

§ 1. Bosses

Bosses or amorphous masses consist chiefly of crystalline, coarse-textured rocks. Granite and syenite are the most conspicuous examples, but various quartz-porphyrines, felsites, trachytes, diorites, gabbros, diabases, andesites, dolerites, etc., also occur. Where rocks assume this form as well as that of sheets, dikes, and contemporaneous beds, it is commonly observed that they are more coarsely crystalline when in large amorphous masses than in any other form. Pyroxenic rocks afford many examples of this characteristic. In the basin of the Forth, for instance, while the outflows at the surface have been fine-grained basalts, the masses consolidated underneath have generally been coarse dolerites or diabases.³

In the consolidation of an igneous rock, the more basic minerals have generally crystallized out first, and the last portions of the mass to solidify have not infrequently a notably more acid character than those which solidified first. Hence the margin of an eruptive mass may show a more basic composition than the central portions which cooled more slowly. A remarkable range of composition may thus be found within the same boss.⁴ Again, if during the process of consolidation a rock should be ruptured and portions of the still liquid matter be forced into the rents, these veins or squirts will generally be found to be decidedly more acid than the rock in which they lie (pp. 384, 445, 457).

Granite.—It was once a firmly-held tenet that granite is the oldest of rocks, the foundation on which all other rocks

³ Trans. Roy. Soc. Edin. xxix. p. 493, 1879.

⁴ Teall and Dakyns, Quart. Journ. Geol. Soc. 1892, p. 104.