

the Vale of Eden, in the north, only a few thin beds of Magnesian Limestone lie in the middle of red sandstones and marls. Hard and fast lines of division by no means hold good in this case.

The Permian strata were for long considered as forming a lower part of the New Red Sandstone, till separated from it by Professor Sedgwick, in his celebrated Memoir on the Magnesian Limestone. They were afterwards called *Permian* by Sir Roderick Murchison, from the ancient Government of Perm in European Russia, where they are extensively developed.

Between the neighbourhood of Nottingham and Tynemouth in Northumberland, they have been subdivided by Professor King, into—

- Crystalline and other limestones.
- Brecciated limestone.
- Fossiliferous limestone.
- Compact limestone.
- Marl slate.

The Marl slate lies at the base, but these subdivisions are by no means constant, and the lines between them are not always definite. In many places the rock consists of round masses of all sizes, often as large as good-sized cannon balls, all cemented together. The section is finely exposed on the sea-cliffs between Hartlepool and South Shields, with great outlying masses of rock rising out of the sands like ruined castles, pierced by caverns with lofty ragged pillars and arches, worn out by the restless sea, and through which the daily tide flows. In their range from Nottingham to this district the Magnesian Limestone is interstratified with three minor beds of red marl.

In Nottinghamshire the position of these Permian strata to the underlying Coal-measures, and the over-