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Creators: [Morris, Joseph L.](#)

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Early Working of Coal.*

CAPT. J. L. MORRIS.

READ AT LOGAN MEETING.

The first mention made in history, we believe, of coal in Scotland, occurs in a charter granted to the Abbot of Dunfermline in the year 1291, giving him and his monks the privilege of digging coal in the lands of Pittencrieff. It was several centuries after this, however, ere coal came to be generally used, so strong was the prejudice against it on account of the smoke and sulphurous fumes which it emitted. The imperfect fire-place in use, no doubt, had something to do with this, the ladies particularly being opposed to the use of coal, as they alleged that it spoiled their complexions. For a long time the only coal used was such as was obtained by quarrying a vein of the mineral which cropped out of the surface, and even when shafts were resorted to it was impossible to go deeper than a few fathoms for want of any efficient means of pumping the working clear of water. It is not much more than a century since a steam engine was first tried to effect this purpose in Scotland, and although it was a rude beginning, it very soon developed the industry into a position of great importance and magnitude. With improved drainage of coal mines came improved appliances for ventilation and for bringing the coal to the surface.

MINING SLAVES ONE HUNDRED YEARS AGO.

In its social aspects the history of coal mining in Scotland is of great interest. Nothing could so pointedly mark the progress which has been made, and the improvements which have been effected in the condition of the industrial classes during the present century than the contrast between the mining population of to-day and their surroundings and as they were a century ago. Not only was their daily toil carried on in the face of dangers and difficulties which now no longer exist, but they were controlled by a system of bondage or serfdom which, in some respects was even worse than slavery. A collier in a mine was bound to remain there for his whole lifetime, and he was transferred like an ordinary chattel from one purchaser to another. His children were not allowed to follow any other occupation, and could labor only in the mine, to which they were held to be attached by birth. Tramps and vagabonds who were not sufficiently wicked to deserve hang-

*Capt. Morris prefaced his paper by saying it was a compilation.

ing, were at times sentenced to life-long service in the mines, and every man thus disposed of had a collar riveted on his neck on which was engraved the name of the person to whom he had been thus gifted, and the date. In the year 1775 an act was passed by the Parliament abolishing this form of slavery, but some years elapsed ere the last remnant of it had disappeared. The miners and their families in Scotland, although no longer serfs, remained for half a century longer in a most degraded and wretched condition.

THE DISCLOSURES OF 1843.

The disclosures made before the royal commissioners who inquired into the condition of the mining population in the years 1840-43 revealed a condition of things that were scarcely credible. Women and children, many of the latter were infants, were treated in a manner which it is difficult to realize could have been tolerated in a professedly Christian country, within the memory of many who are now in the prime of life. Before machinery was applied to the raising of coal to the surface, it was all carried on the backs of women and children in creels, and these poor wretches had to toil up the shafts on dangerous ladders, and were subjected to treatment which was absolutely hideous. One poor child, only six years old, was found, whose daily task was to carry half a hundred weight of coal fourteen times from the bottom to the top of the shaft, a height equal to that of St. Paul's Cathedral. Nor was the lot of the women and children employed in the pit a whit better. It was their duty to draw the "hurleys" from the workings to the bottom of the shaft, and this they had to do crawling on their hands and knees like a dog, being yoked to the hurley by a rudely made harness. Not unfrequently the roadways were many inches deep in water, and this labor would be frequently continued for fifteen and even eighteen hours out of the twenty-four. These were the good old times that we sometimes hear the ignorant and foolish people representing as so much better than our own. Fortunately the mines regulation act of 1843 put an end to this scandalous state of things by excluding all females and young children from the underground workings.

THE CLYDESDALE COAL FIELD.

The Clydesdale is the most important of the coal fields of Scotland, more than one-half of the whole number of collieries north of the Tweed being situated upon it. It covers an area of more than 150 square miles, and the coal measures within it sometimes attain a thickness of 2,000 feet, and contain about eighteen workable seams. All of these, however, are not continuous throughout the field, and at their best they yield an aggregate thickness of about seventy feet. The Lanarkshire coals consist chiefly of varieties of common coal, namely, hard, or splint, soft, dross, &c. ; but here and there excel-

lent gas coal is found, such as at Auchenheath and Wilsontown, the former being regarded as the best of all Scotch coals. At Quarrelton, near Paisley, an abnormal development of coal occurs below the main or hurlet limestone, which is usually the lowest important bed in the limestone series. At Quarrelton a number of those seams come together and form a mass of coal more than thirty feet thick. This is the thickest seam in Scotland. The production of coal in Scotland has increased prodigiously since the passing of the mines regulation act in 1843, and it reached its maximum in 1883, when the total quantity brought to the surface was 21,225,797 tons, over twelve million tons being the product of Lanarkshire alone. Since 1883 the quantity mined both in Scotland and England has slightly diminished. Dr. Cleland in 1831 estimated that in Glasgow, when the population was 222,000, the consumption of coal annually was 437,000 tons. The average consumption of coal for the United Kingdom at the present time is not far short of four tons per head per annum, and as judging from the state of our atmosphere it may be safe to assume that we consume fully an average quantity per head in the city and suburbs. This would go to show that something like three million tons of coal are annually consumed within a radius of five miles from the Royal Exchange. The following figures show the total quantities of minerals brought to the surface in Scotland during the year 1886:

	TONS.
Coal.....	20,373,478
Iron stone	1,536,731
Oil shale.....	1,699,144
Fire-clay	429,736
Other minerals.....	30,584
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Total.....	24,039,673

The total number of persons employed in mining in Scotland in the same year—1886—was as follows :

	UNDER GROUND.	ABOVE GROUND.	TOTAL.
Coal.....	49,237	9,514	58,751
Iron stone	4,387	910	5,297
Shale, fire-clay, etc.	4,178	583	4,761
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Total.....	57,802	11,007	68,809

Of the 57,802 persons employed underground, and who, of course, were all males, 51,781 were above sixteen years of age ; and of the 11,007 employed above ground, 638 were females, and 9,305 of them males over sixteen years of age. There is no industry in the country which has been more seriously affected by legislation during the last half century, and there is none in which the beneficial influence of that interference is more conspicuous and ecided.