

taper a little towards the extremity, or are club-shaped, with the broad end outwards; occasionally they assume less regular forms and become variously branched and subdivided. They generally spring from near the peripheral edge of the test, but this is by no means a constant rule, and specimens are met with in which they radiate from almost every portion of the surface.

The exterior of the test yields but little information as to its internal structure. Sections, however, show that it is composed of three or four convolutions of an inequilateral spire, each circuit consisting of a relatively large number of chambers. The convolutions are non-embracing, and the spire is arranged in the form of a depressed cone. Except a portion of the final convolution, the whole is encased in a thick deposit of shell-substance, which not only fills the umbilical hollow and forms a convex layer on both faces, but produces also the marginal spines. This deposit, which is in fact the "supplemental skeleton," is traversed by a complicated system of ramifying canals, the open ends of which are seen externally in the form of large superficial pores. The aperture consists of a row of small rounded orifices along the inner margin of the final segment.

The Challenger collections add but little to our knowledge of the distribution of the species. It occurs in material dredged at eight Stations in various parts of the East Indian Archipelago. One of these, off Amboyna, has a depth of 1425 fathoms; the others range from 6 to 155 fathoms, and represent more nearly its normal habitat.

D'Orbigny, Parker and Jones, and Carpenter all agree that *Calcarina spengleri* is identical with the *Siderolites calcitrapoides* of Lamarck, so that its earliest appearance, geologically speaking, must be placed at least as far back as the Chalk of Maestricht. It occurs in the Eocene and Miocene of several parts of Europe; but owing to the confusion of nomenclature it is difficult to distinguish this from many of the allied species enumerated in the published fauna-lists of the Tertiary formations.

*Calcarina hispida*, H. B. Brady (Pl. CVIII. figs. 8, 9).

*Calcarina hispida*, Brady, 1876, Proc. R. Irish Acad., ser. 2, vol. ii. p. 590.

„ *calcar*, var. *hispida*, Carter, 1880, Ann. and Mag. Nat. Hist., ser. 5, vol. v. p. 453.

The present variety displays the same general structure as *Calcarina spengleri*, but the test is seldom quite so large. The entire surface is hispid or beset with short blunt spines in addition to the larger radial processes. It is well figured by Carpenter from a very young specimen (Introd. Foram., pl. xiv. figs. 6, 7). Egger gives a drawing of a relatively minute Rotalian shell, with precisely similar condition of surface, under the name *Rosalina horrida* (Neues Jahrb. für Min., &c., 1857, p. 278, pl. viii. figs. 14-16): and it is possible that this, which is taken from a Miocene fossil, may also represent the same form at a very early stage of growth.