

of the Anglo-Parisian basin, in which the upper Cretaceous rocks of Belgium and England were laid down. The same palæontological characters, and even in great measure the same lithological composition, prevail over the whole of that wide area, which belongs to the northern Cretaceous province of Europe. Apparently only during the early part of the Cenomanian period, that of the Rouen Chalk, did the Anglo-Parisian basin communicate with the wider waters to the south, which were bays or gulfs freely opening to the main Atlantic. In these tracts a notably distinct type of Cretaceous deposits was accumulated, which, being that of the main ocean, covers a much larger geographical area and contains a much more widely diffused fauna than are presented by the more limited and isolated northern basin. There are few more striking contrasts between contemporaneously formed rocks in adjacent areas of deposit than that which meets the eye of the traveller who crosses from the basin of the Seine to those of the Loire and Garonne. In the north of France and Belgium, soft white chalk covers wide tracts, presenting the same lithological and scenic characters as in England. In the centre and south of France, the soft chalk is replaced by hard limestone, with comparatively few sandy or clayey beds. This mass of limestone attains its greatest development in the southern part of the department of the Dordogne, where it is said to be about 800 feet thick. The lithological differences, however, are no greater than those of the fossils. In the north of France, Belgium, and England, the singular molluscan family of the Hippuritidæ or Rudistes appears only occasionally and sporadically in the Cretaceous rocks, as if a stray individual had from time to time found its way into the region, but without being able to establish a colony there. In the south of France, however, the hippurites occur in prodigious quantity, often mainly composing the limestones, hence called hippurite limestone (Rudisten-Kalk). They attained a great size, and seem to have

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the nomenclature and the lines of demarcation between the upper Cretaceous formations, arising doubtless in great part from the varying aspect of the rocks themselves, according to the region in which they are studied. I have followed mainly M. Hebert, whose suggestive memoirs ought to be carefully read by the student. See especially his "Ondulations de la Craie dans le Bassin de Paris," Bull. Soc. Geol. France (2), xxix. 1872, p. 446; (3), iii. 1875, p. 512; and Ann. Sci. Geol. vii. 1876; "Description du Bassin d'Uchaux," Ann. Sci. Geol. vi. 1875; "Terrain Cretace des Pyrenees," Bull. Soc. Geol. France (2), xxiv. 1867, p. 323; (3) ix. 1880, p. 62.