

Argillite, such as roof-slate, are more or less durable when exposed to the weather, yet all the shales crumble when thus exposed.

#### 6.—CLAYS

Seem to have been originally deposited from water under circumstances analogous to those attending the original deposit of slate and shale, without having been similarly indurated. The distinctive character consists in the property which clays possess of becoming more or less plastic when worked up with water.

#### 7.—SILICEOUS SAND.

Beds of sand form a constituent part of the cretaceous and newer formations of this state. Their origin is similar to that of sandstone, but they have not been converted into solid rock by a cementing material.

#### 8.—GREEN SAND,

Which constitutes the well known *Jersey Marl*, occurs in small green grains and is mainly composed of silica, alumina, oxide of iron and potash. They are so soft as to be easily crushed by the finger-nail, and thus differ so essentially from sand, as is generally understood, that French mineralogists have applied to this material the name *glauconite*, from its green color.

### D.—METAMORPHIC ROCKS.

These are supposed to have been deposited from water, either chemically or mechanically, and subsequently modified by heat, with or without the aid of water.

#### 1.—GNEISS,

Whose essential constituents, like those of granite, consist of quartz, felspar and mica. Granite is supposed to have been completely fused and to have been pushed up through other rocks. Gneiss does not seem to have been subjected to such an elevated temperature, but has evidently been softened by heat sufficiently to crystallize at least the felspar and mica. There are, it is true, some rocks that seem intermediate between granite and gneiss, but in general they may be distinguished by the following characters, viz:

1. Gneiss is always more or less stratified, but true granite is without any appearance of stratification.