

gion of this coal field are abundantly loaded with nodules of argillaceous iron ore, and below these is a bed of millstone grit capable of enduring the fire, and used in constructing the furnaces ; still lower is the limestone necessary to produce the fusion of the ore. Pl. 65, Figs. 1, 2.

The great iron foundries of Derbyshire, Yorkshire, and the South of Scotland, afford other examples of the beneficial results of a similar juxtaposition, of rich argillaceous iron ore and coal.

“The occurrence of this most useful of metals,” says Mr. Conybeare,* “in immediate connexion with the fuel requisite for its reduction, and the limestone which facilitates that reduction, is an instance of arrangement so happily suited to the purposes of human industry, that it can hardly be considered as recurring unnecessarily to final causes, if we conceive that this distribution of the rude materials of the earth was determined with a view to the convenience of its inhabitants.”

Let us briefly consider what is the effect of mineral fuel, on the actual condition of mankind. The mechanical power of coals is illustrated in a striking manner, in the following statement in Sir J. F. W. Herschel’s admirable Discourse on the study of Natural Philosophy, 1831, p. 59.

“It is well known to modern engineers that

* Geology of England and Wales, p. 333.