

uent of phonolite, of some Vesuvian lavas, and of some forms of basalt, presents under the microscope various six-sided and even four-sided forms, according to the angles at which the prisms are cut.²⁴ Under the name of *Elaeolite* are comprised the greenish or reddish, dull, greasy-lustred, compact or massive varieties of nepheline, which occur in some syenites and other ancient crystalline rocks.

THE MICA FAMILY embraces a number of minerals, distinguished especially by their very perfect basal cleavage, whereby they can be split into remarkably thin elastic laminæ, and by a predominant splendid pearly lustre. They consist essentially of silicates of alumina, magnesia, iron and alkalies, and may be conveniently divided into two groups, the *white micas*, which are silicates of alumina with alkalies, iron and magnesia, and the *black micas*, in which the magnesia and iron play a more conspicuous part.

Muscovite (Potash-mica, white mica, Glimmer, K_2O 3.07-12.44, Na_2O 0-4.10, FeO 0-1.16, Fe_2O_3 0.46-8.80, MgO 0.37-3.08, Al_2O_3 28.05-38.41, SiO_2 43.47-51.73, H_2O 0.98-6.22), abundant as an original constituent of many crystalline rocks (granite, etc.), and as one of the characteristic minerals of the crystalline schists; also in many sandstones, where its small parallel flakes, derived, like the surrounding quartz grains, from older crystalline masses, impart a silvery or "micaceous" lustre and fissility to the stone.²⁵ The persistence of muscovite under exposure to weather is shown by the silvery plates of the mineral, which may be detected on a crumbling surface of granite or schist where most of the other minerals, save the quartz, have decayed; also by the frequency of the micaceous lamination of sandstones.

Biotite (Magnesia-mica, black mica, MgO 10-30 per cent) occurs abundantly as an original constituent of many granites, gneisses, and schists; also sometimes in basalt, trachyte, and as ejected fragments and crystals in tuff. Its small scales, when cut transverse to the dominant cleavage, may usually be detected under the microscope by their remarkably strong dichroism, their fine parallel lines of cleavage, and their frequently frayed appearance at the ends. Under the action of the weather it assumes a pale, dull, soft

²⁴ On the microscopic distinction between nepheline and apatite, see Fouqué and Michel-Lévy, "Minéral. Micrograph." p. 276.

²⁵ On the microscopic determination of the micas, see Fouqué and Michel-Lévy, op. cit. p. 333.