

from many points among the Western Territories;¹⁷⁸ it is met with also in New Zealand.

Pitchstone is a name given to the less perfectly glassy acid rocks, which are distinguished by a resinous or pitch-like lustre, and internally by a more advanced development of microlites than in obsidian. They thus represent a further stage of devitrification. These rocks are easily frangible, breaking with a somewhat splintery fracture, translucent on thin edges, with usually a black or dark green color, that ranges through shades of green, brown, and yellow to nearly white. Examined microscopically, they are found to consist of glass in which are diffused hair-like, feathery and rod-shaped microlites, or more definitely formed crystals of orthoclase, plagioclase, quartz, hornblende, augite, magnetite, etc. The pitchstone of Corriegills, in the island of Arran, presents abundant green, feathery, and dendritic microlites of hornblende (Fig. 14).¹⁷⁹ Occasionally, as in Arran, pitchstone assumes a spherulitic or perlitic structure. Sometimes it becomes porphyritic, by the development of abundant sanidine crystals (Isle of Eigg).

Pitchstone is found as (1) intrusive dikes, veins, or bosses, probably in close connection with former volcanic activity, as in the case of the dikes, which in Arran traverse Lower Carboniferous rocks, but are probably of Miocene age, and those which in Meissen send veins through and overspread the younger Palæozoic felsite-porphyrries; (2) sheets which have flowed at the surface, as in the remarkable mass forming the Scur of Eigg, which has filled up a river-channel of older Tertiary age.¹⁸⁰

Pumice (Ponce, Bimstein)—a general term for the loose, spongy, cellular, filamentous or froth-like parts of lavas. So distinctive is this structure, that the term *pumiceous* has come into general use to describe it. There can be no doubt that this froth-like rock owes its peculiarity to the abundant escape of steam or gas through its mass while still in a state of fusion. The most perfect forms of pumice are found among the acid lavas, but this type of rock may be met with in the other groups. Microscopic examination of a rhyolitic pumice reveals a glass crowded with enormous

¹⁷⁸ For an account of the obsidian of the Yellowstone Park see J. P. Iddings, 7th Rept. U. S. Geol. Surv. (1885-86), p. 255; consult also Zirkel, "Microscop. Petrog."

¹⁷⁹ See F. A. Gooch, Min. Mittheil. 1876, p. 185. Allport, Geol. Mag. 1881, p. 438.

¹⁸⁰ Quart. Journ. Geol. Soc. (1871), p. 303.