

Family VII. LAGENIDÆ.

The LAGENIDÆ form an extensive family of vitreous Foraminifera, characterised primarily by the calcareous and finely perforated nature of the test, and its terminal aperture.

In the young condition the test is thin and transparent; but in mature specimens it is more commonly thickened by the continued deposit of calcareous shell-substance, either evenly over the whole surface, or in the form of exogenous growths, such as tubercles, spines, costæ, or reticulated lines.

The test is either monothalamous or polythalamous; when monothalamous it forms a simple chamber with a central orifice, when polythalamous it consists of a number of similar chambers or segments, joined one to the other in single series, usually in such a manner that the anterior wall of the first segment forms the posterior wall of the second, and so on.

The characters of the aperture vary in the several genera, but its typical aspect may be said to be that of a rounded orifice, either with an everted edge or divided at the margin by radiating fissures. In some genera—frequently in *Lagena* and *Nodosaria*, almost invariably in *Uvigerina*—the aperture is situated in a more or less extended tubular neck, terminating in a phialine lip.

The primitive or monothalamous condition of the test is exemplified in the genus *Lagena*, which consists typically of a single rounded or compressed chamber. A number of rounded *Lagena*-like chambers, joined end to end in a straight or curved line, form the test of the genus *Nodosaria*; and a straight test, similarly constructed, but of flattened segments compactly fitted together, that of *Lingulina*. *Frondicularia* exhibits similar features to the latter, but the shell is still more flattened, and the successive segments are embracing or equitant. The curved *Nodosariæ* with central aperture, pass by insensible gradations into the somewhat shorter forms with marginal orifice which compose the genus *Marginalina*; and these into the corresponding flattened varieties which constitute *Vaginulina*. In *Vaginulina* the test is more or less curved, and the segments are obliquely set: the increased obliquity of the early chambers leads to the production of the partially spiral test of the crosier-shaped modifications of *Cristellaria*, and these in turn to the typical or helicoid forms of that genus. There remain two other subordinate genera belonging to this series, namely, *Rhabdognium*, the shell of which differs from that of the true *Nodosariæ* in its trilateral or quadrilateral contour and angular margins; and *Rimulina*, a subtype of *Vaginulina*, distinguished chiefly by the nature of its aperture.

In *Cristellaria* the convolutions are equilateral, and disposed in one plane; but there are other groups in which the chambers, though more or less spiral, are arranged round an elongated axis. Of these the genus *Polymorphina* comprises the less regular forms, and *Uvigerina* those which are more definitely spiral, the distinction between the two depending partly upon the characters of their respective apertures.