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*CHARACTERISTICS OF MINERS.*

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BY ANDREW ROY.

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Underground mining, whether of coal or other minerals, has ever been regarded as labor fraught with peculiar dangers and hardships. Most people, unaccustomed to its scenes from boyhood, experience some degree of horror at the thought of being buried, even for a few hours, in the bowels of the earth. Among the ancients, so great was the horror of mining, that all underground work was assigned to slaves and convicts. In Egypt and other ancient kingdoms, the mines were the property of the kings, and the miners were convicts, prisoners of war, and purchased slaves. Both sexes and children of all ages were compelled to labor in the mines, and they lived there day and night. The miners, divided into different gangs, were placed under overseers of different nationalities, and were chained to prevent them from mutiny and escape. Their labors were terribly exhausting. At thirty years of age the strongest men were worn down from the effects of mephitic gases, cruel treatment, and hard work, and many of them were forced to labor until they fell dead.

As late as the year 1775 the coal miners of Scotland were bound for life to work in the mines, and were transferable with the mine property. In 1606 one of the acts of the Scottish Parliament, passed that year, declared that all colliers who should leave their masters without their consent were to be esteemed and held as thieves, and full permission was given in the same act to all masters and owners of coal mines to lay hold of all vagabonds and sturdy beggars and compel them to work in the mines, to which occupation they were ever afterward bound.

In these modern days of civilization and enlightened education, however, the occupation of a miner is regarded with honor; all known and approved safeguards are thrown round him, which the arts and sciences can command, to make his occupation safe and salubrious; and the adventurous men who, amidst subterranean darkness, noxious vapors, and the crushing of falling strata, venture into the caverns of the earth to wrest its mineral treasures

from their native beds for the use and comfort of their fellow-men, are proud of their occupation.\*

Miners, from whatever nationality they may have originally come, or whether natives for generations, have many ideas in common. Working by the piece or ton, each is, in a sense, his own boss. When work is plenty and cars are abundant, they work with uncommon energy, one man often doing in eight or nine hours what would be a fair day's work for two men. No man will admit that another can put out more coal than he, and the younger and more robust will seldom acknowledge that they are ever tired. During the slack or dull seasons of the year, they have a great deal of leisure time waiting on cars in the mine, and they pass most of this spare time in groups, the main topic of discussion at these social gatherings being the relation of labor and capital. Any man who takes a contract for work at less than the usual price is regarded as having disgraced himself. During a strike it is held to be an infamous act to work (blackleg), and men regard it as a high honor to be able to say that neither themselves or any of their relations ever did so.

There are many grades of intelligence among these underground coal workers, but taking the whole body together, they may be divided into two distinct classes—the temperate and industrious and the intemperate and thriftless. There are about as many of the one class as the other. The larger number of the temperate and industrious are professing Christians, members of the church, are readers of books and newspapers, and will take rank as among the most intelligent of the workingmen of the State. The church members are generally Baptists, Methodists, and Presbyterians.

They are keen disputants of those church doctrines which have divided Protestants for two hundred years, and often in the murky chambers of the coal mine, during the leisure hours of a working-day, scenes of real life may be witnessed, such as Milton, in "Paradise Lost," has portrayed as occurring in the realms of Heaven before man was formed of the dust of the earth.

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\*In Germany the special safeguard of law for the protection of miners, and for the care of the aged, the crippled, and the diseased, has made the miners the proudest class of the people. "He is as proud as a miner," is a common saying.

“Others sat apart on a hill retired,  
In thoughts more elevate, and reasoned high  
Of Providence, fore-knowledge, will, and fate,  
Fixed fate, free will, fore-knowledge absolute.”

Many of this class of men own the houses and lots in which they live, and have money out at interest. Some of them, who have large families of children, have little ahead, but they pay their way as they go, and owe no man a cent.

The intemperate and thriftless class pass most of their spare time in the saloons of the mining villages. These places are the curse of the coal mines, and they are as numerous as they are demoralizing. They are frequently kept by miners who have been victimized for having been conspicuous in some former strike, and who profess to be heroes and martyrs to the cause of labor. Sometimes a miner who has been crippled by a fall of rock or coal, or whose lungs have been wasted by working amidst the foul and noxious gases of a badly ventilated mine, engages in the business as his only means of making a living.

Men who pass their working time in a coal mine and their idle time in a saloon cannot have broad and liberal views of the true relations of labor and capital. The only way too many of such men think of redressing any grievance, real or imaginary, is by force. When a mining district is confronted with a proposition, coming from the operators to reduce the rate of wages, or when the miners themselves deem an advance due, this class of men are always ready to strike, yet a majority of them are probably not in a condition to stand out on their own resources for twenty-four hours.

Some of the noblest deeds ever performed by man—deeds which, had they occurred on the battle-field, would have been rewarded with high public honors and emoluments—have been performed by miners on the occasion of mining catastrophes. On the occurrence of every accident, however dangerous, there are a dozen or one hundred men ready to plunge into danger, or death itself, in the hope of rescuing a fellow-workman. This race of men are also as remarkable for their generosity as for their spirit of daring. When any one of their number gets hurt in the mine in the pursuit of his calling, his associates are always ready to assist his family until their fellow craftman's wounds are healed, and he is again fit for work.

The character which I have drawn of miners seldom finds its way into the public press, and what the public usually know of this race of men has been learned of them during the prevalence of a strike, when their blood is hot and their evil passions are aroused. Even then the vices and follies of miners are exaggerated one hundred fold. As M. Simonin well says in "Underground Life," "the public has passed by the collier with too much indifference; the philosopher, the savant, the artist, the romance writer, have not sufficiently examined him."

The following statement in reference to the character of British coal miners, a race of men from which the great majority of our American miners are drawn, is taken from "Colliery Management," an able work by Jonathan Hyslop, Esq., a colliery proprietor and mining engineer in Lanark, Scotland.

"It is now nearly twenty-five years since my apprenticeship commenced at an English colliery, and thus the greater portion of my life has been spent in daily contact with miners.

"During that time I have had ample opportunity of knowing them; have stood in various relationships to them; have dealt with English, Scotch, and Irish in all the varying phases of trade, and the result is, as far as that experience goes, I have found them reasonable when fairly dealt with, grateful in return for kindness, ready to put forth an extra effort in emergencies, forbearing when they might have done harm, slow to take advantage of mistakes, and as faithful and obliging as the workmen of any other class."

Constant labor in a badly aired mine breaks down the constitution and clouds the intellect. The lungs become clogged up from inhaling coal dust, and from breathing noxious air; the body and limbs become stiff and sore, the mind loses the power of vigorous thought. After six years' labor in a badly ventilated mine—that is, a mine where a man with a good constitution may from habit be able to work every day for several years—the lungs begin to change to a bluish color. After twelve years they are black, and after twenty years they are densely black, not a vestige of natural color remaining, and are little better than carbon itself. The miner dies at thirty-five years of coal-miner's consumption. In a mine where the circulation is constantly renewed, and a pure current made to sweep the faces of the workings where the people are employed, little or no injury to health results from underground coal mining, but the blighting influence of want of solar light remains. Six to eight hours immersion in a coal mine in a working-day is as long as nature can stand, as mines are generally operated, without injury at an early age to the constitution and vigor of the mind.

When business men, literary men, and in short, men of every profession, who have means, overtax their minds and undermine their health by too close application to study and duty, they seek rest and recuperation by a few week's or months' travel in the country, or they take a trip to Europe, etc., and in this course they are encouraged and advised by their physicians. Human nature is the same in the miner's cottage as in the mansion of the rich and great; and hence when the miner becomes worked down in exhausting subterranean regions to which there is no parallel on earth, and nature demands rest and recuperation, he finds it in a strike. The lives of miners are prolonged many years by reason of their numerous strikes. The better policy would be for the miner, when he finds his health and physical energy giving way, to change his occupation, or seek recuperation by resting singly; but men whose intellects have become clouded, whose tempers have become soured, and whose bones have become stiff and sore by breathing the foul and noxious air of the mine, cannot reason. The best remedy for the prevention of strikes and consequent lawlessness is not in cursing the folly and fatuity of miners, nor in urging the enactment of conspiracy laws, but in applying thorough and vigorous and never-ceasing ventilation in the mines.

Jules Verne, one of the ablest writers of our times, has drawn a picture of a peaceful village whose inhabitants had lived for centuries in harmony and contentment. By a peculiar process, Dr. Ox extracted from the air its due proportion of oxygen. The simple villagers, who had lived for centuries in peace, became fretful and quarrelsome. Fanciful wrongs, which formerly were passed by without concern, assumed large proportions; neighbors who had been life-long friends became bitter enemies. The quarrel did not confine itself to the village, but all the surrounding villages were regarded as enemies. War ensued, and there was no end to the quarrel until the Doctor was discovered at his nefarious work and got rid of.

Unless the mine atmosphere becomes too foul to admit working every day, miners seldom lay down their tools in strike and demand better ventilation. The air of a mine, as I have said, is always better in some places than others, and miners working in the worst air will work as long as they can stand up for fear of being regarded by their fellows as lacking unusual powers of endurance. All miners pride themselves on their physical power and their dauntless spirit in braving either the fiery or mephitic dangers of the mine. The pernicious influence of breathing bad air on the habits of the miners, making them quarrelsome and fault-finding, is, however, none the less certain and sure.

*MISCELLANEOUS DISCUSSION.*

Mr. JENNINGS.—I would like to inquire how many cubic feet of space requires to be mined in the Hocking Valley district to make a ton of coal? At the Youngstown meeting of the Institute, in May of last year, Mr. Roy stated that in the Mahoning Valley mines 85 per cent. of the coal was recovered in mining, and that in the Pomeroy region 80 per cent. was got.

PRESIDENT ROY.—In the Mahoning Valley mines the conditions for mining a large per cent. of the seam are unusually favorable. The coal is hard—a block coal; it lies in basins or troughs, which are generally long or narrow; the roof and floor are hard, also; and the coal lies at no great depth below the surface—from 100 to 200 feet usually. Wide rooms are driven, and fully 66 per cent. of the coal is got in mining forward. The chain pillars along the main entries, as well as many of the ribs, are got in working back. On the Ohio River, at Pomeroy, the mines are laid out on the double-entry system, the rooms are worked forward eighty yards, and when finished the pillars are withdrawn—very strong pillars being left along the main entries to resist the crushes which follow the removal of the pillar coal. When mining commenced in the Hocking Valley the coals in the front hills were opened, and there was little or no system practiced in mining, for these hills usually held only a few acres of coal, with a light roof or cover. When, however, mining was commenced on a more elaborate scale, the first method of laying out the workings was continued, and the result was, that a large proportion of the coal was lost by squeezes, as the miners down there call a crush of the superincumbent strata. During the past few years, however, improved methods of working have been adopted, and the great majority of the mines of the Hocking Valley region are well laid out. I think 80 per cent. can now be got in mines where the seam is worked to its full height.

Prof. ORTON.—W. B. Brooks says he gets 7,000 tons to the acre from a six foot seam.

Mr. JENNINGS.—He can't get 6,000 tons. I made some calculations from data furnished by mining bosses at eleven different mines in the Hocking Valley, and I find it takes 37 cubic feet of space in a mine to make a ton of screened coal. The loss from nut,

slack and refuse thrown in the gob is 33 per cent. By actual measurement we only get 1,179 tons per foot thick to the acre of lump coal from the space excavated. This would give but 7,074 tons to the acre, if all the coal in the hill were mined out. Allowing that, by the improved mining now in use, 80 per cent. of the coal is mined, we would recover 5,659 tons per acre for a six-foot vein.

Mr. HOWELL.—In Muskingum County we calculate about one and a half cubic feet of coal mined for the bushel of 80 pounds.

PRESIDENT ROY.—The standard number of cubic feet in a ton of coal is twenty-seven, so that one cubic yard is equivalent to one ton. This is the rule in making calculations of the coal in the hill in an unmined state. Thirty or thirty-five years ago the United States Government instituted an elaborate series of experiments with American coals, and this was the conclusion reached. Of course it does not apply with absolute accuracy as coals vary considerably in weight, even coals mined in the same district. For example, forty-two feet of loose coal make a ton of Frostburgh coal. This is the weight of the Midlothian coal of Virginia also, while it requires forty-seven feet to make a ton of Pittsburg coal. These facts were brought out by the investigations referred to. Regarding the calculations made by mining engineers and the actual amount of coal recovered in practice, there is a wide difference. Some years ago, in 1867, I think, the late Prof. Hodge was employed to survey the Frostburgh coal field, in the State of Maryland. His report showed that 2,525 acres of coal had been mined out, and 12,953,317 tons of coal had been recovered; the average thickness of the bed was eleven feet, making 17,786 tons of coal to the acre, for in that coal field everything that comes from the miner's pick is shipped to market. Only 5,120 tons were thus recovered to the acre, while 12,676 tons had been lost to the acre, being a loss of nearly two and a half tons for every ton recovered. The publication of Prof. Hodge's report raised a storm of indignation among the mining superintendents of that coal region. I have been in the habit of stating that in Ohio, taking the whole coal field throughout, 50 per cent. of the coal has been sacrificed by wasteful modes of mining; but I am afraid if an accurate survey was made, such as was made by Prof. Hodge in Maryland, we would have no better result to show than the figures which I have just given of the Frostburgh field.