

*Cristellaria italica*, and in other cases acutely angular or carinate, as in *Cristellaria variabilis*.

The aperture is either terminal and marginal, or situated in the peripheral angle of the final segment. It consists sometimes of a circular opening with the rim divided by radiating fissures; sometimes of a simple orifice, either round, oval, angular, or slit-like, with or without a radiate corona of embossed or depressed lines. D'Orbigny's division of the group into two genera, *Cristellaria* and *Robulina*, was based solely on the nature of the orifice, whether rounded or slit-shaped, a feature altogether too uncertain and variable to be of any service to the systematist.

The immediate allies of *Cristellaria* are *Vaginulina* and *Marginulina*. No hard lines of demarcation can be drawn between the three generic groups; but, broadly speaking, it may be said that *Cristellaria* differs from *Vaginulina* in the invariably spiral arrangement of the earlier chambers, and from *Marginulina* in its compressed contour—*Vaginulina* being typically entirely non-spiral, and *Marginulina* having rounded or sub-cylindrical segments.

The genus is distributed over an area stretching from the Arctic seas, lat. 79° 45' N., to Magellans Strait, lat. 52° 50' S. It inhabits all the great oceans, the Red Sea, the Mediterranean, and the Adriatic. Its bathymetrical range embraces every depth from the littoral zone to nearly 3000 fathoms, but it attains its best development on bottoms of from 50 to 500 fathoms.

The earliest appearance of fossil *Cristellariæ* is in the Upper Trias;<sup>1</sup> they are abundant in the Lias, and from that geological period down to Post-tertiary times they are met with in marine deposits of almost every age.

*Cristellaria tenuis*, Bornemann, sp. (Pl. LXVI. figs. 21–23).

*Marginulina tenuis*, Bornemann, 1855, Zeitschr. d. deutsch. geol. Gesellsch., vol. vii. p. 326, pl. xiii. fig. 14.

*Cristellaria perprocera*, Schwager, 1866, Novara-Exped., geol. Theil, vol. ii. p. 241, pl. vi. fig. 84.

„ *tenuis*, Reuss, 1870, Sitzungsber. d. k. Ak. Wiss. Wien, vol. lxii. p. 479, No. 1.

„ *legumen*, Seguenza, 1880, Mem. R. Accad. dei Lincei, ser. 3, vol. vi. p. 141, pl. xiii. fig. 12.

This is one of the attenuated, linear group of *Cristellariæ*, the spiral segments of which are few and inconspicuous, and the normal contour of the shell compressed as in *Vaginulina*. Not unfrequently, however, the later segments are subcylindrical or inflated, like those of the Dentaline varieties of *Nodosaria*. The *Marginulina ensis* of Reuss (Haidinger's Naturw. Abhandl., vol. iv. p. 27, pl. ii. fig. 16), is a very similar form, but the test is subcylindrical throughout.

<sup>1</sup> Very recent observations place the first appearance of the genus as far back as the Lower Silurian. See footnote, p. 548.