

MacCulloch justifies his classification ; in which rocks are often grouped under one head, not because they consist of the same ingredients, or of similar combinations of related minerals, but because they are related in age or position with regard to the strata, or fulfil other geological functions in common. In popular language, the mutual mixture of the crystals constitutes *granitic*; the separation of certain crystals defines the *porphyritic*; and peculiar divisional planes characterise the *basaltic* rocks; but every one of these circumstances belongs to almost every combination of felspar, quartz, mica, and hornblende. If we bear in mind that, in describing phenomena (for which chiefly technical names are useful), the first question to be answered is always with *what* these phenomena are associated, we shall see great reason to regret the neglect of eminent modern observers, who are satisfied with such terms as "trap" (which may be felspathic or hornblendic, porphyritic or amygdaloidal), or "granite," which may be a binary compound of felspar and quartz; a ternary mixture of quartz, felspar and mica; a quaternary union of quartz, felspar, mica, and hornblende, with or without large interspersed crystals of felspar, titaniferous iron, molybdena, apatite, &c., or may have the mica replaced by other congeneric substances.

This has been forcibly pointed out by Mr. Scrope, who has proposed a very intelligible plan of arrangement for volcanic rocks, on the basis of the relative abundance of the two conspicuous minerals felspar and hornblende (or augite), which, as before observed, compose the greater part of the igneous rocks of every age.

Mr. Scrope's synopsis of the species of volcanic rocks is as follows. (*Journal of Science*, vol. xxi.)

Trachyte.

- A. Compound trachyte with mica, hornblende, or augite, sometimes both, and grains of titaniferous iron.
- B. Simple trachyte, without any visible ingredient but felspar.
- C. Quartziferous trachyte, containing numerous crystals of quartz.