

Section III.

GREEN SAND.*

This is, in respect of its mass, and the number and beauty of its organic remains, one of the most important formations between the chalk and oolites. In all the southern counties its beds occupy a great thickness, and may be readily traced, as distinct from the other members which occupy this interval; but, as we have before remarked, in the Midland and Northern counties their course is much more obscure, and cannot yet be considered as fully elucidated.

(a) *Chemical and external characters.* The green sand consists of loose sand, and of sandstone. The sand is siliceous, but the cement, when in the form of sandstone, is generally calcareous. Both sand and sandstone mostly contain minute portions of a substance which has been termed Green Earth, † which has not been chemically examined, but very probably derives its colour from the suboxide of iron; and very commonly spangles of mica; subordinate beds and masses of chert, and veins of chalcedony usually occur; and also frequently alternating beds and nodules of limestone, which in the Isle of Wight is termed *Rag*, and which is identical with the Kentish *Rag*. Much obscurity has been produced by confounding the limestone of this formation with that of Portland; from which, in geological position, characters, and fossils, it is perfectly distinct. Beds of clay also form occasional separations in this formation. In the series of these beds, chert, flint, and chalcedony continually pass into each other by insensible gradation: owing to their hardness, they are often discoverable on the summits of hills, as at Leusden, Pilsden, &c. The flinty and chalcedonic varieties are much more frequent in the west of England than in the eastern part of Kent, but they occur very commonly in Surrey: the most beautiful are found near Charmouth in Dorsetshire.

The difference of appearance which characterise different beds of this formation, and often indeed affect all its beds in particular localities, arise, first, from a difference of texture, which passes from a very coarse-grained sandstone, and even a

* Chiefly by the Rev. W. D. Conybeare. Much information has also been extracted from Mr. Greenough's Notes.

† These green particles are not confined to this bed, but are seen also in the London clay above the chalk, in the lower chalk, in the Purbeck beds beneath the iron sand, and in the upper beds of the Kimmeridge clay when in contact with the Portland limestone.