

COAL.

[*Second Article.*]

Coal is generally separated into two great divisions, bituminous and anthracite. There are, besides, many varieties, such as brown, caking, cannel, cherry, glance, splint, stone, and wood coals. The bituminous coal derives its name from containing a large quantity of bitumen, or matter like tar, which the reader has probably often noticed oozing out of coal when burning. Its presence is very evident in the Albert and Grand Lake coals; indeed the latter is so highly bituminous as to make it less valuable for household purposes than it otherwise would be. The anthracite, which is the hard coal (so called) imported here from the United States, contains no bitumen. The bituminous, or ordinary coal, evidences, as we shewed in our first article, its vegetable structure; but in the anthracite it is impossible to detect anything to shew that it was formed from vegetable matter. Yet we know that they both have the same origin, from the fact that they are found in the same coal fields, the bituminous coal gradually losing its distinctive character, and becoming less and less bituminous as it approaches the anthracite, until at last it changes into the true hard coal. It has been found that the rocks which contain anthracite bear evidence of having been subjected to great heat; and it was undoubtedly this which drove from the coal, as originally formed, its bituminous and other volatile matter; or in other words, the ordinary coal exists as it was originally deposited, while the anthracite is a fossil charcoal. It is a singular fact, and worthy of notice, that anthracite, graphite (plumbago), and the diamond, are mainly composed of carbon, the first containing 80 to 90 per cent., the second 90 to 95 per cent., and the diamond nearly 100 per cent.; so that, coal which moves the steamboat and the locomotive, as well as the pencil of the artist, and the brightest jewel in the Queen's crown, are looked upon by the mineralogist as but varieties of one and the same substance. It may be added that they are all believed to be of vegetable origin.

Having decided that coal is a mineralized vegetable substance, the next point which claims our attention is:—Under what circumstances was so large a quantity of vegetable matter deposited? This question was at one time one of the greatest puzzles of geology. Two theories were set up and fiercely contended for. One was called the *drift theory*, and taught that vast masses of vegetable matter, great trees thrown down by the wind, or washed away by water, were carried by the rivers into the sea, and were there drifted by the ocean currents into estuaries, or bays, where, gradually losing the air contained in their cells, they sank, accumulating in masses to a great thickness, over which, in time, the sea deposited its sand bottom, which hardening into stone, effectually imprisoned them. The appearance of many of the fossil trees, the position in