

tegration of the mass. It remains to be added that syenitic masses are often very variable as regards their composition ; the hornblende is sometimes wanting, in which case we can only recognise an ancient granite. In other instances the hornblende predominates to such a degree, that a large or small-grained *diorite*, or greenstone, results. The geologist should be prepared to observe these transitions, which are apt to lead him into error if passed over without being noticed.

*Protogine* is a talcose granite, composed of felspar, quartz, and talc or *chlorite*, or decomposed mica, which take the place of the usual mica. Excessively variable in its texture, protogine passes from the most perfect granitic aspect to that of a porphyry, in such a manner as to present continual subjects of uncertainty, rendering it very difficult to determine its geological age. Nevertheless, it is supposed to have come to the surface before and during the coal-period ; in short, at Creusot, protogine covers the coal-fields so completely, that it is necessary to sink the pits through the protogine, in order to penetrate to the coal, and the rock has so manifestly acted on the coal-measure strata, as to have contorted and metamorphosed them. Something analogous to this manifests itself near Mont Blanc, where the colossal mass which predominates in that chain, and the peaks which belong to it, consist of protogine. But as no such action can be perceived in the overlying rocks of the Triassic period, it may be assumed that at the time of the deposition of the New Red Sandstone the protoginous eruptions had ceased.

It is necessary to add, however, that if the protogine rises in such bold pinnacles round Mont Blanc, the circumstance only applies to the more elevated parts of the mountain, and is influenced by the excessive rigour of the seasons, which demolishes and continually wears away all the parts of the rock which have been decomposed by atmospheric agency. Where protogine occurs in milder climates—around Creusot, and at Pierre-sur-Autre, in the Forez chain, for instance—the mountains show none of the scarped and bristling peaks exhibited in the chain of Mont Blanc. Only single isolated masses occasionally form *rocking-stones*, so called because, resting with a convex base upon a pedestal also convex, but in a contrary way, it is easy to move these naturally balanced blocks, although from their vast size it would require very considerable force to displace them. This tendency to fashion themselves into rounded or ellipsoidal forms belongs, also, to other granitic rocks, and even to some of the variegated sandstones. The rocking-stones have often given rise to legends and popular myths.