

sides are equally or unequally convex ; in others, again, both are complanate or slightly concave ; and in some the superior face is flat and the inferior convex. These conditions are variably represented in the four genera under consideration.

The annexed Table, in which a number of species from each generic group are cast into parallel columns, is intended to illustrate broadly the isomorphism which has been described. It serves also to show the general contour of test most prevalent in the different genera. For example, it indicates that *Discorbina* is rich in forms with convex or conical superior face, whilst it has but few that are convex and none that are conical on the inferior side, and no evolute or wild-growing adherent species ; that *Planorbulina*, on the other hand, has scarcely any varieties with the superior side convex or conical ; that *Pulvinulina* has nothing corresponding to the complanate or bilaterally symmetrical modifications of the other genera ; and that *Rotalia*, with its fewer species, is almost entirely wanting in evolute, adherent, and wild-growing forms. Two lines have been added to the Table to show that the parallelism extends to other particulars, such as the external limbation of the sutures, and the extension of the margin of the test into radial points or spines. The scheme might be extended in many ways. An additional column might be assigned to the genus *Cymbalopora*, though the number of species is comparatively small and their range of variation correspondingly limited, and an interesting collateral series might also be drawn from the genus *Globigerina* ; but the object of the Table is sufficiently attained without further expansion.

It would be manifestly impossible to frame zoological descriptions based upon the conspicuous features of the test that would avail to separate genera constructed on lines so nearly identical ; and it is from characters other than those derived from the form and mode of combination of the segments that means of distinction are to be sought. Such characters do exist, though they are often ill-defined and always variable. For example, the genus *Discorbina* may pretty constantly be recognised by the presence, in one form or other, of certain projections from the inner margins of the segments on the inferior side, known as "umbilical lobes," more fully described on a later page ; or, when these are not apparent, by a surface-ornament of radiating costæ or lines of closely-set granules. The *Planorbulinæ*, of all sections of the group, are known by their coarsely porous thick-walled tests, and a tendency to produce lipped apertures, the orifice of the

*superior* to a surface which in the living creature is so obviously *inferior*, I have not thought it desirable to disturb the general application of these terms to meet so exceptional a case."—Brit. Rec. Foram., Introd., pp. xvi, xvii.

This rule is by no means free from objection ; but perhaps it would be impossible to devise one in all respects satisfactory. The employment of the terms in a manner equally available for the elongate spiral types, such as *Bulimina* and *Textularia*, and moniliform shells like the *Nodosariæ*, would have been in many ways preferable. These latter forms are always represented pictorially with the primordial segment at the base and the growing-point at the summit ; and by Williamson and others the terms *posterior* and *anterior* are employed for them respectively ; so that *posterior* becomes the equivalent of *superior* and *anterior* of *inferior*, which is somewhat anomalous. In a large number of cases the words *spiral* and *umbilical* may properly be used, as an alternative, for the two aspects of the Rotaline shell, but they are not quite uniformly applicable.