

If this view as to the essential characters of the genus *Calcarina* be accepted, it becomes obvious, as already suggested, that such forms as the *Calcarina calcar* and *Calcarina pulchella* of d'Orbigny must be transferred to the true *Rotaliæ*, notwithstanding the ray-like peripheral extensions of the test; inasmuch as they have the simple slit-like aperture and the comparative absence of supplemental skeleton which characterises the latter genus.

In the living condition *Calcarina* is common in the seas of tropical latitudes, though somewhat local in its distribution; it is less common in the warmer regions of the temperate zone, and is not found further north than the Mediterranean and the Adriatic. It attains its best development at depths of less than 100 fathoms. As a fossil its earliest appearance is probably in the Chalk of the south-east of England (Jones); it is abundant in the Chalk of Maestricht, and the specimens are of fine dimensions. It occurs in the Eocene of the Paris Basin, in the Miocene both of Europe and America, and probably also in the later deposits.

Calcarina spengleri, Linné, sp. (Pl. CVIII. figs. 5, 7).

"Ammonshorn," Spengler, 1781, Danske Skriften, vol. i. p. 379, pl. ii. fig. 9, *a.b.c.*

Nautilus spengleri, Linné, 1788, Syst. Nat., 13th (Gmelin's) ed., p. 3371, No. 10.

Siderolites calcitrapoides, Lamarck, 1801, Syst. des Anim. s. Vert., p. 376;—1816, Tableau Encycl. et Méth., pl. cccclxx. fig. 4, *a.-k.*

Nautilus spengleri, Fichtel and Moll, 1803, Test. Micr., p. 84, pls. xiv. xv. (in part).

Calcarina spengleri, d'Orbigny, 1826, Ann. Sci. Nat., vol. vii. p. 276, No. 4.

" " Carpenter, 1860, Phil. Trans., p. 548, pls. xix., xx.;—1862, Introd. Foram., p. 216, pl. xiv.

" *calcitrapoides*, Reuss, 1861, Sitzungsab. d. k. Ak. Wiss. Wien, vol. xlv. p. 315, pl. iv. figs. 1-4, 6.

The *Nautilus spengleri* of Linné and Gmelin is based upon drawings accompanying a paper by Lorentz Spengler in the first volume of the "Danish Transactions." Spengler's specimens were brought from Amboyna, and his figures represent somewhat roughly, but unmistakably, the large well-marked variety which embodies the typical characters of the genus *Calcarina*. Similar but less regular forms were subsequently figured by Schroeter,¹ from specimens procured from the Adriatic; and the type was further illustrated by Fichtel and Moll a few years later. In modern times, the external characters of the organism and its internal structure have been minutely described by Dr. Carpenter.

Typically the test of *Calcarina spengleri* takes the form of a lenticular disk with radiating marginal spines; the two sides are nearly equally convex, and the surface is generally studded with slightly raised tubercles of solid semi-transparent shell-substance. The spines, which vary greatly in number, are generally straight and cylindrical, and either

¹ Neue Litteratur und Beiträge zur Kenntniss der Naturgeschichte, sonderlich der Conchylien und der Steine, 1784, p. 307, figs. 3-6.