

The irregular undulations of the strata in this district, and their concealment through extensive tracts by overlying deposits, present formidable obstacles to the attempt to trace the series of beds which constitute this coal-field; it probably exhibits between fifty and sixty coal-seams, most of them very thin, hardly any exceed one yard, or could be profitably worked, were it not for the highly improved state of machinery. As in the south Welsh-field, shale predominates in the lower, and the Penant grit Rock in the middle part of the series; the shale beds frequently contain beautiful impressions of ferns and muscle shells.

There are several extensive faults, some of which elevate the strata more than one hundred feet.

The outer edge of this basin consists, on every side but a small portion of the east (where the horizontal and more recent depositions conceal its substrata) of more or less elevated ridges (hereafter to be described) of carboniferous limestone and old red sandstone, millstone-grit being occasionally interposed. Round Nailsea, on the west of this coal-field, a depression in the limestone ridges forming its border on that side, includes a smaller attendant coal basin about four miles long and one and a half broad; here ten seams of coal have been discovered.

#### (b) *Millstone Grit.*

A conglomerate and coarse grit of this formation may be traced in the South Welsh coal-field, near Merthyr, and the head of the Neath valley, on the north of the South Welsh coal-field; and near Bridgend and Caerphilly on the south interposed between the coal-measures and subjacent lime. In the forest of Dean it has not yet been described. In the Gloucester and Somerset basin, beds of conglomerate in a hard compact cherty sandstone, often highly ferruginous, occupy a similar position; these may be seen on the west of the coal-field at Brandon hill close to Bristol, and lying upon the limestone on both sides the gorge at Clifton, at the eastern extremity of the field resting upon the limestone in the defile of Wick Rocks; at the northern near Croomhall, and at the southern near Coleford.

#### (b) *Carboniferous Limestone.*

Strata of this rock, closely agreeing in all their characters and contents with those of Derbyshire, circle round all these coal-fields; its average thickness cannot fall short of