

B. HEMI-CRYSTALLINE.¹⁰⁰—This division probably comprehends the majority of the massive eruptive or igneous rocks. It is distinguished by the occurrence of what appears to the naked eye as a compact or finely granular ground-mass, through which more or less recognizable crystals are scattered. Examined with the microscope, this ground-mass is found to present considerable diversity (Figs. 16, 18, 32). It may be (1) wholly a glass, as in some basalts, trachytes, and other volcanic products; (2) partly devitrified through separation of peculiar little granules and needles (crystallites and microlites) which appear in a vitreous base; (3) still further devitrified, until it becomes an aggregation of such little granules, needles, and hairs, between which little or no glass-base appears (micro-crystallic); or (4) "microfelsitic" (petrosiliceous), closely related to the two previous groups, and consisting of a nearly structureless mass, marked usually with indefinite or half-effaced granules and filaments, but behaving like a singly-refracting, amorphous body (p. 204).

In rocks belonging to this type, a *spherulitic* structure has sometimes been produced by the appearance of globular bodies composed of a crystalline internally radiating substance, sometimes with concentric shells of amorphous material. In many cases, spherulites are only recognizable with the microscope, when they each present a black cross between crossed Nicol-prisms, and thereby characteristically reveal the *microspherulitic* structure (Figs. 7 and 17).¹⁰¹

¹⁰⁰ For this structure the term "mixed" has been proposed, as being a mixture of the crystalline and amorphous (glassy) structures. It has been designated by Fouqué and Michel-Lévy "trachytoid," as being typically developed among the trachytes (postea, p. 288). It is called "hypocrystalline" by Rosenbusch.

¹⁰¹ Fouqué and Michel-Lévy, "Min. Micrograph." Some remarkably beautiful examples of microspherulitic structure occur in the quartz-porphyrries that traverse the lower Cambrian tuffs at St. David's. Q. J. Geol. Soc. xxxix. p. 313.