

The evaporative power of these fuels, as fixed by Berthier's process (la voie sèche), would amount to 12·3 lbs. of water for each pound of coal consumed.

Evaporative power of the fuel.

He calculates that 6 lbs. of anthracite will evaporate 1 cubic foot of water under the ordinary circumstances of a steam engine boiler, and taking the average specific gravity of bituminous fuel at 1280, while that of anthracite is 1410, there is a difference of nearly 10 per cent. in favour of the latter, considering the space in which it can be stowed.

Rate of combustion.

This is an important consideration for its use on board steam vessels, but it is essential that its rate of combustion should be such as to raise steam rapidly, its capabilities for which the author then proceeds to examine, and deduces from the experiments that the combustion of the anthracite was carried on so as to produce a greater amount of evaporation, in a given time, than could be obtained from bituminous coal. This result is attributed in some degree to the use of heated air.

The author recommends that the anthracite should be supplied to the furnace by a hopper through the boiler,* wherein it is warmed before reaching the fire bars, which obviates the inconvenience of decrepitation, and insures regularity in the supply of steam.

Mr. Lowe. Mr. Lowe saw no reason to doubt the results recorded by so accurate an experimenter as Dr. Fyfe, which proved that anthracite was efficient just in the proportion of the carbon it contained, but he was at a loss to reconcile this with the opinion of Mr. C. W. Williams, who recommended the addition of bituminous substances to pure carbon, as a means of increasing the calorific power of fuel. He must repeat the opinion expressed by him on a former occasion, that the coal most free from elementary oxygen, would in practice be found the most effective fuel. Neither could any fuel be used too dry or too hot. At the gas works under his charge, a considerable economy had been effected by Mr. Croll's patent process of using the coke as it was drawn from the retorts, and thrown in an incandescent state into the furnaces.

* *Player's Patent.*