

## HIPPURITE LIMESTONE.

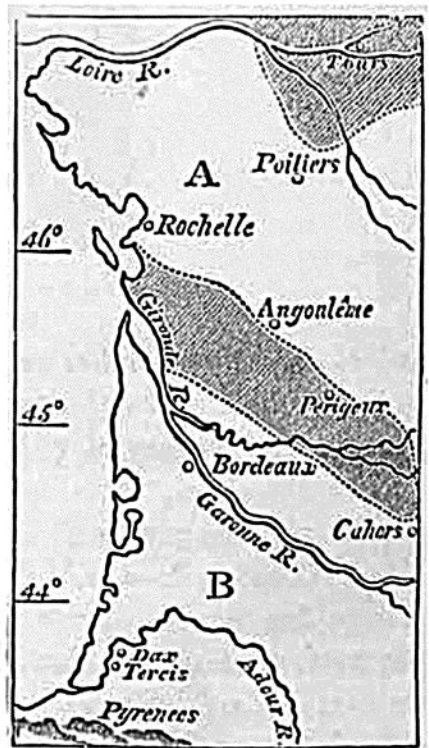
*Difference between the chalk of the north and south of Europe.*—By the aid of the three tests of relative age, namely, superposition, mineral character, and fossils, the geologist has been enabled to refer to the same Cretaceous period certain rocks in the north and south of Europe, which differ greatly, both in their fossil contents and in their mineral composition and structure.

If we attempt to trace the cretaceous deposits from England and France to the countries bordering the Mediterranean, we perceive, in the first place, that the chalk and greensand in the neighborhood of London and Paris form one great continuous mass, the Straits of Dover being a trifling interruption, a mere valley with chalk cliffs on both sides. We then observe that the main body of the chalk which surrounds Paris stretches from Tours to near Poitiers (see the annexed map, fig. 292, in which the shaded part represents chalk).

Between Poitiers and La Rochelle, the space marked A on the map separates two regions of chalk. This space is occupied by the Oolite and certain other formations older than the Chalk, and has been supposed by M. E. de Beaumont to have formed an island in the cretaceous sea. South of this space we again meet with a formation which we at once recognize by its mineral character to be chalk, although there are some places where the rock becomes oolitic. The fossils are, upon the whole, very similar; especially certain species of the genera *Spatangus*, *Ananchytes*, *Cidarites*, *Nucula*, *Ostrea*, *Gryphæa* (*Exogyra*), *Pecten*, *Plagiostoma* (*Lima*), *Trigonia*, *Catillus* (*Inoceramus*), and *Terebratula*.\* But *Ammonites*, as M. d'Archiac observes, of which so many species are met with in the chalk of the north of France, are scarcely ever found in the southern region; while the genera *Hamite*, *Turrilite*, and *Scaphite*, and perhaps *Belemnite*, are entirely wanting.

On the other hand, certain forms are common in the south which are rare or wholly unknown in the north of France. Among these may be mentioned many *Hippurites*, *Sphærulites*, and other members of that great family of mollusca called *Rudistes* by Lamarck, to which nothing analogous has been discovered in the living creation, but which is quite characteristic of rocks of the Cretaceous era in the south of

Fig. 292.



\* D'Archiac, sur la Form. Crétacée du S. O. de la France, Mém. de la Soc. Géol. de France, tom. ii.