

*Bigenerina robusta*, H. B. Brady (Pl. XLV. figs. 9-16).

*Bigenerina robusta*, Brady, 1881, Quart. Journ. Micr. Sci., vol. xxi., N. S., p. 53.

Test elongate, subcylindrical: early portion compressed, and tapering to a blunt point, composed of a number of segments arranged, as in *Textularia*, in two more or less regular alternating series: later portion cylindrical, convex or truncate at the distal end; consisting of numerous very short segments, the marginal outline of which is often ventricose and irregular. Aperture in the early stage Textularian in form and position; in adult specimens terminal and porous. Length,  $\frac{1}{8}$ th inch (4.2 mm.), sometimes more.

In certain localities where arenaceous *Textulariæ* are abundant and grow to a large size, the specimens are apt to assume considerable diversity of form. Some of them, perhaps the largest number, are tolerably regular in contour and mode of growth; others, though irregular, complete their tests in the normal biserial manner; whilst the rest become dimorphous, and put on a number of uniserial segments. In rare instances, the tests, which retain their Textularian character to maturity, exhibit a porous aperture (Pl. XLIII. fig. 3), but in the dimorphous or Bigenerine condition the multiple orifice is an almost invariable feature, the only exceptions being those in which the pores have coalesced so as to form a single irregular opening. In view of these facts, it is probable that, notwithstanding the strikingly distinct appearance of *Bigenerina robusta*, it may represent nothing more than a local dimorphous variety of *Textularia agglutinans*.

Monstrous specimens, in which the organism has divided at an early stage, or otherwise given rise to two or three cohering individuals are not uncommon, and they serve to show how little value is to be attached to the form of the aperture as a zoological character. Examples of this sort are represented in Pl. XLV. figs. 15 and 16, the former of which is a double shell, one individual having a Textularian the other a porous aperture; whilst the latter consists of three tests united at the base, one of them still in the Textularian stage, another with an irregular central orifice, and the third in the more common condition, with a number of pores near the middle of the final segment.

One of the most interesting points in connection with this species is its close resemblance to certain Carboniferous fossils, described several years ago under the name *Climacammia antiqua*.<sup>1</sup> The affinity of these fossils to the genus *Bigenerina* was to some extent recognised, and the term *Climacammia* was introduced provisionally,

<sup>1</sup> Monograph of Carboniferous and Permian Foraminifera, p. 68, pl. ii. figs. 1-9, and on a later page a more regular specimen of the same species appears under the name *Bigenerina patula*, p. 136, pl. viii. figs. 10, 11, and pl. x. figs. 30, 31.

Since the publication of the Monograph, the same forms have been described by von Möller, under the names *Cribrostomum pyriforme*, *Cribrostomum patulum*, &c., *Mém. de l'Acad. Imp. Sci. St.-Petersbourg*, ser. 7, vol. xxvii. No. 5, pp. 57, 65, &c.

Should further research show, as I believe it will, that the palæozoic and recent specimens belong zoologically to identical species, the name *Bigenerina patula* would take precedence of *Bigenerina robusta*.