

iron, and coloured red or yellow. The thickness of the beds differs much in different situations, as might be expected from its lying upon the lower beds unconformably, and therefore resting upon an uneven surface. The lower new red sandstone in the western counties of England, and in various parts of the Continent, contains fragments of different rocks, cemented by ferruginous sand or marl, and masses of imperfect porphyry, and abundance of felspar, both in a decomposed state and in perfect crystals. The magnesian limestone, over the lower red sandstone, should here be described in the ascending series; but the description would disconnect the account of the upper and lower red sandstone, which are strictly but one formation. I shall, therefore, defer the description of the magnesian limestone, until that of the red sandstone is gone through. In fact the magnesian limestone does not always occur in the red sandstone.

New Red Sandstone and Marl above magnesian limestone. The beds have generally the prevailing colour which the name implies, but are often marked with irregular veins and spots, of a yellowish or bluish colour, and the sandstone is sometimes yellow or grey, with occasional spots of red.

The composition of different strata in this formation is extremely various: in some parts, we find an argillaceous marl in different states of induration, and, more or less, intermixed with calcareous earth. In other parts, we meet with regular strata of siliceous sandstone; and sometimes, we have a conglomerate sandstone, or a soft sandstone, enclosing rounded pebbles of quartz and Lydian stone, granite and porphyry, as in the rock on which Nottingham and the Castle stand. In the lower part of this division, as well as in that beneath the magnesian limestone, the beds are porphyritic, and contain imperfect crystals of felspar; sometimes, they pass into amygdaloid and trap. The fine siliceous sandstones, when closely examined, are often found to contain fragments of the neighbouring rocks: thus, the sandstone in the vicinity of Charnwood Forest, as before stated, contains fragments of slate and chlorite slate; and the conglomerate beds on the northern side of that range of hills, are composed principally of fragments of granitic and slate rocks. No formation presents such a great variety of mineral characters as the red marl and sandstone. In England, it has frequently been confounded with the red sandstone and conglomerate, that occur under the upper transition limestone, called by English geologists the old red sandstone. But the old red sandstone of foreign geologists, or *rothe-todte-liegende*,* the *grès ancien* of Daubuisson, covers the coal formation, and therefore corresponds with the lowest beds of the English red marl and sandstone.

* The name *Rothe-todte-liegende*, or *red dead lieg*, was first applied to what the English call the old red sandstone, below the coal formation, because no coal was found under it.