

According to the admirable observations of Leopold von Buch, the masses of dolomite found in Southern Tyrol, and on the Italian side of the Alps, present the most remarkable instance of metamorphism produced by massive eruptive rocks on compact calcareous beds. This formation of the limestone seems to have proceeded from the fissures which traverse it in all directions. The cavities are every where covered with rhomboidal crystals of magnesian bitter spar, and the whole formation, without any trace of stratification, or of the fossil remains which it once contained, consists only of a granular aggregation of crystals of dolomite. Talc laminae lie scattered here and there in the newly-formed rock, traversed by masses of serpentine. In the valley of the Fassa, dolomite rises perpendicularly in smooth walls of dazzling whiteness to a height of many thousand feet. It forms sharply-pointed conical mountains, clustered together in large numbers, but yet not in contact with each other. The contour of their forms recalls to mind the beautiful landscape with which the rich imagination of Leonardi da Vinci has embellished the back-ground of the portrait of Mona Lisa.

The geognostic phenomena which we are now describing, and which excite the imagination as well as the powers of the intellect, are the result of the action of augitic porphyry manifested in its elevating, destroying, and transforming force.* The process by which limestone is converted into dolomite is not regarded by the illustrious investigator who first drew attention to the phenomenon as the consequence of the talc being derived from the black porphyry, but rather as a transformation simultaneous with the appearance of this erupted stone through wide fissures filled with vapors. It remains for future inquirers to determine how transformation can have been effected without contact with the endogenous stone, where strata of dolomite are found to be interspersed in limestone. Where, in this case, are we to seek the concealed channels by which the Plutonic action is conveyed? Even here it may not, however, be necessary, in conformity with the old Roman adage, to believe "that much that is alike in nature may have been formed in wholly different ways." When we find, over widely extended parts of the earth, that two phenomena are always associated together, as, for instance, the occurrence of mela-

* Leop. von Buch, *Geognostische Briefe an Alex. von Humboldt*, 1824, s. 86 and 82; also in the *Annalen de Chemie*, t. xxiii., p. 276, and in the *Abhandl. der Berliner Akad. aus der Jahren 1822 und 1823*, s. 83-136; Von Dechen, *Geognosie*, s. 574-576.