

stones, viz. quartz, felspar, and mica principally ; but they are far more distinct in their characters, less worn by watery attrition, and more evidently allied to granite. The argillaceous rocks, which often accompany them, (clay slate, grauwacke slate, &c.) have nearly the same chemical composition as common clays and shales among the secondary rocks ; but the degree of induration and the whole structure of the rocks require the supposition of their having undergone the influence of very different circumstances. In the same way the primary calcareous rocks, though chemically undistinguishable from secondary limestones, are so crystallised in texture as to leave no doubt that modifying agencies of great importance have operated on them since their deposition.

If we seek to ascertain the origin of the materials of the oldest or lowest of all the known systems of strata, and take characteristic specimens of gneiss and mica schist for the purpose, we shall be struck with the great resemblance they offer to granite, in the kind, proportionate abundance and admixture, even colour and aspect, of the constituent quartz, felspar, mica, hornblende, &c. So close is the resemblance, that some writers appear disposed to allow for these stratified granitoid rocks, an origin not very distinct from the igneous origin of granite ; but careful attention discloses points of disagreement which are equally important, and tend to a different opinion. Let any one, for example, compare in well characterised granite and gneiss the constituents, felspar and mica : in granite these are always perfectly crystallised within, and have regular external geometrical figure ; in gneiss the internal crystallisation remains, but the felspar is rounded like sand or small pebbles, or fragmented like a broken crystal, and the mica is bent and contorted by irregular pressure among the felspar and quartz. Add to these circumstances the lamination of the masses, and we see clearly that the ingredients of gneiss and mica schist resemble granite, because they have been derived from granitic rocks ; but they differ because they were accumulated