

The aperture in its simplest form is a circular orifice or perforation at the anterior extremity of the shell, either opening directly into the rounded cavity or body of the test, or at the end of an extended tubular neck; but in a large section of the genus the neck is inverted and the external orifice opens into a tube which projects far into the interior of the shell; and in certain comparatively rare instances both the extended neck and the internal tube are present in the same specimen. These three conditions are known as the ectosolenian, entosolenian, and ecto-entosolenian varieties of aperture.

The external orifice, especially in the entosolenian varieties of *Lagena*, assumes very diverse characters, some idea of which, as well as of the form of the internal tube, may be gained from the annexed woodcuts (fig. 11). I am indebted to my friend Mr. Joseph Wright, F.G.S., of Belfast, for the specimens from which these outlines have been drawn. They were selected from material dredged within a limited area and at the same depth of water (Dublin Bay, 45 fathoms), and, so far as can be ascertained, under identical external conditions, yet they furnish examples of almost every form of mouth known amongst the vitreous types of Foraminifera.

The genus likewise presents a greater variety of surface-ornament than is met with in any other section of the same class of organisms. In a large number of forms the shell-wall is smooth externally, and though its substance is traversed by minute pseudopodial canals, they are as a rule invisible under ordinary magnifying powers, except in thin sections of the test. One or two species exhibit perforations which are of larger size and sometimes conspicuous externally, but these are exceptional. The decorated varieties have been roughly sorted according to the nature of the superficial ornament into three groups, namely—(1) *Asperæ*, (2) *Striatæ* or *Costatæ*, and (3) *Reticulatæ*. The first section comprises those forms in which the surface of the test is rugose, hispid, spinous, or beset with exogenous beads or tubercles; the second embraces those with striate, costate, alate, or fluted exterior; the third those in which the ornament consists of an arrangement of reticulated lines, whether regularly or irregularly disposed. Such a classification is of little real service to the systematist, for not unfrequently two or three sorts of decoration are found in a single specimen.

The elongated tubular neck is often ornamented quite independently of the body of the shell, the exogenous growths taking the form of raised annular or spiral bands, or of longitudinal wings or costæ. Ornament of this sort is not confined to particular species, but is found from time to time in many of the ectosolenian forms, and is also occasionally met with in the allied genus *Nodosaria*.

The arrangement of a group of organisms, the essential characters of which are so simple, and the minuter features so infinitely variable, is beset with difficulties. Two methods of subdivision have been suggested, both of them based upon the nature of the aperture. In that proposed by Williamson the genus is divided into *Lagenæ* proper, and *Entosoleniæ*, the distinction being based upon the absence or presence of an internal tube.