

PART II.

CHAPTER XVIII

DEVONIAN AND OLD RED SANDSTONE.

Introduction.

IN the limited area of the British Islands, to which we shall mostly confine our history, the Middle Palæozoic or Old Red Sandstone series exhibits two clearly marked types—one the Scottish and Welsh types of Old Red Sandstone and marls, poorly fossiliferous, save in fishes in Scotland; the second, the Devonian and Cornish type, consisting of slates, red and grey sandstones, compact crystalline and earthy limestones, which in places are rich in marine fossils. This type occurs in many parts of Europe, especially in Belgium, Russia, and Germany, and is well identified in North America, Africa, &c.

Scottish Type.—(a.) **The Lower Old Red Sandstone** occurs on the north side of the Grampians, and on the north-west side of the Lammermuirs, chiefly as a mass of conglomerate and red sandstone. It occupies the whole of the broad belt of undulating country from Stonehaven to the mouth of the Eden, and thence south-west to Stirling, Callender, and Menteith. At Lesmahago, on the south side of the Firth of Forth, the lowest portion of the Old Red occurs, where it passes down into the Upper Silurian. Crustacea (*Pterygotus*) and fish-remains, *Cephalaspis*, *Dipterus*, and *Cocosteus*, with fragmentary plants, occur in the flagstones and sandstones.

(b.) **The Upper Old Red Sandstone** in Scotland occurs as patches in red and yellow sandstone. At Elgin the bones and scales of *Bothriolepis* and *Holoptychius*, with other characteristic fishes, occur. On the south side of the Forth it covers a large part of Haddingtonshire, Berwickshire, and Roxburghshire, usually resting upon the eroded or worn edges of the Silurian rocks, and covered by the Carboniferous series. In Ayrshire it appears associated with contemporaneously ejected igneous rocks, and extends from the head of Ayr southwards to the valley of the Girvan.