

have been borne seaward by the great river which transported so much of the vegetation of the neighboring land.

MIDDLE EOCENE.—In the London basin this division consists chiefly of sands, which are comprised in the two sub-stages of the lower and middle “Bagshot Beds.” The lower of these, consisting of yellow, siliceous, unfossiliferous sands, with irregular light clayey beds, attains a thickness of about 100 to 150 feet. The second sub-stage, or “Middle Bagshot Beds,” is made up of sands and clays, sometimes 50 or 60 feet thick, containing few organic remains, among which are bones of turtles and sharks, with a few mollusks (*Cardita acuticosta*, *C. elegans*, *C. planicosta*, *C. imbricata*, *Corbula gallica*, *C. Lamarckii*, *Ostrea flabellula*).

In the Hampshire basin, the Middle Eocene beds attain a much greater development, being not less than 660 feet thick at the west end of the Isle of Wight, where they consist of variously-colored unfossiliferous sands and clays, with minor beds of ironstone and plant-bearing clays, pointing to an alternation of marine and estuarine conditions of deposit.²⁷ On the mainland at Studland, Poole, and Bournemouth, the same beds appear. The important series of clays, marls, sands, and lignites, upward of 100 feet thick, known as the Bracklesham beds from their occurrence at Bracklesham, on the coast of Sussex, has yielded a large series of marine organisms. Among these are the fishes *Pristis*, *Odontaspis*, *Lamna*, *Myliobates*, also *Palæophis*, and the mollusks *Belosepia sepioidea*, *B. Owenii*, *Cypræa inflata*, *C. tuberculosa*, *Marginella eburnea*, *M. ovulata*, *Voluta crenulata*, *V. spinosa*, *V. angusta*, *V. Branderi*, *V. cythara*, *V. muricina*, *Mitra labratula*, *Conus deperditus*, *C. Lamarckii*, *Pleurotoma dentata*, *P. textiliosa*, *Pteronotus* (*Murex*) *asper*, *Clavalithes* (*Fusus*) *longævus*, *Turritella imbricataria*, *Ostrea dorsata*, *O. flabellula*, *Pseud-amusium* (*Pecten*) *corneus*, *P. squamula*, *Lima expansa*, *Spondylus rarispina*, *Avicula media*, *Pinna margaritacea*, *Modiola* (*Lithodomus*?) *Deshayesi*, *Arca biangula* (*Branderi*), *A. interrupta*, *A. planicosta*, *Limopsis granulata*, *Nucula minor*, *Nuculana* (*Leda*) *galeottiana*, *Cardita acuticosta*, *C. elegans*, *C. imbricata*, *C. planicosta*, *Crassatella grignonensis*, *Chama calcarata*, *C. gigas*, *Nummulites lævigata*, (*N. scabra*) *Alveolina fusiformis*.²⁸ The Bracklesham beds reap-

²⁷ “Geology of the Isle of Wight” in Mem. Geol. Surv. p. 109.

²⁸ See Dixon’s “Geology of Sussex”; Edwards and S. Wood, “Monograph of Eocene Mollusca,” Palæontograph. Soc.