shows a simplified state of the condition found in *Boltenia elegans*,[2] where the stigmata are transverse (Pl. VII. fig. 2.), and is entirely different from the branchial sac of *Culeolus*. Consequently, I am not of opinion that the simple form of sac seen in *Culeolus*, *Fungulus* and *Bathyoncus* is a primitive form which has survived, but think, on the contrary, that it is an after modification of a more complicated type, which has probably taken place independently in the Bolteninæ and Styelinæ, and after the separation of these two groups by the development of compound tentacles

[1] And *Culeolus murrayi*, and the new species from Station 241.

[2] I very much doubt even this being the survival of a primitive character, as *Boltenia* is certainly a highly modified form.