

mass in Cornwall lies on the moors north of St. Austell, and indicates the existence of more than one disturbing force. "There was an elevating force," says Professor Sedgwick,* "protruding from the St. Austell granite; and, if I interpret the phenomena correctly, there was a contemporaneous elevating force acting from the south; and between these two forces, the beds, now spread over the surface from the St. Austell granite to the Dodman and Narehead, were broken, contorted, and placed in their present disturbed position. Some great disturbing forces," he observes, "have modified the symmetry of this part of Cornwall, affecting," he believes, "the whole transverse section of the country from the headlands near Fowey to those south of Padstow." This great granite-axis was upheaved in a line commencing at the west end of Cornwall, rising through the slate-rocks of the older Devonian group, continuing in association with them as far as the boss north of St. Austell, producing much confusion in the stratified masses; the granite-mass between St. Clear and Camel-ford rose between the deposition of the Petherwin and that of the Plymouth group; lastly, the Dartmoor granite rose, partially moving the adjacent slates in such a manner that its north end abuts against and tilts up the base of the Culm-trough, mineralising the great Culm-limestone, while on the south it does the same to the base of the Plymouth slates. These facts prove that the granite of Dartmoor, which was formerly thought to be the most ancient of the Plutonic rocks, is of a date subsequent to the Culm-measures of Devonshire, which are now regarded as forming part of the true carboniferous series.

VOLCANIC ROCKS.

Considered as a whole, the volcanic rocks may be grouped into three distinct formations, which we shall notice in the following order, which is that of their relative antiquity, namely:—1. *Trachytic*; 2. *Basaltic*; 3. *Volcanic or Lava formations*

TRACHYTIC FORMATIONS.

Trachyte (derived from *τραχύς*, *rough*), having a coarse, cellular appearance, and a rough and gritty feel, belongs to the class of volcanic rocks. The eruptions of trachyte seem to have commenced towards the middle of the Tertiary period, and to have

* See *Quarterly Journal of Geological Society*, vol. viii., pp. 9 and 10.