

atmosphere. Their quantitative proportion differs however from that in which they exist in the air, and is characterized by a more predominant quantity of Oxygen and Carbonic Acid.

THE CONSTITUENTS OF THE EARTH.—*Earthy masses—Rocks with crystalline texture.*

The solid crust of our globe is composed either of *earthy masses*, more or less loose and friable, or of hard and compact *rocks with crystalline texture*. The former are called aqueous rocks; are the most extensive, at least in the horizontal direction; and were precipitated from their solution or suspension in water, in the form of plainly visible parallel layers, called strata. They may be classed as follows:

Calcareous Rocks and Salts.

Limestone,
Dolomite,
Anhydrite,
Gypsum,
Rock Salt,

Broken Masses.

Sand-stone,
Clay,
Calcareous Conglomerations,
Breccia,
Tufa,

Organic Rocks.

Coal.

The latter are called volcanic rocks, are of igneous origin, produced by the action of subterranean heat, and form massive blocks, especially extending in the vertical direction and without any regularity in the arrangement of their particles. They very probably existed once in a fused state, forming a liquid and homogeneous mass, from which, on cooling, such constituents were separated as had the greatest tendency to crystallize, whereby the entire mass assumed a peculiar crystalline texture. The various crystalline rocks can best be classed as follows:

Silicates, containing Alumina and Alkalies.

Granite, Felsparphophyrite,
Gneiss, Phonolite,
Granulite, Trachyte,
Mica-Slate, Obsidian,

Silicates, containing Lime and Protoxyd of Iron.

Hyperit, Melaphyrite,
Gabbro, Dolerite,
Syenite, Basalt,
Diorite, Leucitopyrite.

ACTION OF THE ATMOSPHERE ON EARTH.—*Mechanical Influences* —*Chemical Influences.*

Geology teaches us that there was a time when no plants were developed upon our globe; when neither soils nor any friable masses of earth existed; at that time the entire crust of our globe consisted solely of those hard and compact rocks of a crystalline