

essential constituents of many granites and other plutonic rocks. The more basic forms (labradorite, anorthite) are generally absent where free silica is present; but occur in the more basic igneous rocks (basalts, etc.).

Considerable differences are presented by the triclinic feldspars in regard to weathering. On an exposed face of rock they lose their glassy lustre and become white and opaque. This change, as in orthoclase, arises from loss of bases and silica, and from hydration. Traces of carbonates may often be observed in weathered crystals. The original steam cavities of old volcanic rocks have generally been filled with infiltrated minerals, which in many cases have resulted from the weathering and decomposition of the triclinic feldspars. Calcite, prehnite, and the family of zeolites have been abundantly produced in this way. The student will usually observe that where these minerals abound in the cells and crevices of a rock, the rock itself is for the most part proportionately decomposed, showing the relation that subsists between infiltration-products and the decomposition of the surrounding mass. Abundance of calcite in veins and cavities of a feldspathic rock affords good ground for suspecting the presence in the latter of a lime-feldspar.<sup>23</sup> (See under "Albitization," postea, p. 1040.)

Saussurite, formerly described as a distinct mineral species, is now found to be the result of the decomposition of feldspars, which have thus acquired a dull white aspect and contain secondary crystallizations (zoisite) out of the decomposed substance of the original feldspar. Such saussuritic feldspars occur in varieties of gabbro and diorite. Under the microscope they present a confused aggregate of crystalline needles and granules imbedded in an amorphous matrix. (See postea, p. 1040.)

**Leucite** ( $K_2O$  21.53,  $Al_2O_3$  23.50,  $SiO_2$  54.97) is a markedly volcanic mineral, occurring as an abundant constituent of many ancient and modern Italian lavas, and in some varieties of basalt. Under the microscope, sections of this mineral are eight-sided or nearly circular, and very commonly contain inclosures of magnetite, etc., conforming in arrangement to the external form of the crystal or disposed radially.

**Nepheline** ( $Na_2O$  17.04,  $Al_2O_3$  35.26,  $K_2O$  6.46,  $SiO_2$  41.24), essentially a volcanic mineral, being an abundant constit-

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<sup>23</sup> A valuable essay on the stages of the weathering of triclinic feldspar as revealed by the microscope was published by G. Rose in 1867. *Zeitsch. Deutsch. Geol. Ges.* xix. p. 276.