

GERININÆ, and a good deal might be said in favour of this view ; but on the whole its most natural position appears to be in the Rotaline series, in the immediate vicinity either of *Patellina* or of *Planorbulina*. Again, the genus *Rotalia* has been removed by Moebius from the other Rotaline genera, and classed with *Operculina*, *Heterostegina*, and their allies, on account of the complicated canal system with which the more highly developed species are endowed. It must, however, be borne in mind that it is only a portion of the genus that is so characterised ; that the structure of some of the smaller species is as simple as the feeblest *Discorbinae*, and that of the majority only so far advanced as to have double septal-walls ; whilst, on the other hand, certain allied genera, such as *Tinoporus* and *Carpenteria*, exhibit to a greater or less degree the same tendency to produce an interseptal skeleton with its almost invariable accompaniment of ramifying canals. The presence or absence of a canal system, though important from a structural point of view, is not a character upon which a primary distinction of this sort can be founded.

Sub-family I. *Spirillinæ*.

Spirillina, Ehrenberg.

Spirillina, Ehrenberg [1841], Parker and Jones, Williamson, Carpenter, Gümbel, Brady, Kübler and Zwingli, Terquem, Siddall, Berthelin, Moebius.

Operculina, pars, Reuss [1849].

Cornuspira, pars, Schultze [1854].

Cyclolina, Egger [1857].

The essential characters of the genus *Spirillina* may be summed up in few words. The test consists typically of a non-septate tube coiled symmetrically on itself on one plane ; the walls are hyaline and perforate, and the open end of the tube serves as the aperture. The deviations from the normal plan of growth are few and insignificant, and seldom amount to more than a certain degree of asymmetry in the form and disposition of the coils. The shell is typically free, in rare instances parasitic. The minor characters on which the specific or varietal subdivision of the genus is founded are derived mainly from the sectional contour of the tube and the condition of the exterior of the test, with respect to surface-ornament, sutural limbation, and the like.

The genus *Spirillina* is isomorphous with *Cornuspira* and *Ammodiscus*, the three types occupying analogous positions in the calcareous and perforate, the calcareous and imperforate, and the arenaceous groups of Foraminifera.

The *Spirillinæ* are for the most part of minute dimensions. They find a home in every part of the world, preferring comparatively shallow, muddy sea-bottoms. They are seldom met with in the fossil state ; nor, as far as at present known, do they occur in older formations than those of the Miocene period.