I N D E X.

I N D E X Continued.

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STRUCTION WORK, EXAMINING AND REPORTING ON
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TWENTY-FIVE YEARS EXPERIENCE IN COLORADO.
TEN YEARS AS STATE INSPECTOR OF COAL MINES.
CLASS 1884.

REPORT

On

NOS. 1 AND 2 MINES,

Of

THE UNION PACIFIC COAL COMPANY,

At

CUMBERLAND, WYOMING.

By

JOHN McNEIL, M. E.,
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Denver, Colorado.

APRIL, 1911.

To: D. O. CLARK, ESQ.,
Vice-President & General Manager,
Union Pacific Coal Company,
Omaha, Nebraska.

Dear Sir:

Introductory:

In compliance with your instructions, I made an examination of Nos. 1 and 2 Mines at Cumberland, Wyoming, and herewith present to you, my report on the same.

The Mines Consist Of Slope Openings, driven on the true dip of the coal seam, thus the entries run on the

"strike", at right angles to the slopes, making good, "square" work in the mines and a pleasing appearance on the maps. See maps attached at end of this report.

The Dip Of The Coal Seam, is in a westerly course, and the inclination is (from the horizontal) about 22-1/2 degrees.

The Thickness Of The Coal Seam, varies, according to location, from about 8 feet to 19 feet, with a seam of clay from 10 inches to 10 feet in thickness about five feet from the bottom of the coal. Wherever this intervening clay is not over two feet in thickness, it is removed and the bottom coal is taken up.

The Quality Of The Coal, we may accept as a non-coking bituminous, is good steam fuel and for general heating purposes, but is not as favorably received for domestic use as Rock Springs coal.

Analyses:

	No. 1.	No. 2.
Moisture,	5.03%	4.04%
Volatile Matter,	40.10	41.42
Fixed Carbon,	50.54	49.67
Ash,	4.33	4.87
	100.00%	100.00%

No. 1 Mine, has reached an inclined distance on the coal seam with its main slope, of about 3,700 feet, at which point it has encountered the "rock fault" (probably a barren zone in the measures) that has been defined in its course and met with by each succeeding North Entry from No. 1 to No. 11 inclusive, see map.

The Lower Portion Of The Mine Is Sealed Off, from present workings by securely built stoppings in the main slope and other points just under the entrance to Nos. 3 North and 3 South Entries, and mining operations now followed are confined to drawing pillars in Nos. 1 and 2 North Entries and 3rd North dip entry.

The history of No. 1 lower workings from the 4th Entry to the face of the slope, is doubtless already well known to you, so I will refer to them here for record in a very brief manner.

A few years ago, when the vertical covering of the strata overlying the coal seam had reached a thickness of 1,500 feet or more, it was found that the pillars left, in advancing the work, were insufficient to withstand the pressure brought to bear upon them and resulted in there being such a severe crush that it became practically impossible to keep the workings open; and, in-as-much as the south entries had run into poor coal generally, and that the north entries and the slope

had reached the rock fault (an unknown quantity), also that the pillars were crushing and the presence of marsh gas $C.H.^4$ was more-or-less troublesome, it was decided to abandon and seal off the workings under No. 3 Entries and take out whatever coal that could be gotten from Nos. 1, 2 and 3 North Entries, which, under existing conditions, was really the only course to pursue.

The Daily Production Of The Mine, at this time, is about 800 tons of run-of-mine coal.

The 1st North Entry, at the present time, contributes about 75% of the above output, for the following good reason explained by Supt. McCarty, that he wished to extract all the coal from the pillars from 70 to 80 rooms and have the space caved in to take off the weight and pressure of the superincumbent strata before attacking the pillars at the face of No. Entry No. 2.

I estimate that 90% of the pillar coal now in No. 1 No. Entry, north of the boundary line (Quealey land) can probably be removed.

From Room 40 to Room 29, a "squeeze" of the overlying strata upon the pillars has been active for sometime, and it will be a very difficult matter to extract more than about 15% of the coal remaining in these pillars.

In advancing the first workings in these entries, it is evident that 65% of the coal was mined out; 35%, however, would have been much better mining.

In 2nd North Entry, between the fault and boundary line (in Quealey land), I estimate that 90% of coal in pillars will be extracted.

From the boundary line to No. 40 room, 25% of the coal left in pillars may be mined out; from No. 40 room to No. 27 room, a heavy squeeze or "creep" of the overlying strata is in evidence, and throughout that distance, the amount of coal which may be gotten, is, at this time, very doubtful, maybe 10%, including the entry "chain pillars" might be recovered. From room No. 27 out to the slope, 15% of the pillar coal may be gotten.

Such loss in coal is the penalty now being paid for improperly mining out too large a percentage of the coal in advancing the workings.

In No. 3 North Entry, 90% of the pillars can be mined between the boundary line and the rock fault (in Quealey land).

From the boundary line to room No. 23, the percentage of coal that may be taken from the pillars, is also very doubtful, perhaps 10%.

From No. 23 room out to the slope, probably 15% may be obtained. Much will depend upon how the "creep" of the strata will act when the pillars are attacked.

In 3rd Dip Entry, 90% of the coal lying between the boundary line and rock fault may be available.

The Producing Life Of The Mine, we estimate may be from 15 to 18 months, at its present output of 800 tons per day.

The Ventilation Of This Mine, is produced by a 20-ft. fan of the Guibal type.

The air measurements of the total intakes, aggregate 86,450 cubic feet per minute.

The total outlet is 88,850 cubic feet per minute.

At face of 1st North Entry, 25,220 cu. ft. per minute,

" " " 2nd " ")
) 38,250 " " " "
" " " 3rd " ")

Number of men employed, night and day shifts, 123,

Number of horses,---------- 12

Air volumes are taken in through some surface caves.

It is needless to say that the present workings are well ventilated.

Explosive Marsh Gas C. $H.^4$, has not been recorded, (hence never been detected) since the lower workings of the mine were sealed off.

Natural Moisture Was In Evidence, along the haulage-ways, percolating, no doubt, from surface caves.

Average Tons Of Coal Mined Per Keg Of Powder Used, 60.76. The average was taken for six months.

The above showing is fair.

The System Of Haulage, is by horses on entries, and by steam engine and cable on slope.

No Pumping, is done at this Mine.

The General Equipment of The Mine, is very good in all its branches, and it is a source of regret, indeed, that an additional coal area cannot be found in the vicinity of Cumberland. Not having personally examined the field, I can have no decided opinion to offer in this connection.

The Operation Of The Mine As To Safety, of employees, is fairly good. Mining pillar coal is accompanied with a greater degree of danger from falls of coal and roof than mining from rooms, but, seemingly, very few accidents from this source have occurred in working these pillars.

It will be understood that in mining out pillars, but a minimum amount of blasting is required, and as there is always a "free-end" to shoot to, the danger in this risk is reduced to a minimum.

In Conclusion, seeing that the end of No. 1 Mine is drawing to a close (18 months at most) and that necessary safe-guards are in evidence for the comfort and safety of the workmen, it would be superfluous to continue this report further. In fact, I know of nothing further of consequence to relate, unless it would be my wish to find for you some millions of tons of coal in this district. But, from all I can learn from the research of others, the finding of coal in paying quantities may be considered doubtful.

No. 2 Mine, has about the same physical conditions as No. 1. The character, dip and thickness of the coal seam are about the same. But the stratum of clay lying between the lower and upper benches of coal, which in No. 1 varies from 10 inches to 10 feet, rarely exceeds 18 inches in No. 2 Mine.

The Slope, is driven on the true dip and has reached an inclined distance on the seam of about one mile, and a

vertical depth from the surface to the face of the slope of about 2,400 feet. See map and profile of the surface and the course of the slope at end of this report.

A Description Of The Mine. It will be observed that from the 10th North and 10th South Entries down, large pillars are left on each side of the slope between entries. This precaution was an absolute necessity, for the purpose of arresting further development of pressure from a general "creep" or squeeze of the overlying strata upon insufficient pillars, which was brought about by a seemingly common, but inexcusable mistake, in working out an altogether too large percentage of the coal seam in advancing the workings of the mine.

As near as I can judge (from observation and information obtained) about 65% of the coal seam was extracted in advancing the underground workings, leaving about 35% in pillars to be worked later.?

Such working proportions in a 6-foot coal seam, with 200 feet of vertical strata over it, might be followed with a good measure of success. But to thus operate a 10 to 20 ft. seam (containing a soft clay stratum in it) and lying on an inclination of 22 degrees dip, with 1,000 to 2,000 feet of vertical measures over it consisting of massive bedded sandstone, was altogether, a huge mistake.

To have extracted 35% of the coal in advancing and left 65% in pillars to be mined out in retreating back from the boundary (or pre-arranged destination) would have been within the bounds of good mining. But with the reverse percentages in practice under existing conditions, it could result only in a needless expenditure of money and an abnormal percentage of loss in coal.

It is to be hoped that the large pillars now left between the 10th Entries and face of the slope, will effectually arrest further development of the squeeze now in progress, from following down upon the lower workings. Of this "creep", we will have occasion to speak later on in this report.

To give anything like a definite estimate as to the tonnage of coal that may yet be produced from this mine, is impossible. So the following estimates must be taken, subject to conditions to be met with, in which, we are aware, there may lie more or less unknown quantities.

It will also be understood that much of the information I am about to give, with reference to the upper workings, has been obtained from your superintendent, Mr. McCarty, as to enter and examine the same is, in many cases, impossible, at this time.

In A Entry, about 40% or more of the coal, is said to have been left in, and being near the surface with but light vertical cover, a goodly percentage of this coal may be expected.

The 1st South Entry, pillars are drawn back from the boundary line to 22 room and is caved to the surface. In the pillars left, about 20% of the coal may be available.

The 2nd South Entry, as will be noticed on the map, struck the north side of the rock fault or barren zone reached by the north entries of No. 1 Mine at the boundary line. See map. The pillars are drawn out from the boundary line to No. 23 room. From No. 23 room to the slope, about 20% of pillar coal, including entry stump, may be gotten.

The 3rd South Entry, is walled off close to the slope. There are 19 rooms to the fault. It is likely this entry can (at the proper time) be entered and say 25% of the pillar coal left there, obtained.

The 4th South Entry, turned 17 rooms before encountering the fault. Over this entry on the surface lies a pipe line and reservoir. Probably 15% of the coal in these pillars may be available.

From The 5th South to The 10th South Entries, inclusive, evidences show that the squeeze (already referred to) has closed up these entries tight, and it is extremely doubtful if any coal whatever will be available from them, at a reasonable cost.

In The 11th and 12th South Entries, from No. 10 room to the fault, is worked out and closed. The blocks (large pillars left) next to the slope may yield 65 to 70% in being mined by retreating, when the proper time comes to extract them.

From The 13th South Entry, pillars are now being extracted from the fault to No. 10 room, contributing about 250 tons per day, which may last for about six months.

From the large pillar left next to the slope, about 80% of it may be available by mining it retreating.

The 14th South Entry, has been driven to the boundary line, since the survey shown on the attached map was made. Rooms are now being turned and some in operation, and from this entry a production of about 250 tons per day may be expected for about a year.

The 15th South Entry, rooms will be turned there shortly, from which may be expected 125 tons of coal daily for the next year.

No. 1 North Entry is still open with the car tracks in, for half of its distance. From these pillars and entry stumps, 15% of the coal standing may be expected, when the proper time comes to extract it. Note creek and R. R. tracks on the surface over this entry.

No. 2 North Entry, can be entered and probably 15% to 20% of the pillar coal may be secured in there.

The 3rd and 4th North Entries are standing, but the tracks are all out. They can probably be entered when the proper time comes to do so, and some coal may be available, but just to what extent, remains at this time, an unknown quantity.

From Nos. 6 to 10 Entries, inclusive, it is believed they are closed tight, and also, fire is known to have existed there, see map. Thus, I would not consider it wise to open up the stoppings that now wall them off.

The 11th North Entry, from No. 10 room to boundary line, is walled off. It is doubtful if any coal can be had from these pillars. From the solid block (large pillar) next to the slope, about 60% may be available.

The 12th North Entry, is still working from No. 10 room to the boundary, and about 85% of this coal has been removed. Work is now being confined to entry stumps. From the large pillar next to the slope, about 70% may be available.

In No. 14 North Entry, the rooms from No. 8 to the boundary line are worked up about half way, and the extraction of a fairly good percentage of the coal from this entry (at this time) appears favorable. From the solid block next to the slope, about 70% of the coal in it may be gotten by mining it retreating.

The 15th North Entry, is now within 200 feet of the boundary and the same favorable conditions exist for the recovery of a good percentage of coal from it.

It will be noticed on the map that the face of the slope is in close proximity to the boundary line.

Explosive Marsh Gas C.H.4, is given off in the lower workings, and upon examination of the record book of the gas

watchman, I noticed that occasionally, the finding of 200 to 500 cubic feet of gas at high points was recorded.

I am pleased to state, in this connection, that I found the best of evidence that a careful watch was being kept in keeping the air current up by "brattice" and otherwise, to the face of the work, to render harmless any gas that might be given off, and further, I found in other respects, good management displayed in mining and blasting the coal and keeping the workings wet, to which I will refer later in this report.

The Coal Seam Is Mined Absolutely, in all entries and rooms, and positive orders are issued by the superintendent that on no account shall any coal be shot from the solid, and a strict obedience to this order is demanded from the shot firers. They have positive instructions to refuse firing a shot, if drilled beyond the mining.

The mining in entries is done about the middle of the seam, while in rooms the mining is done on the top of the coal seam. The top bench of coal is kept ahead of the middle bench, and the middle bench correspondingly ahead of the lower one. In this manner, the coal is shot up in three separate benches so the shooting of any one of the three is practically "free", preventing the possibility of "tight" shooting, as practiced in shooting off the solid.

After our experience in the large seams at Hanna and at Scofield, where the most ruthless form of solid shooting is practiced, it was indeed refreshing to see an admirable system of mining the coal followed at Cumberland No. 2. The mining is all performed by pick work.

It is only fair to note the mining of the coal is more easily performed there, on account of the enormous pressure brought upon the coal seam by the abnormal thickness of the over-lying strata (about 2,000 feet), but soft or hard, it is and should be made a criminal practice to blast coal from the solid in a dusty mine.

A Good Sprinkling System was in evidence wherever work was being followed, either in entries or rooms, and "sprinkling" does not convey the true meaning of what I saw there. I saw a man employed in each entry, with a long hose and nozzle and an abundance of water under a strong pressure, and he not only sprinkled but literally wet the floor and washed down the roof and sides of the entries and rooms.

A High Temperature, was noticeable throughout the lower workings, and notwithstanding the copious watering done, I judged the temperature would be from 75 to 80 degrees. This, of course, at a vertical depth of over 2,000 feet, is but a natural consequence. A fairly good degree of humidity was noticeable in the air.

The Ventilation Of The Mine, is produced by a 20-ft. fan of the Guibal type.

The total volume of air at the intakes, is 90,490 cubic feet per minute, and the total volume passing out at the outlet is 95,940 cu. ft. per minute.

The following are measurements of "splits" in proximity to the face of the entries.

No. 13 So. Entry, 9,600 cubic feet per minute,
" 14 " " 5,320 " " " "
" 15 " " 3,000 " " " "
" 13 No. " 4,600 " " " "
" 14 " " 8,200 " " " "
" 15 " " 2,000 " " " "

On account of the squeeze referred to, it is a most difficult matter to conduct the air-currents to the working places, as any manner of stoppings put in (stone or otherwise) they are almost continuously disturbed and crushed by the great movement and pressure of the over-lying strata, which is uninterruptedly grinding the pillars into smaller and smaller space, according to the compressibility of the coal and floor beneath it; hence the stoppings are subjected to the same pressure, and must be attended to at certain points almost daily to keep them clayed up and air tight.

Again, the coal pillars themselves become so crushed and broken that the air-currents leak through badly. So the

stoppings and pillars must be constantly patrolled, and even then, much air is lost, and at the face of the workings, it is difficult to keep up a good supply of air.

In The Underground Stables, the wood-work and timbers are well covered over with sheet iron; are lighted with electric lights, no open lamps are allowed to pass within the stable gates, and water in pipes with hose connection, under pressure, are present.

Average Tons of Coal Produced Per lb. of Monobel Powder, for a period of three months, was 12.4 tons. The above is an excellent showing, meaning 310 tons of coal mined by 25 lbs. of 3rd grade Monobel powder.

This powder has many features of safety, and providing there is no mistake made in the tonnage of coal produced by it here, the three months test just made is an admirable one.

I have no doubt but the Monobel powder will give best results in blasting coal which has been mined.

Before us, we have in the above, a forcible argument in favor of mining the coal and using, if possible, a "safety" powder.

Note: In Hanna No. 2 Mine, on an average of one year, we have only 28 tons of coal mined to a keg of powder used, in blasting from the solid,

or, in other words, a little over one ton of coal per pound of "black" powder.

In Cumberland No. 2 Mine, where the coal is strictly mined, we have a little over 12 tons of coal mined to each pound of Monobel powder used.

The Haulage of The Coal, like No. 1 Mine, is performed by horses on the entries, and by steam engine with cable on the slope.

Water Pumping From The Mine, is done from a series of stations, as follows:

1st Station: 1st South Entry, Knowles vertical triplex pump, 5 H. P., 3-1/2 x 6, gallons per minute, 35

2nd Station: 5th North Entry, Knowles horizontal triplex pump, 35 H. P. 5 x 8, gallons per minute,---- 103

3rd Station: 10th North Back Entry, Knowles horizontal pump, 35 H. P. 5 x 8, gallons per minute,----- 103

4th Station: 13th North Entry, Knowles vertical triplex pump, 20 H. P. 6 x 8, gallons per minute,---- 117

5th Station: Face of Slope, Knowles vertical triplex pump, 15 H. P., 4 x 8, gallons per minute,--- 52

The total growth of water is said to be about 135 gallons per minute.

The Daily Production Of The Mine, at this time, is about 1,100 tons of run-of-mine coal.

The Probable Producing Life Of The Mine, is a problem we would not care to set forth with any degree of accuracy, owing to the unknown quantity that might result from the general "squeeze" already referred to.

Providing, however, the large pillars left from the 10th Entries down, have arrested the "creep" sufficiently to have caused the compressive force of the strata to find a bearing (above the 10th Entry) to relieve the downward pressure, i. e. if the roof and the floor from the 6th to the 10th entries (the central part of compression) will yield in their compressibility and come together closely to a state of rest, which is probable; then our deductions drawn as to the probable availability of some 600,000 tons of coal (or more) from below the 10th and above the 6th entries may be realized.

Respectfully submitted,

John McNeil M. E.

Consulting Engineer.

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Remarks: It is said, the inevitable risks in American coal mines exact in their toll of accidents, 34%, and 66% due to the negligence of employees and employer.

In 1908, 2,450 fatal and 6,772 non-fatal accidents occurred in the mines of the United States. It seems that many deaths occurred from risks taken to save labor, being in too much of a hurry, and ignorance or non-observance of company's special rules.

I would advise that general instructions be frequently given to employees regarding the proper and safe conduct of their work by those in charge at the mines. See to it that all employees understand the company's rules, and demand an uncompromising obedience to the same.

Protect workmen and property against the dangers arising from spontaneous combustion of the "gobs" and ordinary fires in and about the mines with every known precaution.

Have adequate ventilation for the comfort and health of the men at the face of the work.

Prohibit "shooting from the solid"; no shot hole to extend beyond the mining.

Do not allow two or more shots to be fired in one place at the same time, let a sufficient interval elapse between blasts.

Do not permit wooden or other inflammable tool houses, boxes, seats, etc. in the mines; have same constructed with non-combustible materials, as far as practicable.

Remove all coal dust and other debris from haulage roads from time to time, keeping tracks as clean as possible, to prevent such debris from being ground up and carried off in suspension with the air-currents.

Demand an uncompromising obedience to your order, in having inspections made of every working place before the regular workmen enter, to see whether or not gas is generated; and have fire-bosses and mine foremen see that miners who are ignorant or indifferent to their own safety, are compelled to properly timber their working places.

The Organization Of A Class For American Red Cross First Aid Instruction, at each of your collieries, could not fail in its humane object of rendering, at times, incalculable good in the skillful handling and ministering timely aid to injured workmen, in the absence of a doctor.

Such a class might well include the superintendent, pit-boss and clerks at the mine, adding a few conscientious workmen of temperate habits and humane feelings who would find

their reward for services in alleviating the sufferings of their injured fellows. The class could be instructed, from time to time, by your regularly appointed physician.

There would, of course, be a necessary expenditure of money connected with the class, the maintenance of supplies, medicine, stretchers and other paraphernalia, but there might also be created, ways and means by which the general public would gladly contribute to the aid of such a humane cause, and should a tax to your companies reach a mill per ton, it would be a legitimate, as well as a humanitarian charge to the cost of coal.

The opportunity and pleasure was mine to meet 1st Lt. M. J. Shields, Medical Reserve Corps, U. S. Army, but now among coal miners in the interest of the American Red Cross as Medical Director to members of coal mine rescue cars and life saving stations.

In my talk with Doctor Shields, I was deeply impressed with the humane nobleness and vital importance of coal mining rescue work. This generously good and able gentleman kindly presented me with a copy of the American "Red Cross Abridged Text Book on First Aid", of which he is author, jointly with Major Charles Lynch, Medical Corps, United States Army.

Faithful to the request of Dr. Shields, I have carefully read his manual of instruction, with the result that I herewith enthusiastically recommend to your personal and mature

consideration, the adoption of "First Aid" work at the mines of your several coal companies.

Dr. Shields related to me, in part, the life saving value which these classes and organizations of "First Aid" have already proved in the coal mining districts of Pennsylvania.

Allow me, for your information, to herein copy the following brief remarks from the pages of the manual of First Aid:

"To gain the first-aid certificate of the Red Cross, it is, of course, necessary for students in associations to pass the same examination required from those in classes.

"The following course of instruction is recommended:

1. Structure and mechanism of the body.
2. First-aid materials.
3. General directions for rendering first aid. Shock.
4. Injuries without the skin being pierced or broken.
5. Injuries in which the skin is pierced or broken.
6. Local injuries from heat, cold and electricity.
7. Unconsciousness and poisoning.
8. Handling and carrying of the injured.
9. Special injuries of mine or railroad, etc.
10. Lecture by an expert on means for preventing accidents.
11. General review.
12. Sanitary matters, prevention of contagious diseases, such as tuberculosis, typhoid, scarlet fever, etc.

"The lectures should be shorn of all technical terms and half an hour is quite enough for them. Then the medical director or teacher should ask questions and superintend practical work by the class for half an hour. Practical work should be increased as much as possible just as soon as the men can do anything in this direction. After this, if possible have the men discuss the subject among themselves, telling about recent injuries they have seen, how they have dressed them, etc.

"All the men should, if practical, have date cards for the year with numbers on the margin which are to be punched out at each meeting.....

"Contests in different classes or associations and between such organizations have been found to be one of the best ways to stimulate study of first aid as well as to arouse public interest in this important subject.

"The events in such contests should naturally be those having to do with first aid problems of special interest to the particular organizations concerned. As a sample of such contests, the following is taken from a program of an actual contest in the Pennsylvania mines.

Event No. 1--Man insensible from gas, totally helpless. One man to pick him up, carry him fifty feet to good air, lay him down and perform artificial respiration for one minute.

Event No. 2.--Man injured in lower part of body. Two men to form four-handed seat and carry him fifty feet.

Event No. 3.--Man injured; leg broken. Three men to splint his leg with a mine sprag and some straw or hay; make temporary stretcher out of two mine drills and two coats, and carry fifty feet.

Event No. 4.--Man injured; wound right side of temple; one man to open packet and dress wound.

Event No. 5.--General contest of eight teams. Man unconscious; wounds, simple fracture of right arm between elbow and shoulder; crushed foot with severe hemorrhage; apply tourniquet for bleeding, splints for fracture, perform artificial respiration for one minute, place on stretcher, carry fifty feet over car loaded with coal, pile of mine rock, then over fence and place in ambulance.

"An officer in charge, judges, a time-keeper and a starter will be required for such contests.

"The First Aid Department of the Red Cross will arrange such contests when desired and will award medals to successful contestants.

Red Cross Examination and Certificate.

"The Red Cross stands ready to arrange an examination for its certificate for any class of twenty persons on the conclusion of a course of instruction in first aid."

In Conclusion, it must not be construed that my enthusiasm for "First Aid" inspires me to the extent that such a class at a coal mine should necessarily have to deal with the prevention of contagious diseases or become students in anatomy, but I do think that such a class should be taught to handle and care for, in a practical manner, injured workmen in and around coal mines.

I have personally known of cases where men, becoming insensible from "after damp" gas, die for lack of medical aid, when, if the principles of "First Aid" had only been known to their fellow workmen, their lives might have been saved.

Again, I have witnessed injured men suffering much unnecessary pain, which could have been alleviated by more skillful handling.

It remains for well-regulated coal companies, such as yours, to be leaders in this humane and most worthy cause.

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