

The Subcarboniferous rocks of Great Britain include a limestone formation called often the "Mountain limestone," and also shales and sandstone. The limestone is the chief rock in southern England, where, near Bristol, it is 2000' thick and has shaly beds at base, the "Lower limestone shale." In Derbyshire, the limestone, 4000' in maximum thickness, is succeeded by a series of shales and sandstones with beds of limestone, called the Yoredale group. This Yoredale group is 2300' thick in North Staffordshire, making a total thickness of 6300'; it is 4500' thick in Lancashire. In Wales the thickness of the limestone is but 500', and in Anglesey, 200' to 500'.

In Scotland, the Subcarboniferous rocks are mainly fragmental, and are called the Calciferous limestone group.

In southwestern Ireland, the limestone has a thickness, in Limerick, of 3600'. But in northern Ireland, the fragmental beds increase in amount and thereby become similar to those of Scotland, as if they were their continuation.

In Northumberland, in northern England, fragmental beds greatly predominate; the total maximum thickness is 8000', and of this, only 20' to 50' is limestone; they have received a distinct name, — that of the *Bernician* group, — because they are so unlike the rest and without any natural subdivision; and those of the valley of the Tweed and the vicinity have been termed the *Tuedian* group.

The Carboniferous limestone of the Lake District and Yorkshire was called the "Scar limestone" by Sedgwick, from the topographic features, or "scars" produced by the rock. It makes a strong impression on the scenery of many parts of England. "Massive beds of it," says Prestwich, "rising from beneath the Mesozoic strata in the neighborhood of Frome and Wells, constitute the main range of the Mendips. At Clifton it is traversed by the gorge of the Avon. A few miles to the north the limestone passes under the great plains of central England to reappear in the picturesque hills of Derbyshire, the bluffs of Matlock, the scarps of Dovedale, and the high ridges of Buxton. In Yorkshire the limestone hills, which rise to heights of 2000' to 2500' in the Pennine chain, are intersected by the many beautiful dales so characteristic of that district. The prevailing cold gray color of the limestone, the frequency of bared surfaces, and the innumerable caves — famous for their magnitude and their stalactites, or as the dens of Pleistocene Mammals — render the rocks easily recognizable, and contribute greatly to their scenic effects." The limestone contains much chert. Hinde has shown that the chert abounds in sponge-spicules; and Carter has observed facts illustrating the passage by solution of the spicules into chert.

The beds of the Coal-measures in England have generally at bottom the *Millstone grit*, answering to the Pottsville conglomerate of Pennsylvania. The thickness is 400 to 1000 feet in South Wales, about 1200 feet in the Bristol coal-field, 3000 to 5000 feet in the Lancashire region; but in the north of England only 500 feet, and in Scotland it is barely recognizable.

The Coal-measures in South Wales have a thickness of 7000 to 12,000 feet, and include more than 100 coal-beds, 120 feet in total thickness, 70 of which are worked. While the coal is bituminous near Swansea, it becomes anthracite to the west and north.

In the Forest of Dean, the thickness of the beds is 2400 feet, and they comprise at least 23 coal-beds; while in the Bristol coal-field, on the other side of the Severn, there are 5090 feet of Coal-measures, with 87 coal-beds.

In the south Lancashire coal region, which reaches nearly to Liverpool, the Coal-measures are stated to have a thickness of 7200 to 8000 feet, and to include more than 40 beds of coal over one foot in thickness, and in north