

instances of the same nature are cited by Mr. Farey.* Before we proceed to examine the course and position of these beds in detail, it will be convenient to give a general view of their mineralogical character: this, as is usual in such formations, is subject to frequent and great changes. The prevailing variety is an amygdaloidal trap; consisting of a compact iron-coloured paste, (probably a fine grained basalt) containing nodules of various sizes, from small granular spots, to that of an hazel nut, or larger, of whitish calcareous spar, and of green earth. Agatine nodules are of more rare occurrence, affording specimens of onyx, chalcedony, jasper, and the quartz crystals, locally termed Derbyshire Diamonds. The varieties of zeolite common in rocks of this family elsewhere, have also occasionally been found in these. The decomposition of the imbedded nodules, frequently occasions the amygdaloid to assume a vesicular and lava like character. The amygdaloid sometimes passes into ordinary basalt, which is as usually characterised by its tendency to decompose into large spherical masses; and by occasionally assuming an irregularly columnar texture (an instance of which may be seen in the deep ravine called Cave dale near Castleton. Greenstone distinctly crystallised is also seen in the same ravine and other places. From the retentive nature of the clay a line of ponds is often found along the bassets of the toadstone; a circumstance which assists in tracing their course. A variety of a finely gritty texture, and yellow colour, which may perhaps be called a trap tufa, occurs in Harborough rocks near Brassington, where it appears to have been quarried as a freestone. On decomposition, the trap passes into a clay of a bluish grey colour.

The prevailing structure is massive; but a laminated structure sometimes though very rarely occurs.

Mr. Whitehurst maintained that the metalliferous veins of the limestone strata were universally cut through by those of toadstone; and produced this as an argument proving their subsequent origin. Mr. Farey admits this to be the general fact, but adduces several exceptions; mentioning no less than nineteen instances in which the toadstone beds carried ore; usually however only in thin strings. Since the period of his publication, the veins of the Seven Rakes Mine near Matlock, which had before been worked in the 2nd or 3rd limestone, have been pursued with success and profit in the intervening

* Professor Buckland observed the nodules of the limestone thus imbedded in the trap of Derbyshire, to be occasionally surrounded by a thin crust of fibrous calcareous spar, exactly resembling that produced in instances of incipient fusion under pressure in Sir James Hall's experiments.