

The intimate connection between hornblende and serpentine is now completely established ; for hornblende is observed to be changed into serpentine, by contact with limestone in various situations. Serpentine, sometimes, occurs crystallized, and has received the name of diallage.

*Limestone (Carbonate of Lime)*, however various in external appearance it may be, is, if pure, essentially composed of 57 parts of lime, and 43 carbonic acid ; but in some rocks the limestone is intermixed with magnesia, alumine, silex, or iron. The specific gravity of limestone varies from 2.50 to 2.80. All limestones may be scraped with a knife. They are infusible ; but, when impure by an intermixture with a portion of other earths, they vitrify in burning. All limestones effervesce, when a drop of strong acid is applied on the surface ; and they dissolve, entirely, in nitric or muriatic acid. The specific gravity, hardness, and effervescence with acids, taken collectively, distinguish limestone from all other minerals.

*Crystallized Carbonate of Lime (Calcareous Spar)* occurs, crystallized, in a great variety of forms ; the crystals break, easily, with the stroke of a hammer, and the fragments are always rhomboidal.

Vast mountains and extensive strata of limestone cover a large portion of many countries. The varieties of limestone will be described, as the rocks occur, in the primary or secondary series. The different appearance of statuary marble and chalk is well known to every one. They are only different modifications of limestone, and are chemically the same. Magnesian limestone, sometimes called Dolomite, possesses most of the physical characters of common limestone, but contains various proportions of magnesia.

*Gypsum, or Sulphate of Lime*, is far less abundant than carbonate of lime ; but it forms, in some situations, beds of considerable thickness and extent. Gypsum is, generally, of a color inclining to white, and is sometimes snow-white. Common Gypsum has a laminated or granular structure, and is, sometimes, compact. It is much softer than common limestone and may be scratched with the nail ; it does not effervesce with acids. Crystallized gypsum has the properties of common gypsum ; it is frequently called selenite. The constituent parts of gypsum are lime 32.7, sulphuric acid 46.3, and water 21. A variety of gypsum which has no water in its composition, and hence called anhydrous, occurs in beds in the Savoy Alps ; it is there combined with siliceous earth. It is much harder than common gypsum, and even than common limestone. The specific gravity of common gypsum varies from 2.16 to 2.28 ; that of anhydrous gypsum is from 2.80 to 2.90. Gypsum, under the name of plaster stone, is a mineral generally known.

*Slate*, improperly called by some geologists clay-slate, and by the old geologists argillaceous schistus, is well known,—at least the common variety used as roofing slate, which may be regarded as the purest form of this mineral.