

Pullenia sphaeroides, Carpenter, 1862, *Introd. Foram.*, p. 184, pl. xii. fig. 12.

„ „ Parker and Jones, 1865, *Phil. Trans.*, vol. clv. p. 368, pl. xiv. figs. 43, *a.b.*

„ *bulloides*, Reuss, 1866, *Denkschr. d. k. Akad. Wiss. Wien*, vol. xxv. p. 150.

„ *sphaeroides*, Terrigi, 1880, *Atti dell' Accad. Pontif.*, ann. xxxiii. p. 189, pl. i. fig. 21.

In general external appearance *Pullenia sphaeroides* bears a close resemblance to the thicker varieties of the genus *Nonionina*. It is a minute species, perhaps the smallest of all the *Globigerinidæ*, the diameter of the adult test ranging from $\frac{1}{150}$ th to $\frac{1}{75}$ th inch (0.17 mm. to 0.34 mm.). The shell is subglobular, usually somewhat compressed in the direction of the axis; and it is composed of from three to four convolutions, each of which consists normally of four segments. The segments are much arched and extend from pole to pole, so that each convolution completely invests those previously formed. The septal face is extremely narrow; and the aperture is a crescentiform slit, almost the entire length of the final segment, inserted at its inner margin, close to the line of union with the preceding

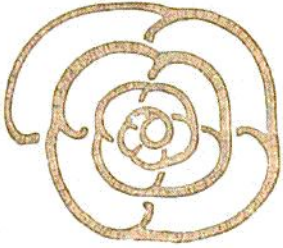


FIG. 18. — *Pullenia sphaeroides*. Horizontal section, showing the arrangement of the chambers. Magnified 100 diameters.

convolution. The surface of the shell is smooth, and the sutures are marked externally by fine lines with little or no superficial depression. The walls are very finely perforated; and, judging from the appearance of transverse sections of the shell, the diameter of the pore-canals does not exceed $\frac{1}{25,000}$ th inch (0.001 mm.).

Pullenia sphaeroides is a nearly cosmopolitan species. Its area of distribution reaches from lat. 70° N., or thereabouts, to lat. 54° S.; and its bathymetric range extends from the laminarian zone down to 2750 fathoms, but it is comparatively rare at depths of less than 300 fathoms. The list of localities includes Davis Strait and the shores of Novaya Zemlya, the east coast of Norway, the Farøe Channel, the British seas, the Mediterranean, and the Red Sea: its occurrence has been noted at no less than twenty-two Stations in the North Atlantic, six in the South Atlantic, four in the Southern Ocean, fifteen in the South Pacific, and five in the North Pacific.

From a geological point of view, *Pullenia sphaeroides* is first conspicuous as a Cretaceous Foraminifer. It presents itself in the Chalk of Westphalia (Reuss) and of the Island of Rügen (Marsson), and in the Chalk-marl of Lemberg (Reuss). It is found in the Eocene clay of the London Basin (Jones and Parker), and in the Septaria-clays of various parts of Germany (Reuss, Bornemann); in the Miocene deposits of Vienna (d'Orbigny, Reuss, Karrer), of the Banat (Karrer), and of Malta (Brady), and in the Salzthon of Wieliczka (Reuss). It occurs also in the Subapennine formations of Italy (d'Orbigny, Costa, &c.), in the Vatican Sands (Terrigi), and in the Crag of Norfolk and Suffolk (Jones, Parker, and Brady).