tures. They vary in color from nearly white through shades of gray, blue and red or brown to nearly black, often weathering with a white crust. They are close-grained in texture, often breaking with a sub-conchoidal fracture and showing translucent edges. Porphyritic felspars (both orthoclase and plagioclase) and blebs of quartz are of frequent occurrence. The flow-structure is occasionally strongly marked by bands of different color and texture, sometimes curiously bent and curled over, indicating the direction of movement of the still unconsolidated rock. The spherulitic structure also may be found so strongly marked that the individual spherules measure an inch or more in diameter, so that the rock seems composed of an aggregate of balls, and was formerly mistaken for a conglomerate (*Pyromeride*).[174] Under the microscope many of the typical structures of rhyolite can be detected in felsites. The ground-mass of these rocks has given rise to much discussion, but it is now generally recognized as a more or less altered condition of the devitrification of an original vitreous mass (p. 207). Secondary changes have in large measure destroyed the original microlitic structure, but traces of it can often be found, while the spherulitic and perlitic forms frequently remain almost as fresh as in a recent rock. Felsites with a large proportion of alkalies, especially soda, have been called *Keratophyres*.[175]

Felsites have been found abundantly as interbedded lavas with tuffs and agglomerates associated with Silurian and older rocks in Wales and Shropshire.[176] Soda-felsites or keratophyres have been found to play a considerable part among the materials erupted by the Lower Silurian volcanoes of the southeast of Ireland.[177]

The **vitreous acid rocks** form an interesting group in which we may still detect what was probably the original condition

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[174] On nodular felsites see G. Cole, Quart. Journ. Geol. Soc. xli. (1885), p. 162; xlii. p. 183; Miss Raisin, op. cit. xlv. (1889), p. 247. Harker "Bala Volcanic Rocks," 1889, p. 28.

[175] Gümbel, "Palaeolit. Eruptivgest. Fichtelgebirg." (1874), p. 43. Rosenbusch, "Mikrosop. Physiog." ii. 434.

[176] Mr. Allport described some ancient forms of perlitic structure from Shropshire, in what were probably once ordinary rhyolites, Q. J. Geol. Soc. xxxiii. p. 449; and Mr. Rutley showed the presence of the same structure among the Lower Silurian lavas of North Wales. Op. cit. xxxv. p. 508.

[177] F. H. Hatch, Mem. Geol. Surv. Ireland, Explanation of Sheet 130; Geol. Mag. 1889, p. 70.