

bodies have been drawn together out of the surrounding glass. Numerous rod-like microlites diverge from the crystal, and these are more or less thickly crusted with the simpler and smaller forms.⁹⁶ In Fig. 14, the remarkably beautiful structure of an Arran pitchstone is shown; the glassy base being crowded with minute microlites of hornblende which are grouped in a fine feathery or brush-like arrangement round tapering rods. In this case, also, we see that the glassy base has been clarified round the larger individuals by the abstraction of the crowded smaller microlites. By the progressive development of crystallites, microlites, or crystals during the cooling and consolidation of a molten rock, a glass loses its vitreous character and becomes lithoid; in other words, undergoes devitrification.

The characteristic amorphous or indefinitely granular and fibrous or scaly matter, constituting the microscopic base in which the definite crystals of felsites and porphyries are imbedded (pp. 278-281), has been the subject of much discussion. Between crossed Nicol-prisms it sometimes behaves isotropically, like a glass, but in other cases allows a mottled glimmering light to pass through. It is now well understood to be a product of the devitrification of once glassy rocks wherein the crystallitic and microlitic forms can still be recognized or have been more or less effaced by subsequent alteration by infiltrating water.⁹⁷

Every gradation in the relative abundance of crystallites may be traced. In some obsidians and other vitreous rocks, portions of the glass can be obtained with comparatively few of them; but in the same rocks we may not infrequently

⁹⁶ Proc. Roy. Phys. Soc. Edin. v. p. 246, Fig. 5. J. J. H. Teall, Q. J. Geol. Soc. xl. p. 221, Plate xii. Fig. 2a.

⁹⁷ See Zirkel, "Mik. Beschaff." p. 280. Rosenbusch, vol. ii. p. 60.