

(dd) *Range and extent.* (ee) *Height of hills.* Referred to the general article at the end of this section.

(ff) *Thickness.* According to Mr. Middleton's measurements, these beds, in the Isle of Purbeck, exhibit altogether a thickness of about 120 feet; and this appears the estimate on which the greatest reliance may be placed.

(gg) *Inclination.* Referred to the general article at the end of this section.

(hh) *Agricultural character.* A poor stone-brash soil.

(ii) *Water.* The water issues abundantly from the bottom of this rock, where it is thrown out by the subjacent Kimmeridge clay.

3. KIMMERIDGE CLAY.

(aaa) *Chemical and external characters.* These beds consist of a blue slaty or greyish yellow clay (the *Oaktree clay* of Smith,) containing selenite; but it sometimes contains beds of highly bituminous shale, as near Kimmeridge on the coast of the Isle of Purbeck, where these are used as fuel, whence they have obtained the name of *Kimmeridge coal*; and hence the name of Kimmeridge clay as applied to the whole formation. The beds are most instructively displayed (G. Map) near that place. They are also finely exposed (G. Notes) on the coast of the Isle of Portland.

On the east of little Kimmeridge, where the cliffs are abrupt, they are composed of a slate-clay of a greyish yellow colour, finely slaty, containing both animal and vegetable impressions. The plates of which the rock is composed, become much more evident after it has undergone some decay; or, when sound, after it has been exposed to the fire. It divides spontaneously into large tabular masses. The fracture of the rock is earthy, with many small specks and nodules of indurated clay. The outside of the rock is covered by a thin layer of calcareous spar. The mass effervesces with acids, but the nodules of indurated clay do not. This rock passes gradually into a bituminous shale; but the first transition is into a slate-clay of a lighter or darker colour, the joints of which are covered with iron pyrites. It burns with a yellowish flame, giving out a sulphureous smell, and becomes afterwards of a light grey colour. The second transition is to a bituminous shale called *Stony Coal* [*Kimmeridge Coal**] the specific

* Near Smedmore in the parish of Great Kimmeridge, is found what the country-people call 'Coal-money', generally on the top of the cliffs, two or three feet below the surface, enclosed between two stones set edgeways