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**Letter to Hon. Chas. B. Mitchell, in Relation to the Iron Business of  
Alabama.:**

**Electronic Edition.**

**Shelby Iron Company.**

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1864

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**LETTER**  
**TO**  
**HON. CHAS. B. MITCHELL,**  
**IN RELATION TO**  
**THE IRON BUSINESS**  
**OF**  
**ALABAMA.**

**Selma, ALA.:**  
**MISSISSIPPIAN STEAM BOOK AND JOB OFFICE.**  
**1864.**

**LETTER.**

SHELBY COUNTY, ALA., April 26th, 1864.

Hon. CHARLES B. MITCHELL,  
*of the Confederate States Senate:*

Being informed by a member of the Shelby Iron Company that you solicit information in regard to the iron business of this region, with a view to important measures contemplated, having reference to the military service; and having a similar solicitation from another source, also entitled to consideration and respect, the undersigned, constituting the Board of Directors of the above-named Company, while responding, as they do with pleasure, to your solicitation, will embrace this opportunity to set forth as succinctly as practicable the information they possess and the knowledge they have acquired by attention to the subject during the two last years. They do this the more readily from the conviction that the subject is not so fully and generally understood, and appreciated, as its great and vital importance requires.

The present supply of iron is inadequate for the public service, while the people are generally cut off from all sources of supply. The agriculturalists are generally without iron to repair their old and worn-out implements, new ones being out of the question, while there is danger that railroads, on which such vital interests depend, will lose much of their already impaired efficiency, for want of iron to keep their machinery in repair, and for the construction of the additional machinery greatly needed. A large and early increase in the production of iron must therefore be regarded as a matter of the highest necessity; and this region probably must be mainly relied on for this increase.

Before undertaking to show, as we propose to do, how this increase may be brought about, it will be proper to take a brief survey of the past, in connection with the natural

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of iron. Probably no country on the globe possesses superior, if equal, natural advantages for the production of iron of superior quality on an extensive scale. In a wide extent of country, intersected by the Alabama and Tennessee River Railroad, commencing at the city of Selma, on the Alabama river, and completed 135 miles in the direction of Rome, in Georgia, iron ores and mineral coal, both of superior quality and conveniently accessible, exist in inexhaustible abundance. These minerals, if not in juxtaposition, are yet in such proximity that they may be regarded as practically lying side by side. With these unsurpassed advantages, how is the comparative smallness of the production of iron to be accounted for?

At the commencement of the war, very little had been done to develop the mineral resources of this section or State. There was but one small blast furnace and a small and inferior rolling-mill in operation in this section, and none elsewhere, that we know of, in this State. Our people were content to draw their supplies of iron from England and the North, while overlooking, or perhaps ignorant of, the greatly superior natural advantages existing in their midst, for the production of iron of far better quality than most of that derived from abroad. Hence, the country was without the knowledge and skill, derived alone from experience, in the business of manufacturing iron, as those seem to have been to whom was committed the important duty of calling forth and directing the capital and energies to be embarked in the business. The mode of making iron, condemned and abandoned by England and other countries more than a century ago, was taken up and exclusively pursued; that is, the use of charcoal, instead of mineral coal, as fuel in the production of pig iron. All the contracts of which we have any knowledge, made with the Government for pig iron, call for charcoal pig alone, giving a decided preference in prices to that which is made by the slowest and most difficult process: that is, the cold blast charcoal pig. And here a brief reference may be allowed to the history of the manufacture of iron in England, whose mighty power and prosperity had their rise in, and are mainly sustained by, the two minerals heretofore so neglected, not to say despised, in the South--coal and iron.

A well-informed and intelligent writer, whose production shows that he had given very close attention to the subject, in enumerating the essentials for the successful prosecution of the business of making iron, states, as the first and most important: "An adequate supply of the requisite raw materials

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--ore, limestone and mineral coal--for charcoal, can only be used to an insignificant extent." In illustration of this, the same writer states: "It surprises the inquirer, to find that in the year 1740, the total production of iron in England amounted to not more than

17,350 tons. The destruction of wood caused by this insignificant product was so rapid, that the business of making iron was likely to be extinguished, when the evil which was dreaded gave birth to a remedy which imparted new life to the production, and has enabled it to reach its present gigantic proportions" --then (1855) estimated, or rather stated to be 3,585,906 tons. "This remedy was the substitution of pit or mineral coal for charcoal." This stupendous result was attained in England with ores much more difficult to be mined, and known to be greatly inferior in richness and other qualities to the ores which abound in this region. The ores of England and Wales, it is stated on good authority, yield only about 30 per cent of iron while the ores of this region, with which we are most familiar, yield from 50 to 60 per cent., and iron very greatly superior to the generality of that produced in England or Wales.

These facts and others similar, which could be adduced, show clearly, we think, that we have set out upon and are pursuing a wrong policy. Even if the iron produced by mineral coal were not so good as that produced by charcoal, still it would be better to have iron not quite so good, than not to have it at all. But it has been recently proved, by experiment made by this Company, that iron of superior quality can be made from our ores, by the use of the mineral coal of this region exclusively as fuel, in the whole process from the ore to bar iron. The result of this experiment was every way satisfactory. The iron was subjected to severe tests, and exhibited remarkable strength and toughness.

As a further and practical illustration of this subject, we will state something of the operations and experience of this Company. Unacquainted with the business as they were, they commenced, some two years ago, with the idea of constructing three, four or five blast furnaces, expecting to make some ten thousand tons or more of iron per year, after completing their arrangements. But the first furnace built by them had not been long in operation, before they discovered that it would be a hard task to keep that single furnace in full and constant operation with charcoal, even while the wood from which the coal was obtained stood within convenient proximity to the furnace. The forests

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which stood near have, in a great measure, disappeared, materially increasing the difficulty of procuring fuel. From this and other causes growing out of the condition of the country, such as want of laborers, the scarcity and dearness of provisions and all other necessaries, the impracticability of obtaining teams to put in the places of those worn out by hard and constant service, the business is attended with many more difficulties now than in the early part of last year. With great exertion, the Company were able to make and deliver to the Government last year, counting from March to March, only about 3,500 tons, including what they used in improvements and repairs. Small as this quantity may appear, it exceeds what any other Company in this State made within the same period. The difficulties attending the business now, being considerably greater than heretofore, this quantity is not likely to be increased, but rather diminished, in the future, under the present system. But we presume this system will not be adhered to. We are about making propositions to the Nitre and Mining Bureau at Richmond, looking to changes which, as

they involve no loss or expense or inconvenience to the Government, while promising a large increase in the production of iron, we can hardly doubt will receive the proper sanction. If this is done, we propose to complete a new furnace, commenced last year, construct a railroad from our works to the Alabama and Tennessee River road, about six miles, on which the work is far advanced and in progress, and make other necessary arrangements for obtaining a full and regular supply of mineral coal. This being done, and substituting mineral for charcoal, we have great confidence in the ability of the Company to increase the manufacture of iron more than a hundred per cent., without increasing the number of laborers required in their present business, and with one-fourth the number of wagons and teams now employed. It is deemed unnecessary to go into a statement of particulars to show how this result can be brought about. The great advantage consists in dispensing with a large number of hands and teams required in the production and hauling of charcoal, and in the increased amount of iron which an equal quantity of mineral coal will produce. It is estimated that the hands required in the production and delivery of charcoal for one furnace, are sufficient to mine coal enough for two furnaces. This Company propose to mine their own coal, having one mine opened and being engaged in opening another. What is practicable for this Company, may be

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fairly presumed to be so for a portion at least of the other Companies of this region.

The business of mining coal is being largely extended, and under the arrangement completed and in progress, the prospects are that the supply of coal will, ere very long, be ample. The principal difficulty to be apprehended in the successful prosecution of the plan of substituting mineral coal for charcoal, in a large degree, is the want of railroad machinery for transporting the coal. The present machinery is insufficient, but we understand that arrangements have been made to bring upon the road considerable additional machinery.

We will now proceed to give you, as nearly as we can, the special information you desired.

We have no sufficient data on which to state the quantity of iron produced in this State during the last twelve months, say from first of March, 1863, to March, 1864; but probably it was considerably less than 10,000 tons. There were in this region but three blast furnaces in operation during the first half of last year, and one on the Coosa river, the iron from which goes to Rome, Ga. Three other furnaces were started, one in June or July, and two others subsequently. If these seven furnaces shall be kept in regular operation, adhering to the use of charcoal, it may be reasonably calculated that they will together produce from 300 to 320 tons per week, or from 13,000 to 14,000 tons per year, presuming they will run forty-four weeks in a year.

Four or five additional furnaces are expected to be in operation in the course of three or four months, and one of them may already be in operation. These furnaces will be of greater capacity than the average of those heretofore in operation. Should they commence

operations, say four of them, by the first of July or August, and run eight or nine months up to the first of March, the average product of the four may be reasonably estimated at from 210 to 220 tons per week, or from 6,500 to 7,500 tons for the eight or nine months. This, added to the estimates given above for the other furnaces, would give about 20,000 tons from March, 1864, to March, 1865. These estimates are deemed reasonable, under the supposition that the furnaces referred to be kept in regular operation with charcoal for the periods mentioned. It would not, however, be safe to rely with full confidence on this result under existing circumstances, if the exclusive use of charcoal be adhered to in the production of pig iron.

But presuming that two or three of the present furnaces, and two of those to be completed, embracing the largest of

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the furnaces, shall be operated with mineral coal for seven or eight months prior to the first of March next, say for thirty weeks, the increased production from them might be reasonably put at from 280 to 300 tons per week, or from 8,000 to 9,000 tons per thirty weeks, which is probably more iron than was made by all the furnaces of this region for the year ending the first of March last.

We come now to speak of the rolling-mills of this State.

This Company have one, the capacity of which, with the addition of two or three more puddling furnaces, which could soon be constructed, may be estimated at 30 tons per day of gunboat plate, and proportionably of smaller sizes, making an average of about twenty tons per day of various sizes.

There is a large rolling-mill at Selma nearly completed, and expected to go into operation in May next. The capacity of this mill is estimated at thirty tons per day of gunboat plate and other large sizes, being constructed with the view of making gunboat plates, boiler plates, etc. The same Company, we understand, are making preparations for the construction of a mill for making small and ordinary sizes of iron.

There is a small rolling-mill at Montgomery, but we are not informed of its capacity; but it is probably from three to five tons per day.

The Government own a rolling-mill on the Alabama and Tennessee River Railroad. It is new and represented to be a very good mill. It is adapted, we believe, for the manufacture of small and ordinary sizes only. We are not informed of its capacity.

Arrangements are in progress for the erection of two rolling-mills on the Central Railroad, which connects with the Alabama and Tennessee River road. It is understood that one, if not both, of these mills will be of large capacity, belonging to a large and strong Company.

It is doubtless a reasonable estimate, that the mills now in operation, and the one in Selma soon to be completed, can, if supplied with the requisite number of proper

workmen and the necessary materials, make from fifty to sixty tons of iron per day, including from thirty to forty tons of gunboat plates and other large sizes. The other mills referred to, when completed and in operation, would probably increase the quantity from thirty-five to forty-five tons per day. These estimates are based upon the presumption that the mills would have a full quota of competent workmen and an ample supply of the necessary materials. To the extent

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that these may be lacking, the product of course would be diminished.

There being yet wide, unoccupied fields, other establishments may, and doubtless under proper encouragement will, spring up for the manufacture of both pig and bar iron.

A branch railroad is being constructed from the Alabama and Tennessee River road into a portion of what is considered one of the most valuable coal fields in this State, where the coal seams are said to range from three and a half to six feet and upwards in thickness, and well situated, many of them for cheap and convenient mining. One vein, said to measure twelve feet in thickness, has been discovered: It is estimated that the region to be penetrated and developed by this branch road, which it is intended to complete at the earliest day practicable to an extent sufficient to develop a large portion of the coal, will afford many millions of tons. A good many hands are now at work there, opening mines or getting out coal, which is done entirely, or nearly so, with negro labor. A comparatively small number of experienced and skilled miners, to lead in and direct the work, would greatly improve and facilitate the operations.

If we have transcended what was expected, and gone more at large into the subject of your inquiry than was anticipated, let it be attributed to our deep impression of the importance of the matters referred to. And as we have studiously endeavored to confine our observations strictly within the limits of practical truths bearing directly on the subject, and to avoid the presentation of all impertinent facts and considerations, we cannot doubt that our response in the unexpected shape presented will be acceptable.

The facts herein brought to view cannot be too well or widely known, and there is reason to believe they are very imperfectly known, even to the comparatively few usually well-informed on all subjects relating to the important interests of the country, whose minds have been engrossed by other more directly pressing, though not more important, subjects.

There is a matter connected with this subject, too important to be passed over without special notice. We allude to the want of rolling-mill workmen. Everything else may be possessed in abundance, but bar iron cannot be made without competent workmen. The possession of a sufficient number of these is indispensable for any considerable increase in the production. There are barely enough of these workmen for the present limited business, and there are but few in the country, unless they are in the army. If they

are there, we think that systematic steps should be taken to ascertain where they are, so that they may be detailed where they are most needed. The comparatively few men of this class, who would hardly be missed from the ranks, could render the country better service in making iron, doubtless than ten times their number in the army. If they cannot be obtained in this way in sufficient numbers, we would suggest the importance of measures to induce them to come from abroad, and to retain them here. We have no doubt of the entire practicability of this, if proper and judicious agents were sent abroad empowered to give satisfactory guarantees of perfect exemption from all military service, and prepared to offer pecuniary inducements, such as our enemies do not hesitate to do for men far less valuable and important to them. If they can afford to lavish millions of dollars, not to procure artisans necessary to their service, but to lure to their ranks of death, to be hurled against our citizen-soldiers, thousands and tens of thousands of stalwart peasants of Ireland and other countries, cannot our Government, in aid of its sacred cause, in comparison with which more money should be counted as dross--can it not afford to expend the amount, whatever it may be, necessary to obtain and secure such number of competent artisans as its service absolutely and imperatively demands? Men of this class, more, probably, than can be found in the Confederacy, ARE INDISPENSABLE; and, in our judgment, no pains or expense should be spared to obtain them, with as little delay as possible.

While on this subject, we would call attention to some important matters relating to it, which seem to require authoritative attention. Rolling-mill workmen are a somewhat peculiar class. They are hard-working men. We would not go among them to find criminals nor law-breakers. There is a sympathy among them toward each other amounting almost to clanishness. They do not meddle much with public or governmental affairs, and are, probably more cosmopolitical than almost any other class. Where their business is, there is their country. There are, of course, exceptions in this case, as in all general rules. These allusions are necessary for a proper comprehension of the force of what follows. Knowing the importance of men of this class to us, our enemies, it is stated, have adopted a course intended and well calculated to draw them away, and these efforts have not been without considerable success. At least many of those men have left, some doubtless under enticements from the enemy, and some from apprehensions

of conscription (unacquainted with the laws on the subject); or, as there is reason to believe, to escape the frequent annoyances of over-stringent enrolling or conscripting officers. Be this as it may, it is certain that these officers have caused much, and, it is believed, unnecessary annoyance to persons and Companies engaged in manufacturing iron, and their employees. In this way, doubtless without intending it, they have seconded the schemes of the enemy to deprive us of these valuable men. We have information,

deemed reliable, that a circular, under high authority from the enemy, has been circulated among rolling-mill workmen offering a large pecuniary reward and other inducements to such of them as would leave this country and go to the enemy, the main motive, of course, being to deprive us of their services. Under this double influence of repulsion and attraction, it is not to be wondered at that many of these men should have disappeared from this country. One of these forces may be neutralized and the other should be contracted, if possible.

Very respectfully, yours,

A. T. JONES, President;  
J. W. LAPSLEY,  
J. M. McCLANAHAN,  
HORACE WARE,  
E. T. WATTS,  
Directors.

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