

erals, varying in different proportions, and are rather modes of the same rock than different species. They pass by gradation into each other, as one or other of their constituent minerals becomes, more or less, abundant; they alternate with each other in various situations, and may be regarded as contemporaneous. It may, however, for the convenience of description, be proper to treat of each separately.

Rocks of the first Class.

Granite is considered as the foundation rock, on which slate rocks and all secondary rocks are laid. From its great relative depth, granite is not frequently met with, except in alpine situations, where it appears to have been forced through the more superficial covering of the globe. Where granite rises above the surface, the beds of other rocks in the same district generally rise towards it, and their angles of elevation increase as they approach nearer to it.* Granite is composed of the three minerals described in the third chapter,—quartz, felspar, and mica,—which are more or less perfectly crystallized, and closely united together.

The three minerals of which granite is composed vary, much, in their proportions in different granitic rocks, and often, in specimens from the same rock, the crystals are large, or small, or equally intermixed, in one part, and in another part, quartz or felspar greatly predominates. Some granites are composed of small grains, and have large crystals of felspar interspersed; these are denominated porphyritic granites. Stones of this kind are common in the foot-pavements of London.†

Felspar constitutes by far the largest part of granite: the more common colours are white and red; it is sometimes in a soft or decomposing state, and appears earthy. In some granites, the crystals of felspar are distinctly formed. Quartz, generally, occurs in small irregular shaped grains, which have a vitreous lustre. The mica, in granite, occurs, most commonly, in small shining scales, which are, generally, either black, or whitish and silvery. It, sometimes, occurs in large hexagonal plates; but this is, more commonly, the case in the granite that forms veins in granitic mountains; such veins, with large plates of mica, are frequent near Aberdeen, in

* Some writers derive the name from *geranites*, a word used by Pliny to denote a particular kind of stone; others, with more probability, suppose that the name originated from its granular structure, or the grains of which it is composed.

† Specimens of Cornish and Scotch granites are not difficult to procure in London, as they are commonly used for paving-stones. In the former, the felspar is white; the mica appears like glistening scales, which have a tarnished semi-metallic lustre. The quartz has a vitreous appearance, and is of a light grey colour. In Scotch granite, the felspar has more commonly a reddish-brown colour. The mica is, not unfrequently, black and splendid, and may be divided into thin scales by the point of a penknife: this distinguishes it from hornblende, which is sometimes intermixed with this granite.