

Charpentier had previously included Dactylopores amongst the Foraminifera, and the name of Foraminiferal limestone rapidly began to be applied to the Alpine deposits in question. Meunier-Chalmas, however, showed in 1877 that the so-called Dactylopores were not Foraminifera and did not belong to the animal kingdom at all, but were Calcareous Algæ. In view of Gümbel's results, these algal organisms, under the new name of *Gyroporella*, were raised to a place of the first importance in the history of Alpine rock-building, since their aggregated remains form a very great portion of the enormous thickness of limestone and dolomite which adorn the Eastern Alps.

In his work on Chemical Geology, Bischof had expressed his opinion that the thick deposits of marine limestone occurring in the geological formations had been formed by pelagic faunas which derived the calcareous substance from the calcium carbonate in sea-water. Volger in 1857 showed that the source of the lime was for the most part not the very small proportion of lime carbonate dissolved in sea-water, but the gypsum or lime sulphate. Recent researches support Volger's results, and enter in more detail into the chemical processes by which the animal tissues are enabled to assimilate the lime as a carbonate, and to throw off the sulphur in chemical combinations with waste products, more especially ammonia.

The "tests" or "casings" of pelagic Foraminifera are sometimes calcareous, sometimes arenaceous, and are sometimes imperforate (*e.g.* Miliolina, Orbitolites), sometimes provided with a number of small apertures or foramina (*e.g.* Nodosaria, Globigerina, Rotalia).

D'Orbigny in 1825 examined both recent and fossil specimens of Foraminifera, and misled by the elaborate appearance of the shells, he placed them in affinity with the Nautiloid group of Molluscs, but since then the microscopic study of Foraminifera and the extended means of comparison with related forms of lowly animal life have shown this group to belong to the Protozoa (*Subd. Reticularia*, Carp.); from geological, geographical, and zoological sides of research, abundant evidence has been given of the pre-eminence of testaceous material in pelagic deposits.

As early as 1839, Ehrenberg proved that chalk rocks were composed of fossil Foraminifera, and demonstrated a similar aggregation of minute calcareous shells belonging to recent