

The experiments proved conclusively that by this method of treatment coals containing a high percentage of ash and sulphur could be so prepared as to make a coke of good quality, at a treatment cost not exceeding ten cents per ton, and to these successful tests we owe the establishment of the iron and steel industry of Cape Breton.

Thus we see, from the outset, the fundamental importance of this branch of dressing which has made possible one of the greatest industries in Eastern Canada; this is further emphasized by the recent troubles in Canadian steel-coal circles brought about by coal being supplied which, it was claimed, could not be sufficiently purified by washing to make good metallurgical coke.

The Nova Scotia Steel & Coal Co. in 1896 purchased the entire property of the General Mining Association of London, which operated the well-known "Old Sydney" main seam at Sydney Mines, Cape Breton. The intention then was to utilize part of the coal mined for the manufacture of coke to be used in iron blast furnaces, and in 1899 the plant described in this paper was laid down at the colliery, the general scheme being similar to that of the plant previously erected at Ferrona. As originally designed, by Stein & Boericke, metallurgical engineers of Philadelphia, and erected, the plant was expected to handle 300 tons of coal per day of ten hours. It has, however, been much altered in details, chiefly of elevators and waste disposal, so as to have a uniform washing capacity throughout, and, as a consequence, the output is now over 500 tons per day.

The plant is situated in the immediate vicinity of the colliery, from which it formerly drew all its coals. Now, however, the coals treated are screenings collected in cars from several collieries, and are what is locally known as culm or duff, that is to say, the screenings removed from the run of mine coal as prepared for the market. These screenings include practically all the fire-clay contained in the clay parting between the coal seam and the roof and the foot wall. The undercutting being in the clay-band next the foot wall, the proportion of ash in these screenings is from two to three times as great as in the seam coal proper.

An outline of the whole process is shown in the appended sketch.

The cars of screenings are emptied, as required, into No. 1 elevator pit, and the coal is lifted by bucket elevator to a Robins belt conveyor, which carries it 135 ft., over sidings, to the breaker house, where it is lowered by chute to a modified type of Jeffrey rolls. These rolls are 24 inches in diameter, and turn at 180 and 270 revolutions, respectively, per minute in opposite directions.