

the microscope, augite in thin slices is only very feebly pleochroic, and presents cleavage lines intersecting at an angle of  $87^{\circ} 5'$ . It is often remarkable for the amount of extraneous materials inclosed within its crystals. Like some feldspars, augite may be found in basalt with merely an outer casing of its own substance, the core being composed of magnetite, of the ground-mass of the surrounding rock, or of some other mineral (Fig. 7). The distribution of augite resembles that of hornblende; the pale, non-aluminous varieties are more specially found among gneisses, marbles, and other crystalline, foliated, or metamorphic rocks; the dark-green or black varieties enter as essential constituents into many igneous rocks of all ages, from Palæozoic up to recent times (diabase, basalt, andesite, etc.). Its weathering also agrees with that of hornblende. The aluminous varieties, containing usually some lime, give rise to calcareous and ferruginous carbonates, from which the fine interstices and cavities of the surrounding rock are eventually filled with threads and kernels of calcite and strings of hydrous ferric oxide. In basalt and dolerite, for example, the weathered surface often acquires a rich yellow color from the oxidation and hydration of the ferrous oxide.

*Omphacite*, a granular variety of pyroxene, grass green in color, and commonly associated with red garnet in the rock known as eclogite.

*Diallage*, a variety of augite, characterized by its somewhat metallic lustre and foliated aspect, is especially a constituent of gabbro.

**Rhombic-Pyroxenes.**—There are three rhombic forms of pyroxene, which occur as important constituents of some rocks, Enstatite, Bronzite and Hypersthene. *Enstatite* occurs in lherzolite, serpentine, and other olivine rocks; also in meteorites. *Bronzite* is found under similar conditions to enstatite, from which it is with difficulty separable. It occurs in some basalts and in serpentines; also in meteorites. Bronzite and enstatite weather into dull green serpentinous products. *Bastite* or Schiller-spar is a frequent product of the alteration of Bronzite or Enstatite, and may be observed with its characteristic pearly lustre in serpentine. *Hypersthene* occurs in hypersthene and hypersthene-andesite; also associated with other magnesian minerals among the crystalline schists.

**Olivine** (Peridot, MgO 32.4–50.5, FeO 6–29.7, SiO<sub>2</sub> 31.6–42.8) forms an essential ingredient of basalt, likewise the main part of various so-called olivine-rocks or peridotites