Where Iron Is King.

All About the New Iron Mines of the South and How They are Being Developed.

Travels Through the Coal and Iron Fields of Northern Alabama and a Look at the Enormous Furnaces at Bessemer—A Visit to the Red Mountain Mines—Something About the Iron Deposits of the United States, Which Produce More Wealth Than Our Gold and Silver Regions—How We Now Lead the World in Iron and Steel—Great Britain Far Behind—A Look at the Lake Superior Mines and How They Are Worked—Labor vs. the Raw Material—Millions in Hair Springs—A Story of the Abo Health, etc.

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Special Correspondence of the NEWS.

WASHINGTON, December 30th, 1896.

I WRITE today of the wonderful development which is going on in iron making in the south. I have visited the mines and furnaces in Alabama and elsewhere. There has been a revival of business since the election of McKinley and the indications are that there will be a steady increase in the output from now on. I spent some time at Birmingham, which, you know, had such a boom out long ago, but which is now doing business on a good financial basis. Birmingham is the biggest iron producer south of Pittsburg. There are twenty-six iron furnaces within thirty miles of the town, which have a daily output of almost 4,000 tons of pig iron. They employ nearly 4,000 men and pay wages of $150,000 a month. They claim to make iron cheaper than anywhere else in the world, and one of the furnace companies shipped some of its product not long ago to London and sold it there at a profit.

BIG MONEY IN IRON.

The south is doing its business on a big, broad scale. There is an enormous amount of money invested, and I visited the furnaces of one company which has a capital stock of $12,000,000. This is the Tennessee Coal and Iron Company. It has mines scattered throughout Tennessee and Alabama, and I am told that its property is worth as much as some of the small European kingdoms. It has a vast area of coal beds and it is now mining more than 17,000 tons of coal a day. It owns mountains of iron ore and last year it produced more than a half million tons of pig iron and more than three and one-half million tons of coal. I visited its coke ovens at the town of Bessemer, south of Birmingham, and was told that the ovens there, together with the others owned by the company, makes almost 5,000 tons of coke a day, while out of its Alabama iron mines alone are daily taken more than 6,000 tons of ore. This is perhaps the biggest company of the south, but there are other large establishments, and you may look for an enormous industrial development there within the next few years.

COAL AND IRON HUGGING EACH OTHER.

The coal and iron of the south are fairly hugging each other. They lie side by side, and when their marriage takes place in the furnaces with the aid of the fleecy bridal veil of limestone, which is also found near by, they can produce industrial children in the shape of iron and steel more cheaply than their kind in any other portion of the world. Next to Alabama the greatest iron mines of the United States are along Lake Superior. The biggest coal beds are in Pennsylvania, more than a thousand miles away. The limestone is also far off and the products have to travel hundreds of miles before they can come together. Chicago makes a vast deal of iron. It gets its ore from Lake Superior and its coal from Pennsylvania. It is the same with Cleveland and Toledo, but the freight rates on the great lakes are so low that we are able to show the seven-league boots of our industrial progress with iron. Even at such great distances we have brought the iron and coal together and have made ourselves the greatest iron manufacturers of the world. A little over ten years ago Great Britain produced ten times as much pig iron as we did. We caught up to her in 1890, and we now beat her in the production of both iron and steel. I have only the figures of 1895 before me. In that year and every year since then we have led the world in these respects. In 1895 we made more than one fourth of all the iron and steel in the world, and Germany and Great Britain lagged far behind us on the metallic race. Then the world produced 27,000,000 tons of iron, and our share of this was over 10,000,000 tons. Our pig iron product that year was worth more than all our gold and silver.

WHERE THE WORLD'S IRON COMES FROM.

There is no doubt that we are to furnish the greater part of the iron for the world in the future. We have large ore beds than any other country and our coal fields are practically inexhaustible. There is enough coal in Alabama to do all the manufacturing of the United States for many years to come. I was told at Bessemer that the available coal of Alabama alone if it could be put into a lump would make a solid chunk seventy miles long by sixty miles broad, and ten feet thick. Such a lump would, it is estimated, furnish ten thousand tons of coal a day for more than eleven thousand years, or a million tons a day for 115 years. But Alabama has only a small amount of the great Appalachian coal fields. These fields end somewhere in Alabama. They run from there northward a distance, it is said, of about nine hundred miles, and they are from thirty to one hundred and eighty miles wide. They furnish about two-thirds of all our bituminous coal output, and we produce, you know, about one-third of all the coal of the world. In 1894 we mined 170 million tons of coal, while the whole world produced only 370 million tons. The only country which beat us that year was Great Britain. We have thousands of square miles of coal lands outside of the Appalachian fields, and there are great undeveloped coal areas in the west. I was told of a great iron mountain which is to be opened by a railroad from Salt Lake City to Los Angeles during my stay in Utah, and there are large iron deposits in Missouri. Today the leading countries of the world which produce iron are Great Britain, Germany, France, Austria Hungary, Russia, Belgium and Sweden. Spain mines a great deal of iron ore, but she ships the most of it to England. I heard of big undeveloped iron mines in China during my stay there, and there are some good mines in Mexico and Central America. There is one iron region in Cuba and you find small beds scattered throughout the West India Islands. The great bulk of the product of this hemisphere, now and ever, comes from the United States, and as I have said, the indications are that our resources have not yet been touched.

A GOOD IRON INDUSTRY MEANS GOOD TIMES.

It is said that a good iron business means good times, and that prosperity and the reverse in the United States rise and fall with the prices of steel rails. If this is so, we are on the eve of good times, for the iron industries of the country are picking up. The foundries of Pittsburg and Cleveland have taken back their men, and the mines of iron and coal are being worked along Lake Superior as well as in the south. A report was published last week, stating that the Carnegie and Rockefeller iron and steel interests had united, and that the new combination has a hundred million dollars capital behind it. Rockefeller owns some of the biggest iron mines of Lake Superior. The Carnegie company have the biggest steel works in the world, and this combination will result in an enormous production of iron and steel at the lowest cost. The Lake Superior iron mines are wonderful. I visited some of them a year or so ago. Many of them are located from twelve to eighteen hundred feet above Lake Superior, and from fifteen to one hundred miles from the shore. The iron is worked down to a distance of about fifteen hundred feet below ground. The mining is done with the finest of machinery. Electricity furnishes the light and compressed air and steam work the pumps, drills and hoists.

OUR MINES VS. THOSE OF EUROPE.

These Lake Superior mines show the wonderful advance we have made over the old world in the use of machinery. Many of the European mines are still worked in a very crude manner, and not long since the cars underground in the Belgian mines were hauled by women, who crawled along on their hands and knees, being harnessed up like mules. Even now horses are used in some of the European coal and other mines. There are mines where horses are born, live and die underground. They have stables under the earth, and spend their lives hauling minerals. I have a picture showing how horses are let down into such mines. They are sometimes swung up in a net of straps and thus lowered. They are paralyzed with fear during the descent, and it takes them some time to recover after they are in the mine. Such horses are used to haul the cars to the shafts, whence they are raised by machinery. All of our mines, so far as I am able to learn, are worked by steam, and the American miners receive better wages than any others of their kind in the world.

THE ORE STEAMERS OF THE GREAT LAKES.

I went up the lakes on one of the steel steamers which are built especially to take ore from Lake Superior to Cleveland. The ship was one of 3,500 tons, and it carried nothing but ore. We traveled almost as fast as you do on the ocean steamers coming across the Atlantic. Arriving at the mines, not far from Duluth, the vessel was loaded within a couple of hours. Everything was done by machinery, and thousands of tons of iron ore were dropped into the steel holds of the ship with the use of hardly an ounce of human muscle. No one who has not been to Lake Superior can appreciate the enormous amount of capital invested in the iron business there. Millions of dollars have been expended on shipping and receiving docks and on railroad terminals. Millions are invested in steel steamships for carrying iron, and the whaleback ships were built to carry iron and wheat. The ore deposits of Michigan lie in the shape of a great wedge leaning against the state of Wisconsin, while those of Minnesota occur in two parallel ranges, along the other side of the lake. More than half of the iron ore of the United States comes from Lake Superior and in 1890 more than 8,000,000 tons of this ore was carried to furnaces which were an average distance of 800 miles away.

VISIT TO AN ALABAMA IRON MINE.

It is far different in the south. The furnaces at Bessemer are within a half a mile of the mines from which the iron is taken out. In company with one of the superintendents of the Tennessee coal and iron company I visited them. We rode up to the mouth of the mine in a carriage, winding our way up a little range of mountains the sides of which were covered with terra cotta stones. I picked up one of these stones and found it exceedingly heavy and was told that it was iron ore. The iron lies right on the surface of the ground. They begin on the vein and work right down into the mountain, taking out nothing but iron. Deposits of this kind extend through the mountains of that region, and it is a wonder that they were not developed long ago. I was told that iron mines were worked there during the late war and that the Confederate government got a large part of its coal and iron from that region. From time to time northern capitalists were asked to invest in the mines, but they would not believe the stories that were told them.

MR. HEWITT WOULDN'T BELIEVE IT.

One man who owned some of the most valuable iron territory of Alabama called upon Abram S. Hewitt, who, you know, has made a fortune out of iron and who has big iron interests today. He showed Hewitt the ore and told him it lay there in Alabama on the top of the ground and could be had for the picking it up. Hewitt replied that he had no money to invest at present and he evidently did not believe the man's story. "Why," said he, "we people here in New York look upon iron as so much gold and you can hardly make me believe that you people have heaps of gold lying around down south and that no one has yet picked them up. If your story is true I advise you to take several New York experts to the south and get them to swear to what they see before you try to place such property in New York." It was some time after this before the Alabama mining boom began. A great deal of this was on paper, but the foundation is there and the iron mines are as valuable today as they were ten years ago. They are now all owned by big corporations and they are being developed after the best business principles. The mine which we entered was worked with compressed air drills. The cars were hauled up and down on inclined railways by hoists, and hundreds of negro laborers, with candles in their hats, were at work. The vein of ore that I saw ranged in width from eight to twenty-four feet. It is a grand sandwich of iron ore between walls of slate and rock. It slips down into the ground at an angle of about thirty-five degrees.

MORE OF THE DANGERS OF MINING.

I could hear the brand boom! boom! of the blasting powder as I went through the mine. At times the air shook and quivered with the concussion, and our candles were blown out. Dynamite is used almost altogether in iron mines, and the danger is very great if it is not carefully handled. Every now and then terrible accidents occur in the mines and are here in Alabama, the walls fall in, and there is great loss of life. The miners I saw in Alabama were negroes. They are not as careful as the whites and their wages are less than the men at work in the mines of the Lake Superior region.

MAKING THE IRON.

Leaving the mine, I next went to one of the great furnaces at the foot of Red mountain, where the ore is turned into pig iron. Iron, you know, never occurs pure in a state of nature. The ore of the red mountain, which is used at the Bessemer furnaces, contains only about 40 per cent of iron, and the superintendent told me that the purest iron stone found anywhere contains only 70 per cent. The rest is made up of rock and other minerals and it is necessary to separate the iron before it can be used for manufactures. This process is known as making pig iron. The iron is mixed with limestone and coke in great furnaces, which are, I judge, as high as a six story house. The furnaces are filled with alternate layers of coke, limestone and iron. It takes an enormous blast to furnish enough heat for such a furnace, and the blast is created by immense engines, which force the air first through what are perhaps the biggest stoves of the world. They are immense tubes, many feet high, and as big around as the city gas tank. They are filled with firebrick and are heated by the gas which comes from the furnaces. The air is made to pass through these enormous stoves before it goes to the blast and it produces a heat so intense that the iron and steel machinery of the furnace would not last a minute were not every bit of it enveloped in water. All of the pipes are encased in other pipes which are kept full of cold flowing water, and this water is forced about the outside of the furnace whenever a smelting is going on. The heat is so great that the iron is melted in a very short time. It is drawn off from each furnace twice a day.

A RIVER OF GOLD.

It flows out at the foot in a little river of gold. The stream looks like molten gold alloyed with copper until it gets a distance of perhaps twenty feet away from the furnace. Here it is divided into two streams. The iron flows one way and the slag or refuse, which has formed a scum and floats on the top, is carried off in another. The iron is now of a yellow gold color. It seems to have lost its reddish tint. It runs off in a golden stream into a bed of sand, in which little holes have been cut or molded, so that it looks for all the world like a garden patch ready for planting. These holes are of just the size and shape of what is known as an iron pig. They are about as big around as the upper arm of a good-sized man and about three feet long. The yellow stream finds its way in through them and the garden is full of these bright yellow pigs, which turn to a copper tint as they cool and then changes to the gray of cold pig iron. As the metal is cooling the heat waves dance over the garden patch of hot iron, and you have to hold your hat before your face to keep from being scorched. After the pigs are cooled they are piled up ready to be shipped to different parts of the United States for use in manufacturing. The slag goes to waste. It runs off into a great iron pot fastened on car wheels and is wheeled on a railroad track some distance away and emptied out upon the slag heap. There are mountains of such slag near every great furnace, and the invention has yet to be made which will turn it to any other use than that of ballasting railroads.

WE LEAD THE WORLD.

We lead the world not only in the production of iron, but also in the making of pig iron. We made 10,000,000 tons in 1894, which was an increase of more than 1,000 per cent over the product of 1869. Since that time we have increased our steel product 500 times, and we are now making enough steel every year to give every man, woman and child in the United States 140 pounds, and have some to spare. Some of our pig iron which was lately sent to England, I am told, was sold for less than $5 a ton. We made pig iron at the time of the revolution, which was worth $50 a ton, and we are making steel now, it is said, almost as cheaply as a good class of iron.

MILLIONS IN IT.

It is wonderful how iron increases in value after it is turned into machinery or articles of use by the people. You get some idea of what labor is worth when you think of it. It is estimated by Carroll D. Wright of the labor bureau, for instance, that seventy-five cents' worth of common iron ore when turned into bar iron is worth $5. If you make it into horse shoes it is worth $10, or, if into table knives, $160. Seventy-five cents' worth of iron ore manufactured into needles is worth $5,000, and when made into buttons more than $20,000. If the iron is converted into watch springs it is worth, as I have said, $200,000, and when turned into hair springs your seventy-five cents' worth of rock and stone will sell for the enormous sum of $800,000. The difference between 75 cents and $800,000 is the value paid for labor alone. So you see that, after all, the real wealth of a country lies in the muscles and brains of its people. If we could turn all of our iron ore into hair springs, and could find customers for them, we would be so rich that we could buy the whole world and take flyers in all the speculative property on the sun, moon and stars and still have money to burn.

Frank G. Carpenter

FROM VARIOUS MISSIONARY FIELDS.

IN THE QUAKER STATE.

Report From Pennsylvania Conference of the Southern States Mission.

LASHLEY, Fulton Co., Pennsylvania, December 16th, 1896.

To the Editor:

Thinking a few lines from us may be of interest to your many readers, we therefore submit the following.

Leaving Utah October 30th, we arrived in Huntingdon county, Pennsylvania, October 12th. There we met Elders Cornelius Richardson, William Hill and George W. Parrish. After taking dinner together we were assigned to our fields of labor as follows:

Elders William Hill and Andrew Peterson, were assigned to labor in Lafayette county, Pennsylvania, Geo. W. Parrish and Walter P. Rich, to Montour county, Pennsylvania, and I was to remain with President Richardson. After going to the depot to see the brethren off we went about our canvassing and visited most of the leading men of the borough, subscribed for the paper and then went about tracting and building meetings wherever an opportunity presented.

A report of our first month's work shows, families visited 291; tracts distributed 313; houses held 22; meetings held 24; references 19; Gospel conversations 124; families revisited 23.

This being a new field, the Gospel seemed quite strange to some of the people. We are making friends and there are many who are investigating the truth.

It seems that we draw a line wherever we go. Some are seeking after the truth, and when we present the Gospel to them in its true light they seem to endorse the same, while others do not care to hear it. Of course we meet with opposition among the ministers.

The other day we met Rev. Levi Anderson who invited us to stop with him over night. After conversing upon the principles of the Gospel, he said he was very pleased that we had stopped, and remarked, "I have a church here I want you to speak in." The following day he visited his neighbor, who told him we were Mormons and he would not believe them. It seems that he did not understand us when we told him who we were. When he came home he asked me if we were Mormons. I told him we were. "Well" says he, "that I known that, you could not have come into my house. But think God, I never knew it, for you are right and I know you preach the true Gospel." The next Sunday morning there was a meeting in the church as is its custom, and we were going to hold meeting in the evening. Rev. Anderson went up and asked the minister to announce it, but he said, "no sir, I know too much of those people," so he announced it himself. After meeting we went up and asked the minister what he knew of us, but he was very busy just then. "Well," said Elder Richardson, "tell your congregation what you know of us, as we are here to answer to the same." Said the minister "by the way, I have got a few questions to ask you. What do you mean by this eleventh article, 'We claim the privilege of worshiping Almighty God according to the dictates of our consciences, and allow all men the same privilege, let them worship how, where or what they may?' Of course he was answered to his satisfaction and I think to his sorrow. Then he wanted to know what about the eighth article. "We believe the Bible to be the word of God as far as it is translated correctly. We also believe the Book of Mormon to be the word of God," said he. "I don't believe that Book of Mormon," Elder Richardson asked if he had read it? "Yes sir," said he, "part of it." "Why do you not believe it?" "There are so many contradictions in it." He was then asked to quote a passage. "Oh" said he, "I did not memorize it." "Well then tell what it treats upon?" Said he, "I would like to talk with you people but I haven't time." So we went home and we were left without an answer as usual. In the evening we were warned not to hold meeting, as they were going to break it up, but we went on the same as if we took no note of the warning. When we were singing our first hymn there was a sheep or so out side, and while I was speaking there was some bellowing going on and the door was kicked open a number of times. After Elder Richardson had been speaking a short time it was very quiet and they all came into the house. The remainder of the meeting was very quiet. After meeting was over we went around, shook hands with all, and they seemed to be very well pleased. Some wanted to know why we didn't preach a Mormon sermon. I told them that was just what they had heard, and they were very much surprised, also pleased. We had not come to say we gained a great many friends and went home with Rev. Anderson unmolested.

We have met quite a number of similar cases, but nothing very serious has happened as yet, of course we have a great many houses refused us and some people that will not talk to us.

We have traveled through the greater part of Huntingdon county and are now visiting saints in some of the other counties. We arrived in Buck Valley, Fulton county, Pennsylvania, December 4th, and found a very nice people here, who are striving to live lives of Latter-day Saints. But of course they have many draw backs to what we do in the west; they have no house built as yet to hold service in, but are living in faith that they may get one some day. They are just getting the hymn books and we have a singing practice wherever we go.

The following are the past office addresses of the Elders laboring in the Pennsylvania conference.

President Cornelius Richardson and D. E. Thomas, Huntingdon, Huntingdon County, Pennsylvania.

William Hill and Andrew Peterson, Carlisle, Cumberland county, Pennsylvania.

George W. Parrish and Walter P. Rich, Danville, Montour county, Pennsylvania.

Joshua M. Sully and John R. Crawford, Emporium, Cameron county, Pennsylvania.

J. V. Barney and Mahonri M. Decker, Bedford, Bedford county, Pennsylvania.

Johnson Hendershot and Cecil Barnhart, Buck Valley, Fulton county, Pennsylvania.

D. E. THOMAS.

Middle Tennessee Conference.

ALTAMONT, Tenn. Dec. 24th, 1896.

To the Editor:

In the latter part of January last Elder J. M. Brown and myself were assigned the county of Lawrence in which to make a house-to-house canvass, to leave each family some literature, converse with the people upon the plan of life and salvation, and hold meetings whenever and wherever opportunity presented itself.

We began this labor, but only three weeks had elapsed when my companion was compelled to return to Nashville owing to his suffering from chills and fever. Elder J. H. Yardley came to assist me in this work. We were successful in holding quite a number of meetings and allaying much prejudice in the matter. Before leaving Lawrence county, we succeeded in adding five to the list of members there, and organizing a Sunday school.

May 21st, I was requested to report at the office, and there remained the balance of the month as also the greater portion of June.

At conference held June 27th 28th and 29th, my name was placed on the revolving list with Elder S. C. Burrell as companion, and we were given the counties of Grundy, Bledsoe, Sequatchie, and Marion to which to labor.

Our nearest point being some two hundred miles from home we took, and patronizing as we did the grip and unlovely railroad, we were some time in reaching our destination. However, we lost no time in commencing the work on our arrival, and were successful in procuring places in which to hold services as well as having a good hearing.

August 8th, found Elder Young, our president, and Elder W. J. Sloan with us in Grundy county, and during their stay two applications were made for baptism which was duly attended to. A meeting was held at a summer resort known as Beersheba springs. This furnished an excellent opportunity of getting before some of the leading men of the state who had come here to vacate during the warmer months and who would have been difficult to approach if they had been visited at home. Mr. Neisin, who is managing the large hotel, kindly entertained us free of charge, upon learning our method of traveling and informed us that any time we felt disposed to call on him we would be welcome.

On the 19th, our worthy president and companion bade us good-bye, leaving us much food for reflection in the many words of reproof and encouragement administered while with us.

Since that time our labors have been principally in two counties where, by the blessing of the Lord we have been enabled to surmount many obstacles by way of tracting down prejudice and spreading Gospel seeds in places heretofore untrodden trodden by Mormon Elders. Recently we have had the pleasure of baptizing one more, to all appearance good honest hearted souls into the fold of Christ.

Owing to the mountainous counties being colder than those situated in lower altitudes we are advised to change fields, for the present, a thing we are very loth to do as we have many kind friends as also investigators living here who for unstinted hospitality and generous treatment of Mormon Elders, are only equalled by the broad-minded class of people living in the sunny south.

From here we go into Coffee county where I am to remain in company with Elder W. J. Sloan while Elder Burrell goes to Rutherford county with Elder Larson.

R. G. ARCHIBALD.

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