

England, in Scotland, and in Ireland this formation extends from north to south through the whole length of the country. "This old land," says Professor Ramsay,* "consisted in great part of what we now know as Wales, and the adjacent counties of Hereford, Monmouth, and Shropshire; of part of Devon and Cornwall, Cumberland, the Pennine chain, and all the mountainous parts of Scotland. Around old Wales, and part of Cumberland, and probably all round and over great part of Devon and Cornwall, the New Red Sandstone was deposited. Part, at least, of this oldest of the Secondary rocks was formed of the material of the older Palæozoic strata, that had then risen above the surface of the water. The New Red Sandstone series consists in its lower members of beds of red sandstone and conglomerate, more than 1,000 feet thick, and above them are placed red and green marls, chiefly red, which in Germany are called the Keuper strata, and in England the New Red Marl. These formations range from the mouth of the Mersey, round the borders of Wales, to the estuary of the Severn, eastwards into Warwickshire, and thence northwards into Yorkshire and Northumberland, along the eastern border of the Magnesian Limestone. They also form the bottom of the valley of the Eden, and skirt Cumberland on the west; in the centre of England the unequal hardness of its sub-divisions sometimes giving rise to minor escarpments, overlooking plains and undulating grounds of softer strata."

"Different members of the group rest in England, in some region or other," says Lyell, "on almost every principal member of the Palæozoic series, on Cambrian, Silurian, Devonian, Carboniferous, and Permian rocks; and there is evidence everywhere of disturbance, contortion, partial upheaval into land, and vast denudations which the older rocks underwent before and during the deposition of the successive strata of the New Red Sandstone group." ("Elements of Geology," p. 439.)

The *Muschelkalk* consists of beds of compact limestone, often greyish, sometimes black, alternating with marl and clay, and commonly containing such numbers of shells that the name of shelly limestone (*Muschelkalk*) has been given to the formation by the Germans. The beds are sometimes magnesian, especially in the lower strata, which contain deposits of gypsum and rock-salt.

The seas of this sub-period, which is named after the innumerable masses of shells inclosed in the rocks which it represents, included, besides great numbers of Mollusca, Saurian Reptiles of twelve different

* "The Physical Geography and Geology of Great Britain," 2nd ed., p. 60.