

hand, the upper parts of the Devonian system might in several respects be claimed as fairly belonging to the Carboniferous system above.

J. B. Jukes proposed a solution of the Devonian problem, the effect of which would be to turn the whole of the Devonian rocks into Lower Carboniferous, and to place them above the Old Red Sandstone, which would thus become the sole representative in Europe of the interval between Silurian and Carboniferous time.¹³⁰ In the following descriptions an account will first be given of the Devonian type and then of the Old Red Sandstone.

I. DEVONIAN TYPE

§ 1. General Characters

ROCKS.—Throughout central and western Europe, the Devonian system presents a remarkable persistence of petrographical characters, indicating probably the prevalence of the same kind of physical conditions over the area during the period when the rocks were accumulated. The lower division consists mainly of sandstones, grits, and graywackes, with slates and phyllites. These rocks attain a great development on the Rhine, where they form the material through which the picturesque gorges of the river have been eroded. In the central zone, limestones predominate, often crowded with the corals and mollusks of

¹³⁰ See his papers in *Journ. Roy. Geol. Soc. Ireland*, 1865, i. pt. 1, new ser., and *Quart. Journ. Geol. Soc.* xxii. 1866, and his pamphlet on "Additional Notes on Rocks of North Devon," etc. 1867. The "Devonian question," as it has been called, has evoked a large number of papers, of which, besides those cited in subsequent pages, the following may be enumerated: Prof. Hull, *Q. J. Geol. Soc.* xxxv. 1879, p. 699; xxxvi. 1880, p. 255. A. Champernowne, *Geol. Mag.* v. 2d Ser. 1878, p. 193; vi. 1879, p. 125; viii. 1881, p. 410. The general verdict has been adverse to the explanation of the structure of North Devon proposed by Jukes.