an argillaceous stratum considerably beneath the iron sand (the same which is marked by the appellation of Kimmeridge clay in our arrangement), and which is consequently of distinct and anterior formation to this;† since also Mr. Smith has applied the term to the Kimmeridge beds in his Stratigraphical arrangement of organic remains, it would manifestly only perpetuate a source of confusion to retain it in this place.

(a) Chemical and external characters. Its chemical character and aspect varies from that of a dark tenacious clay, to that of a blue or grey calcareous marle of an earthy and friable texture. It contains occasionally layers of argillo-calcareous concretions replete with shells of the genus Vivipara fluviorum. The interior of these is usually filled by calcareous spar; and as the cement has firmness enough to admit a slight polish, masses of this description are occasionally wrought for ornamental purposes, and form what is well known in many of our gothic buildings by the name of Petworth marble. It should be remarked, however, that the Purbeck marble has been in many instances miscalled by this name; but the latter is marked by the shells contained in it being of smaller size, and by a greater delicacy and elegance of texture and appearance. The taper shafts which cluster round the columns of the early gothic style, are generally formed of the Purbeck marble, the Petworth being used chiefly for the slabs of altar tombs, and other coarser works. It is little worked at present, being so liable to break that it is difficult to make it into any thing that is not bulky; under the saw it will frequently break off and fall to pieces. Some quarries are still however wrought near Kirdford and North Chapel in Surrey. It is said also that beds of fullers' earth occasionally occur in this formation.

(b) Mineral contents. These appear to be limited to the specks of mica which occur in many of its beds, nodules of iron pyrites, and selenite.

(c) Organic remains. Its organic remains have not as yet been enumerated by any writer; those given under the head Oaktree clay in Mr. Smith's Stratigraphical arrangement, being in reality those of the Kimmeridge clay. The most characteristic shell is, however, undoubtedly that which marks the Petworth marble, namely, the Vivipara fluviorum, which is found not only where the quarries of that stone are now worked, but in many other localities through the vale occupied by this formation, in Kent, Surrey, and Sussex; they are mingled with minute bivalves, supposed to belong to the genus

† Full proof of the distinction of these formations will be given in treating of the Kimmeridge clay.