

three fathoms. In other situations the "throw" is greater.

The application of these facts to the explanation of the condition of ancient strata is important. For it is a general fact, that the carbonaceous substances which are associated with any part of the primary or transition strata, are of the nature of anthracite, which is devoid of bitumen. Whether it will be proper to extend this explanation to the large anthracitic beds of Pennsylvania, South Wales, Devonshire, Brittany, &c., some of which lie among secondary strata, is at present uncertain.

*Dolomitic Limestone.*—One of the effects of the sienite of Skye, in contact with the lias limestone, which it converts to fine granular marble of many colours, is the introduction of silica, alumina, and *magnesia*, into its composition. (Macculloch, *Geol. Trans.* vol. iii. p. 42.) This sienite is principally a felspathic mass, varying from claystone to clinkstone and compact felspar, from which no transfer of *magnesia* could be supposed. Von Buch, in the course of his extensive and laborious examinations of plutonic and volcanic rocks, was led to attribute to a rock of quite another kind, the melaphyre (black or pyroxenic porphyry) of the southern flank of the Alps, not only an important function in the elevation of mountain ranges like the Alps, but the peculiar chemical and mineral change which is locally noticed in some of the limestones. By this change carbonate of lime becomes a double carbonate of lime and *magnesia*; the compound is crystalline, and often of a dazzling whiteness. This is the case with the dolomite of St. Gothard, and with much of that which occurs on the Lago Lugano.

This last is the vicinity to which Von Buch has specially directed the attention of geologists, and as melaphyre, granite, dolomite, and common limestone here occur in abundance and in varied circumstances of exposure, perhaps no better locality can be chosen for