

Besides this coal, many strata of the carboniferous order contain subordinate beds of a rich argillaceous iron ore, which the near position of the coal renders easy of reduction to a metallic state; and this reduction is further facilitated by the proximity of limestone, which is requisite as a flux to separate the metal from the ore, and usually abounds in the lower regions of the carboniferous strata.

A formation that is at once the vehicle of two such valuable mineral productions as coal and iron, assumes a place of the first importance among the sources of benefit to mankind; and

deposited at the bottom of the sea. The fresh-water shells that occur occasionally in the upper regions of this great series show that these more recent portions of the coal formation were deposited in water that was either brackish or entirely fresh. It has lately been shown that fresh-water deposits occur also occasionally in the lower regions of the carboniferous series. (See Dr. Hibbert's account of the limestone of Burdie House, near Edinburgh; Transactions of the Royal Society of Edinburgh, vol. xiii.; and Professor Phillips's Notice of fresh-water shells of the genus *Unio*, in the lower part of the coal series of Yorkshire; London Phil. Mag. Nov. 1832, 349.) The causes which collected these vegetables in beds thus piled above each other, and separated by strata of vast thickness, composed of drifted sand and clay, receive illustration from the manner in which drifted timber from the existing forests of America is now accumulated in the estuaries of the great rivers of that continent, particularly in the estuary of the Mississippi, and on the river Mackenzie. See Lyell's Principles of Geology, 3rd edit. Vol. iii. Book iii. Ch. xv. and Prof. Phillips's Article Geology in Encyclopædia Metropolitana, Pt. 37, page 596.