

make it brittle. In certain genera of the LITUOLINÆ the visible test or skeleton is supplemented and strengthened by the extension of the walls into the interior, in the form of irregular ramifying secondary septa, constructed like the remainder of the test of cemented sand-grains. This subdivision of the chamber-cavities is characteristic of the genera *Lituola*, *Haplostiche*, and *Bdelloidina*.

Amongst the TROCHAMMININÆ a very different rule prevails. The typical test is composed of exceedingly fine sand with an excess of cement; and the walls are thin, well finished, and smooth externally. Sometimes amongst the larger species a few projecting sponge-spicules mar the otherwise even surface, but more commonly the test is perfectly smooth and glossy, and, unlike that of the Lituoline forms, might be spoken of with propriety as a "shell." The most important divergence from the typical structure occurs in the case of certain *Trochamminæ* which inhabit brackish water. In estuarine pools, and other localities where the proportion of saline constituents in the water is less than in the open sea, the tests of the *Trochamminæ* become less calcareous, and this diminution may continue until the investment is little more than a chitinous envelope, so thin and flexible that it collapses on being taken out of fluid and allowed to dry.

Of the structure of the ENDOTHYRINÆ it is necessary to speak with considerable caution, inasmuch as the Sub-family contains none but fossil species, and they are for the most part only found in the older calcareous rocks. So far as can be made out, the test, though more or less distinctly arenaceous, contains a much larger proportion of calcareous cement than is noticed in either of the Sub-families previously described; and a certain limited number of species appear to have perforated walls. The shell is generally thin, but in rare instances the inner surface is more or less cancellated.

In the Sub-family LOFTUSINÆ the test is characterised by its great thickness and its cancellated structure. Of the three genera which it includes, two are known only by fossil specimens, and so far as they are concerned the chemical composition of the living tests cannot be stated with certainty; the third, *Cyclammina*, is constructed of fine siliceous sand, cemented by means of a compound containing a large proportion of peroxide of iron. But the conspicuous feature of the entire Sub-family is not so much the chemical nature of the investment as its structural peculiarity, in that it exemplifies the fullest development of what is known as the labyrinthic or cancellated variety of shell-structure.¹

¹ I am well aware, of course, that the Rhizopodal nature of *Parkeria* and even of *Loftusia* has been called in question; but have seen no evidence which, so far as I can judge, contravenes in any way the general accuracy of the observations and conclusions set forth in the original description of these genera. With regard to *Loftusia*, the minute structure is that of *Cyclammina*, the contour that of *Alveolina*, and I am persuaded that but for its comparatively large size, its foraminiferal character would never have been demurred to. Prof. P. Martin Duncan's researches on the *Syringosphaeridæ*, a group of fossils closely allied to *Parkeria*, tend to confirm the views originally expressed as to its zoological position, and the occurrence of a porcellanous isomorph, in *Keramosphæra*, has an interesting bearing in the same direction. Finally, since the present sheets have been in the hands of the printer, the discovery in the living condition of *Syringammina*, a well-characterised Rhizopod, with arenaceous test similar in form and dimensions to *Parkeria*, and exhibiting structural features in many ways analogous, helps to remove any lingering doubt on the subject.