

chemical composition, and are changed into stone; and hence the name of *petrifications* or *fossils*, under which latter term are comprehended all the organized bodies of former epochs, obtained from the earth's crust. Others have entirely disappeared, leaving only their forms and sculpture impressed upon the rocks.

456. The study of these remains and of their position in the rocks constitutes **PALEONTOLOGY**; one of the most essential branches of **Zoölogy**. Their geological distribution, or the order of their successive appearance, namely, *the distribution of animals in time*, is of no less importance than the geographical distribution of living animals, their distribution *in space*, of which we have treated in the preceding chapter. To obtain an idea of the successive creations, and of the stupendous length of time they have required, it is necessary to sketch the principal outlines of **Geology**.

457. The rocks* which compose the crust of our globe are of two kinds:

1. The *Massive Rocks*, called also *Plutonic* or *Igneous Rocks*, which lie beneath all the others, or have sometimes been forced up through them, from beneath. They were once in a melted state, like the lava of the present epoch, and on cooling at the surface formed the original crust of the globe, the granite, and later porphyry, basalt, &c.

2. The *Sedimentary* or *Stratified Rocks*, called also *Nep-tunic Rocks*, which have been deposited in water, in the same manner as modern seas and lakes deposit sand and mud on their shores, or at the bottom.

458. These sediments have been derived partly from the disintegration of the older rocks, and partly from the decay of plants and animals. The materials being disposed in

* Rocks, in a geological sense, include all the materials of the earth, the loose soil and gravel, as well as the firm rock.