

direction, the sandstone forms a range of hills of considerable elevation. Crowborough beacon, the loftiest part of the range, attains the height of more than 800 feet.

It is true that nowhere in Kent or Sussex do we obtain a section of strata on which the Wealden beds rest. At Lulworth Cove, in Dorsetshire, where a portion of these beds has been traced, they appear to have covered the upper or Portland oolites. Some portion of the same beds has been observed in the Isle of Wight; but they have not been found in the midland counties of England. The ferruginous character of some of the beds occasioned them to be, for a long time, mistaken for the iron sand belonging to the green sand formation, hereafter to be described. The name of Hastings or iron sand, Weald clay, and Petworth and Purbec limestone, have been given to different parts of this accumulation of sand, sandstone, and argillaceous limestone, to which the name of the Wealden or Sussex beds may be collectively applied. The clay called the Weald clay may be regarded as the principal member of this formation, to which the sandstone, calciferous grit, and limestone, are subordinate; for though the sand and sandstone form lofty cliffs on the coast, they alternate with marl and clay, and rest on beds of clay.* We shall therefore describe the Weald clay in conjunction with the beds of limestone and sandstone. The clay is a bluish or brownish tenacious clay, sometimes indurated and slaty. Thin beds of limestone, separated by seams of clay, occur in different parts of the Weald clay: they have been known for furnishing a stone for architectural purposes, called Sussex marble, and Petworth marble. Some of the more compact varieties are sufficiently hard to receive a good polish. These beds abound with shells of the *Paludina*, and crusts of the *Cypris faba*†, and other fresh-water shells. Masses of calciferous sandstone, nearly resembling the well-known sandstone of Fontainebleau, occur in various parts of the Wealden, both in what may be called the Weald clay, and the lower beds of sand and sandstone, called Hastings' sand. The Hastings' sandstone is composed of yellowish or whitish grains of sand, very loosely adhering, alternating with beds of clay, and with a small sandstone conglomerate, containing rounded fragments of bones, and scales of fishes. Over this bed there occurs, in some parts of the Weald (particularly at Tilgate Forest), a bed of coarse conglomerate, consisting of quartz

* Below the Castle rock at Hastings, borings were made in 1829; they were chiefly in clay. The clay from the depth of 120 feet, which I examined, was a whitish-grey pipe-clay. The borings were made to obtain water for the Pelham Baths, which was found at the depth of 260 feet, of a good quality, and rose nearly to the surface.

† The *Cypris faba* is a crustaceous animal in a roundish shell or case, not much larger than a grain of millet. The living species are aquatic monocoli, which swim in fresh water, and deposit their eggs on the leaves of aquatic plants, or in the mud. The *paludina* is a fresh-water univalve shell.