

The coal mines in South Wales alone, would supply the present demand for 2,000 years to come. The collieries in Flintshire, Glamorganshire, Colebrook Dale, Shropshire, and at Kingswood, are in the vicinity of secondary limestone, while the deposits at Newcastle and Whitehaven are in secondary sandstone. The two latter, the one on the north-east, the other on the north-west coast, are supposed to form one deposit of numerous strata, extending across the island and beneath the sea. At Whitehaven the workings stretch a mile along, and 600 feet below the ocean. One of the collieries at Newcastle is 810 feet deep, and passes through seventy-three strata. The profitable stratum generally lies beneath all the others, and is called the main coal. About 2,355,000 chaldrons are annually produced at this place, but the provision may be almost deemed inexhaustible.

The origin of coal presents a subject of some difficulty, but it is now generally deemed to be vegetable. The lignite or fossilized wood retains its texture, and passes gradually into jet. Of this there are curious specimens at Bovey Tracy, in Devonshire, in the north-east of Ireland, and on the Rhine, between Cologne and Bonn. The action of water on turf or wood is sufficient to convert them into substances capable of yielding bitumen in distillation. This action, after a long continuance, may have produced the brown coal of Bovey; and when we see reeds filled and surrounded with sandstone, having the scaly bark converted into a true coal, its vegetable origin seems scarcely to be questioned. The same is true of impressions found in slate clay reduced to common coal. The vestiges of vegetables in coal measures increase in abundance as we approach the strata of coal; so that the vegetable matter which produced the coal was probably in the state of paste, and elaborated by suitable agents amidst the waters of the primæval deluge.—*Weekly Visitor*.

BLEACHING

Is the art of whitening linen, wool, cotton, silk, wax, also the materials of which paper is made, and other things. It is shown by experience, that organic bodies, after being deprived of life, and becoming solid and dry, lose their color, and become white by the influence of the air and the sun-beams. Upon this fact, the manner of bleaching, which was formerly in use, is grounded: since, however, the bleaching in the sun commonly requires a whole summer, Berthollet, in the year 1786, first proposed the use of chlorine. This, it is known, has so little corrosive power, that if diluted, it may be taken inwardly in a considerable quantity. This method has since been much improved, principally by Watt. — It has been found, however, that linen certainly may suffer, if too much acid is applied. In England, this acid, when used to bleach linen, is mixed with one half of muriate of lime dissolved in water. The quantity of this salt requisite for bleaching is very different, according to the different quality of linen. In manufactories of linen and cotton goods, the yarn or cloth passes through a number of successive processes, the principal of which are the steeping, in which the goods are fermented in an acescent liquid, at a temperature of about 100 degrees Fahr.; the bucking and boiling, in which a hot alkaline lie is made to percolate through them for some time; the souring, performed with diluted sulphuric acid; the bleaching with chlorine, in which the stuff is exposed to the action of some compound of that substance, usually chloride of lime, called *bleaching salt*. Various mechanical operations, washings and repetitions of the processes are commonly practised to complete the discharge of the color. The fibres of wool and silk are not bleached by chlorine, but, after being deprived of the saponaceous or gummy matter which adheres to them, are exposed to the fumes of burning sulphur to discharge their color.—*Id.*