

the flint has entered all the ramifications, the forms of which therefore remain.

It is not uncommon to find flints inclosing many of the shells observable in the chalk, and impressions of the few varieties of echinus common to that of Dover, the shells having been replaced by carbonate of lime, or the space they once occupied being left vacant ; so that the internal cast of the shell, which is of flint, is in some cases connected with the surrounding mass by fine filaments of siliceous matter, arranged precisely in the order of the small perforations commonly visible in the shell, which therefore must have been formed while the shell was yet entire. Shells enclosed in flint are usually filled with the same substance ; if only adhering to, or partially imbedded in it, they are generally filled with chalk.

About 40 feet below the summit of the cliff beneath the castle walls, lies a bed of a substance greatly resembling hard chalk marle, parallel to the beds of flint. It is about 18 inches thick, and is distinguishable from below by its being of a brownish yellow colour ; and being harder than the chalk, it protrudes, presenting a rugged knotty surface. Such portions of it as fall, are collected by the lime-burner, who can convert them into lime only by using coal, instead of the ashes usually employed in the burning of chalk. Between this bed and the summit, a horizontal crevice is visible in the chalk, indicating the presence of a bed of chalk marle. Several other beds of hard chalk marle are visible in the upper chalk east of the castle between the beds of flint.

II. *Bed of Organic Remains with interspersed Flints.*

When viewing the middle part of the cliff from its base beneath Dover castle, a singular roughness is visible. By ascending the green slope of some ruin, it will be found to proceed in a great degree from its having inclosed a vast multitude of organic bodies of various kinds, amongst which the remains of a few varieties of the echinus, and the ochreous marks of some varieties of sponge, are extremely frequent. In part also the ruggedness proceeds from a vast number of small flints irregularly interspersed through the bed, but which are not visible from below, because such parts of them as are exposed partake of the colour of the bed ; for being separate, and mostly small, they do not commonly shew any fracture.

The numerous knotty projections of this part of the cliff are much harder than chalk commonly is, and than that in which they are imbedded. These remains of organic bodies do not lie in thin or separate beds ; but form one large bed, occupy-