

- Sables Moyens. {
- Green sands of Monceaux (*Cerithium Cordieri*, *C. tricarinatum*, *Natica parisiensis*).
 - Limestones of Saint Ouen—a marly fresh-water rock 20 to 26 feet thick, composed of two zones, the lower full of *Bythinia*, and the upper abounding in *Limnæa*.
 - Sands of Mortefontaine (*Avicula Defrancei*).
 - Sands and sandstones of Beauchamp (*Cerithium mutabile*, *C. tuberculosum*, *C. Bouei*, *Melania hordacea*, *M. lactea*, *Cyrena deperdita*, *Planorbis nitidulus*, *Corbula gallica*, etc.)
 - Sands, etc., with *Nummulites variolaria*, *Ostrea dorsata*, *Cyrena deperdita*, corals, *Lamna elegans*, *Odontaspis (Otodus) obliquus*, etc.

Northward in the Belgian area, near Brussels, the highest Eocene strata consist of sands and calcareous sandstones ("Wemmeliën"), separated from the similar Lackenian beds below by a gravel full of *Nummulites variolaria*. Other common fossils are *Turbinolia sulcata*, *Corbula pisum*, *Cardita sulcata*, *Turritella brevis*, *Clavalithes (Fusus) longævus*.

Receding from the Paris basin, the Eocene deposits assume entirely different characters as they are traced into the west, centre, and south of France. According to Vasseur's detailed researches, a long irregular arm of the sea penetrated Brittany in Eocene times from where the Loire now enters the Atlantic, while the northwestern part of Vendée was likewise submerged. In these waters a series of limestones and sands was deposited, which from their fossil contents appear to be the equivalents of the Calcaire Grossier. They pass up into lacustrine and brackish-water beds like the corresponding groups at Paris.⁴² In the south of France, the Eocene rocks chiefly present the nummulitic facies to be immediately referred to, and in some places attain a great development, as near Biarritz, where they are more than 3000 feet thick.

Southern Europe.—The contrast between the facies of the Cretaceous system in northwestern and in southern Europe is repeated with even greater distinctness in the Eocene series of deposits. From the Pyrenees eastward, through the Alps and Apennines into Greece and the southern side of the Mediterranean basin, through the Carpathian Mountains and the Balkan into Asia Minor, and thence through Persia and the heart of Asia to the shores of China and Japan, a series of massive limestones has been traced, which,

⁴² G. Vasseur, *Ann. Sci. Geol.* xiii. 1881. Hébert, *Bull. Soc. Geol. France* (3) x. 1882, p. 364.