sea, a marine limestone was formed, another deposit of freshwater origin was introduced to the southward, or at the head of the bay. It is supposed that during the Eocene period, as now, the ocean was to the north, and the continent, where the great lakes existed, to the south. From that southern region we may suppose a body of freshwater to have descended, charged with carbonate of lime and silica, the water being perhaps in sufficient volume to freshen the upper end of the bay.

The gypsum, with its associated marl and limestone, is, as before stated, in greatest force towards the centre of the basin, where the calcaire grossier and calcaire siliceux are less fully developed. Hence M. Prevost infers, that while those two principal deposits were gradually in progress, the one towards the north, and the other towards the south, a river descending from the east may have brought down the gypseous and marly sediment.

Grès de Beauchamp or Sables moyens, B. 3.—In some parts of the Paris basin, sands and marls, called the Grès de Beauchamp, or Sables moyens, divide the gypseous beds from the calcaire grossier proper. These sands, in which a small nummulite (*N. variolaria*) is very abundant, contain more than 300 species of marine shells, many of them peculiar, but others common to the next division.

Calcaire grossier, upper and middle, B. 4.—The upper division of this group consists in great part of beds of compact, fragile limestone, with some intercalated green marls. The shells in some parts are a mixture of *Cerithium, Cyclostoma*, and *Corbula;* in others *Limneus, Cerithium, Paludina*, &c. In the latter, the bones of reptiles and mammalia, *Paleotherium* and *Lophiodon*, have been found. The middle division, or calcaire grossier proper, consists of a coarse limestone, often passing into sand. It contains the greater number of the fossil shells which characterize the Paris basin. No less than 400 distinct species have been procured from a single spot near Grignon, where they are imbedded in a calcareous sand, chiefly formed of comminuted shells, in which, nevertheless, individuals in a perfect state of preservation, both of marine, terrestrial, and freshwater species, are mingled together. Some of the marine shells may have lived on the spot; but the *Cyclostoma* and *Limneus* must have been brought thither by rivers and currents, and the quantity of triturated shells implies considerable movement in the waters.

Nothing is more striking in this assemblage of fossil testacea than the great proportion of species referable to the genus *Cerithium* (see p. 30, fig. 44). There occur no less than 137 species of this genus in the Paris basin, and almost all of them in the calcaire grossier. Most of the living *Cerithia* inhabit the sea near the mouths of rivers, where the waters are brackish; so that their abundance in the marine strata now under consideration is in harmony with the hypothesis, that the Paris basin formed a gulf into which several rivers flowed, the sediment of some of which gave rise to the beds of clay and lignite before mentioned; while a distinct freshwater limestone, called calcaire siliceux, already