

eral substances, held to be elementary by the chemist, may be resolved into original elements still more simple, and afterwards recomposed into other substances, we have no reason to mount so high in our speculations, respecting the origin of flint.

Flint is siliceous earth nearly pure ; and we find the same earth under different forms, and in a greater or less proportion, combined with almost all calcareous rocks.

Primitive limestone is often much intermixed with siliceous earth. Transition limestone occasionally contains rock-crystals imbedded in the mass : this is, not unfrequently, the case in some of the transition limestones of Derbyshire. The magnesian limestones and oolites, are, also, very commonly intermixed with siliceous grains, and, often, alternate with strata that are more or less siliceous : hence, we need not be surprised to find siliceous earth in chalk, either combined with calcareous earth, or separated in distinct concretions. When the cavities of a sponge or of a crustaceous animal admitted the siliceous earth to enter, it appears to have been infiltrated from the chalk, in the same manner as the nodules of chalcedony have been infiltrated into the cavities of lava or basalt. Between chalcedony and flint there is a near resemblance ; they are only different modes of the same substance, and the flint nodules in the western counties of England are frequently chalcedonic. The hardest rocks and stones are permeable to water ; flint, when first got out of the chalk is easily fractured, and the fractured surface is found covered with moisture.

The organic remains in the chalk formation are exclusively marine. They are too numerous to be described in the present work, but it will be proper to notice those that are the most characteristic. These are, first, echinites, particularly the helmet-shaped species called ananchytes, and the heart-shaped species spatangus, cor anguinum. The chambered shells called scaphites, hamites, turritiles, and baculites, are regarded as peculiar to the chalk formation : it also contains ammonites, belemnites, and nautilites. Numerous organic remains of zoophytes, in the state of flint, particularly of sponges and alcyonia, and various species of bivalve shells, occur in chalk ; but, there are comparatively few spiral univalve shells in this formation. It is probable that the deep ocean in which chalk was deposited, was not suited to the inhabitants of such shells, for the animals had heads and eyes, and required shallow water to see their food. Several specimens of fossil fish from chalk may be seen in the valuable museum of Mr. Mantell, at Lewes, and some vertebral remains of large saurian animals ; but these are rare. Teeth, palates, and scales of fishes, occur, more frequently, in chalk, than vertebræ. The great preservation in which some of the most delicate organic remains are frequently found, render it probable that chalk was deposited in a deep and tranquil sea. Balls of iron pyrites, with a radiated diverging structure, are frequently found in chalk ; and in the chalk-pits near Dorking, the large spines of echini, of the genus *Cidaris*, are