

same set of forms. Schwager, however, takes what appears to be a much more reasonable view of the features in question, and in his admirable memoir on fossil Foraminifera from the Nicobar Islands, has assigned one of these compressed and carinate forms to the genus *Bigenerina*, thereby asserting their affinity with the cylindrical varieties having the same typical structure. It is true that the aperture of *Bigenerina capreolus* and *Bigenerina pennatula*, adapting itself to the shape of the terminal segment, is generally fissurine; but this character, which only applies to the later portion of the test, is by no means invariable, and examples are not wanting in which the orifice is of oval form, and differs but little from that of occasional specimens of the cylindrical species.

In the recent condition, *Bigenerina capreolus* is best known as a North Atlantic type. It is found in some of the "Porcupine" dredgings, but I have not been able to trace it further north than about lat. 50° N. It is common off the Azores, 450 fathoms; off the Canaries, 600 fathoms; and off the Danish West Indies, 390 to 450 fathoms. In the South Atlantic it has been taken at two Stations, off the coast of South America, near Pernambuco, depth 350 and 675 fathoms respectively. The specimens originally described by d'Orbigny were obtained from the Adriatic.

Owing to the confusion of names, there is some uncertainty in the record of the occurrence of the species in the fossil condition, and it is difficult to state its geological distribution with any degree of accuracy. It is known, however, to occur as far back as the Eocene formation of the Bavarian Alps (Gümbel), and the *Clavulina-szabóï* beds of Hungary (Hantken); and there is little doubt of its presence in company with *Bigenerina pennatula* in the later Tertiaries of Italy.

Bigenerina pennatula, Batsch, sp. (Pl. XLV. figs. 5-8).

- "Orthoceratia Pupa," Soldani, 1791, Testaceographia, vol. i. pt. 2, p. 99, pl. cviii. fig. D.E.F.
Nautilus (Orthoceras) pennatula, Batsch, 1791, Conchyl. des Seesandes, No. 13, pl. iv. fig. 13, a.-d.
Vulvulina elegans, d'Orbigny, 1826, Ann. Sci. Nat., vol. vii. p. 264, No. 3.
Lingulina soldanii, Id. Ibid. p. 257, No. 3.
Textularia corrugata, Costa, 1857, Mem. Acad. Sci. Napoli, vol. ii. p. 125. pl. i. fig. 15.
Bigenerina nicobarensis, Schwager, 1866, Novara-Exped., geol. Theil, vol. ii. p. 196, pl. iv. fig. 7, a.-c.
Venilina nummulina, Gümbel, 1868, Abh. d. k. bayer. Akad. Wiss., II. Cl., vol. x. p. 648, pl. ii. fig. 84, a.b.
Grammostomum elegans, Parker, Jones, and Brady, 1871, Ann. and Mag. Nat. Hist., ser. 4, vol. viii. p. 170, p. xi. figs. 121, 123.

Bigenerina pennatula is very closely related to the species last described, but differs from it in the obtuse rounded outline of the aboral end of the test, the relatively smaller number of Textularian segments, and the increased development of the linear series.