

latter. Mechanical powers only changing the *aggregation* of rocks, may break down their parts to a certain size, according to their different nature; chemical powers, again, which change the *nature* of substances, destroy the connection of the minute parts of rocks. When chemical is preceded by mechanical action, it is much assisted by it. The latter has a much more general effect, as all rocks are subjected to its influence; chemical decomposition, on the other hand, acts only upon some rocks, and in these only upon certain parts. The chemical decomposition of rocks is chiefly effected by the oxygen of atmospheric air and of water; but we are also persuaded, that certain cryptogamic plants, intimately attached to the surface of stones, Lichens namely, assist in their destruction.

The oxygen of air and water can only affect the constituent parts of rocks, which have a great affinity to it, such as the iron and sulphur forming pyrites, oxydulous iron, oxydulous manganese, or the same substances mixed with earth or carbonic acid, charcoal and bitumen. Very solid and compact masses of rock, such as greenstone, which are not easily affected by other means, are sometimes corroded by the chemical change of the pyrites contained in them, by which it is converted into a hydrate of iron *. In certain other rocks, which are also readily broken down by mechanical agents, clay-slate for instance, the disintegration is much accelerated by the decomposition of the pyrites. The oxydulous iron of

* The ochre yellow colour of the decayed greenstone around Edinburgh, and in general in many trap districts in this country, is caused by the decomposition of the imbedded iron pyrites.