

ering, when it is found filling or lining cavities, or diffused through the capillary interstices of minerals and rocks. It probably never occurs as an original ingredient in the massive crystalline rocks, such as granite, felsite, and lavas. Under the microscope, calcite is readily distinguishable by its intersecting cleavage lines, by a frequent twin lamellation (sometimes giving interference colors), strong double refraction, weak or inappreciable pleochroism, and characteristic iridescent polarization tints of gray, rose and blue.

From the readiness with which water absorbs carbon-dioxide, from the increased solvent power which it thereby acquires, and from the abundance of calcium in various forms among minerals and rocks, it is natural that calcite should occur abundantly as a pseudomorph replacing other minerals. Thus, it has been observed taking the place of a number of silicates, as orthoclase, oligoclase, garnet, augite and several zeolites; of the sulphates, anhydrite, gypsum, barytes, and celestine; of the carbonates, aragonite, dolomite, cerussite; of the fluoride, fluor-spar; and of the sulphide, galena. Moreover, in many massive crystalline rocks (diorite, dolerite, etc.), which have been long exposed to atmospheric influence, this mineral may be recognized by the brisk effervescence produced by a drop of acid, and in microscopic sections it appears filling the crevices, or sending minute veins among the decayed mineral constituents. Calcite is likewise the great petrifying medium: the vast majority of the animal remains found in the rocky crust of the globe have been replaced by calcite, sometimes with a complete preservation of internal organic structure, sometimes with a total substitution of crystalline material for that structure, the mere outer form of the organism alone surviving.<sup>32</sup>

**Aragonite** ( $\text{CaCO}_3$ ), harder, heavier, and much less abundant than calcite, which is the more stable form of calcium-carbonate; occurs with beds of gypsum, also in mineral veins, in strings running through basalt and other igneous rocks, and in the shells of many mollusca. It is thus always a deposit from water, sometimes from warm mineral springs, sometimes as the result of the internal alteration of rocks,

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it occurs as calcite; that in nautilus, sepia, most gasteropods, many lamelli-branches, etc., it is aragonite; and that in not a few cases the two forms occur together, or that the carbonate of lime is hardened by an admixture of phosphate. *Quart. Journ. Geol. Soc.* 1879. Address, p. 61.

<sup>32</sup> See index sub voc. Calcite.