

stone into marble is a regional metamorphism, associated usually with the alteration of other sedimentary masses into schists, etc.

*Dolomitization.*—Another alteration which, from the labors of Von Buch, received in the early decades of the 19th century much attention from geologists, is the conversion of ordinary limestone into dolomite. Some dolomite appears to be an original chemical precipitate from the saline water of inland lakes and seas (p. 695). But calcareous formations due to organic secretions are often weakly dolomitic at the time of their formation, and may have their proportion of magnesium carbonate increased by the action of permeating water, as is proved by the conversion into dolomite of shells and other organisms, consisting originally of calcite or aragonite, and forming portions of what was no doubt originally a limestone, though now a continuous mass of dolomite. This change may have sometimes consisted in the mere abstraction of carbonate of lime from a limestone already containing carbonate of magnesia, so as to leave the rock in the form of dolomite; or probably more usually in the action of the magnesium salts of sea-water, especially the chloride, upon organically-formed limestone; or sometimes locally in the action of a solution of carbonate of magnesia in carbonated water upon limestone, either magnesian or non-magnesian. Elie de Beaumont calculated that on the assumption that one out of every two equivalents of carbonate of lime was replaced by carbonate of magnesia, the conversion of limestone into dolomite would be attended with a reduction of the volume of the mass to the extent of 12.1 per cent. It is certainly remarkable in this connection that large masses of dolomite, which may be conceived to have once been limestone, have the cavernous, fissured