

Where the two rings unite in the middle of France they send a tongue down to the Bay of Biscay. On the eastern side of the country the Jurassic system is copiously developed, and extends thence eastward through the Jura Mountains into Germany.

The subdivisions of the Jurassic system in the north and northwest of France belonging to what has been termed the Anglo-Parisian basin, resemble generally those established in England. But in the southern half of the country, and generally in the Mediterranean province, the facies departs considerably both lithologically and palæontologically from the English type, more particularly as regards the Upper Jurassic rocks. The following table gives in descending order a summary of the distribution of the Jurassic system in France:⁷⁶

10. Portlandian, separated into two sub-stages. At the base lie sands and clays, equivalents of the Portland sands, or "Bononian" with *Ammonites* (*Stephanoceras*) *portlandicum*, *A. gigas*, and *Ostrea expansa*. Higher up come sands and calcareous sandstones corresponding to the Portland stone, with *Trigonia gibbosa* and *Perisphinctes transitorius*. The Purbeckian is marked by *Corbula inflexa*. The stage is best developed along the coast near Boulogne-sur-mer, where it is composed of about 75 feet of clays, sands, and sandstones, with *Acrosalenia Koenigi*, *Perna Bouchardi*, *Echinobrissus Brodiei*, *Cardium Pellati*, *Trigonia radiata*, *T. gibbosa*, *T. incurva*, etc. At the top lies a bed of limestone containing *Cyrena Pellati*, *Cardium dissimile*, and covered by a travertin with *Cypris*, which may represent the Purbeck beds. Far

⁷⁶ For a detailed account of the development of the Jurassic rocks of France, see De Lapparent's "Geologie," 3d edition, 1893; also A. d'Orbigny's "Paleontologie Française—Terrains Oolithiques," 1842-50; D'Archiac, "Paleontologie de la France," 1868, and "Paleontologie Française, continuée par une reunion de Paleontologistes—Terrain Jurassique," in course of publication; Hébert, "Les Mers anciennes et leurs Rivages, dans le Bassin de Paris," 1857 (a most interesting and valuable essay), and numerous papers in Bull. Soc. Geol. France; Monographs by Loriol, Cotteau, Pellat, Royer, Tombeck; Gosselet's "Esquisse," cited ante, p. 1222; J. F. Blake, Q. J. Geol. Soc. 1881, p. 497, gives a bibliography for N. W. France, and Barrois (Proc. Geol. Assoc.) gives a summary of results for the Boulonnais. For the last named district consult also Pellat, Bull. Soc. Geol. France, viii. 1879; Douvillé et Rigaux, op. cit. xix. 1891, p. 819. Rigaux, "Notice Géologique sur le Bas Boulonnais," Boulogne-sur-mer, 1892.