

Pulvinulina partschiana represent only the extreme development in two opposite directions of an unbroken series of which that species occupies the central position. The sequence of minute morphological changes which the series reveals has been indicated with more or less detail by the authors already referred to; and, though the Challenger collections contribute not a little to our knowledge of the subject, it is scarcely needful to repeat with greater minuteness what has already been clearly and effectively stated.¹

With few exceptions, the shells of the *Pulvinulinæ* are constructed on the Rotaliform plan, but they assume every variety of contour, from the conical, with flat inferior face (*Pulvinulina procera*), to the reverse condition, in which the superior face is flat and the inferior convex or conical (*Pulvinulina micheliniana*); the intermediate forms being more or less biconvex (*Pulvinulina repanda*). A few of the weaker modifications become evolute and present a thin outspread shell (*Pulvinulina pauperata*). The shape of the test is further diversified by the greater or less rapidity of the progressive increase of the size of the chambers, which determines its relatively circular (*Pulvinulina karsteni*) or oblong (*Pulvinulina auricula*) peripheral outline. The umbilicus is either closed by the meeting of the inner margins of the chambers (*Pulvinulina repanda*), or deeply sunk (*Pulvinulina micheliniana*), or the cavity is filled up with exogenous deposit (*Pulvinulina elegans*). The shell-wall is very finely porous, the tubulation being more minute and delicate than in any of the allied Rotaline genera. The septal walls are always single, and there is no evidence of even a rudimentary canal system. The exterior of the test is usually smooth; occasionally it is hispid, granular, or rugose, or beset with raised beads or tubercles; but for the most part any exogenous deposit takes the form of external thickening or limbation of the sutures and chamber-margins, especially on the inferior side of the test.

Parker and Jones divide the genus into a number of subordinate groups, based chiefly upon the relative prominence and degree of development of the various features above enumerated, taking into account also the bathymetric range of the constituent species. The five divisions they propose are typified by *Pulvinulina repanda*, *Pulvinulina auricula*, *Pulvinulina menardii*, *Pulvinulina schreibersii*, and *Pulvinulina elegans* respectively. The details of the classification are open to some objections, but on the whole it affords as convenient a framework as can be devised for the arrangement of a long and otherwise unmanageable series of forms. According to this scheme, the recent species described in the present Report are apportioned as follows:—The depths, which are quoted from Parker and Jones's synopsis, require considerable revision.

I. "The type or *repanda* group; 10–100 fathoms."

Pulvinulina repanda, *P. concamerata*, *P. punctulata*, *P. concentrica*,
P. vermiculata, and *P. dispansa*.

¹ Parker and Jones, *Phil. Trans.*, vol. clv. p. 390.—Carpenter, *Introd. Foram.*, p. 210.