## GREAT NORTHERN'S IRON ORE.

Duluth.—Ten years ago the Mesaba range was in its infancy as a producer of iron ore. Last year it shipped over 13.000,000 tons of iron ore and of abile amount Great Northern shipped over 5,500,000 tons. In less than six years James J Hill has become a most powerful factor in the iron ore business and he is clearly destined to become still more powerful in the next few

The Mesaba range is some 66 miles long and there is iron ore all over it. The ore is mainly soft, most of it being susceptible of handling by steam shov-eis, and runs from below 60 to 70 per cas, and runs from below 90 to 10 per subject on the billion to the subject of this amount 409,000,000 to 480,000,000 to transportation, including at least 306,-forest Northern has, moreover, large amounts of land not yet fully explored, which will increase its controlled ton-nage very materially, and it is perhips pary 4, ore in the Messab range is equal in extent to the holdings of the U. S. Steel company Mr. Hill has, however, sought freight and the subject of the subject of large through the subject of the subject of the large through the subject of the large through the subject of the subject of the large through the subject of the subject of the large through the subject of the subject of the large through the subject of the large through the subject of the subject of the large through the subject of the subject cent. The amount so far proved is p the has not among as on the at controlling the second of t ling tonnage by ownership as to contro Davis properties some years ago, he became a very large owner, and will always have a considerable income for ways have a considerable income for Great Northern from royalities. It must be remembered that Mr. Hill's policy has ever been to give the Great North-have been and never will be any para-sites on the property while he lives or his policy endures. The directors of the Great Northern have not and never have had any "private single" at the budders.

have had any "private single" at the expense of the company and its atock-holders. The foreign on the 17 produced of the company and the stock-holders. The foreign is simple to the company of the price of the country of the south and running more or less east and west. Along the slope is a mixture of taconite and slate, in which the meat in a sandwich, sometimes below it. Over all there is a mass of slating of the price of the pri

recognized viz 1.—"Strippers."

"Shaft and level mines."

The "stripper" mines are those in which the ore lies near the surface, and can be reached by stripping of the which the ore lies near the surface, slid can be reached by stripping off the glacisid drift, and perhaps a layer of taconife, thus enabling the ors to be taconife, thus enabling the ors to be directly into cars. The most notable mine of this kind on the range is the Mahöning, at Hibbing. This mine con-tains is body of soft 63 per cuit; were contains in the contains of the contains of the drift. This drift has been cleared away over an area of 60 acres, surjouing when ore body, and tracks have been laid therein so that steam shovels can di-tent of the mine can be imagined when it is stated that there are twelve miles tent of the mine can be imagined when it is stated that there are twelve miles of tracks in it. The ore body is estimated to contain something like 10c, 000,000 tons of ore. The mine is owned it fee by Great Northern, and is leased to the Cambria Steel company, 30 per cent; the U. S. Skeel company, 30 per cent, and the rest to others—that is to say, the product of the mine is shipped. the product of the mine is snipped dose companies in those proper-by a direct lessee from Great hern. The ore is proved to a depth 5 feet more, and is Bessemer ore. ern. The ore is proved to a d feet more, and is Bessemer le of being smelted without The actual cost of loading ture. The actual cost of loading cars at the Mahoning mine is probably not in excess of 3 cents per ton, and, ex-

cluding freight to lakes, it can be put on board for 5 cents per ton. This is

range. mine is one which is The The "miller" mine is one which stripped from above, but which, by reconnected the son of als location, will not convenien by receive cars. Consequently, it operated by tunnels running longitudially, under the ore, which is load into cars in the tunnels through ho openings, and then hoisted into r-Hig openings, and then hoised into diffractions at the top. The body of re is exposed and the mine is a sort hollow crater, with the tunnels run-ing delow the crater. The cost of adding ore into cars from this kind of the is, of course, greater than from a

cipper,"
'he ordinary "shaft and level" The ordinary "shaft and level" mine is worked as all such mines usually are by central saafts and levels driven horizontally therefrom. There are mines in which the ore-lies at a depth of 150 to 290 feet, or more below the surface, and where, the cost of stripping would be too great. In practice it is found economical to strip a mine lying as far as 30 feet below the surface, provided as 30 feet below the surface, provided

as 80 feet below the surface, provided that for each foot of stripping one foot of ore can be had. Up to 150 feet in depth it pays to strip if two feet of ore can be had for each foot of stripping. The cost of mining ore and putting it on the cars therefore varies from 3 cents a ton to as much as 35 cents, or even more, according to the develop-ment work necessary on the mine, and ment work necessary on the mine, and the opportunity for economical hand-ling. This governs the royalty paid by leasees. Most of the lands are held on lease by those who operate them, and many leases are stake leases. The plan usualty provides that the leasee shall mine a minimum quantity of ore each year and pay so much per ton. Leasee made some time ago provide for royalmade some time ago provide for royal-ties of about 12½ cents per ton, but later leases make royalties up to 35 cents per ton, with a minimum of 50-000 tons per 46-acre tract, while other leases at varying royalties usually make the minimum, 100,000 tons per 40

The distance to the Great Northern docks at the lake is about 116 miles by rail. Mr Hill has contrived to find a location to give a maximum grade of four-tenths of one per cent. (about 22 feet to the mile) each way, and consequently extreme economy is possible in the handling of ore by train. As a matter of fact, the Great Northern matter of fact, the Great Northern takes the ore in average trainloads of 21,000 tons—about 42 loaded steel cars takes the ore in average trainioads of 21,000 tons.—about 42 loaded steel cirs of 100,000 bs. capacity—from the mines are of 100,000 bs. capacity—from the mines rate of 80 cents per ton. The trains make the round trip in 21 hours on an average. The method of sorting, hand-traordinarily efficient. As the ore varies somewhat in quality at different mines, the cars are marked accordingly before they are moved from the mines, and on sorted out for unloading. The company has three ore docks at West Superior with a total capacity of 165,000 long, excluding the approaches, and cantains \$56 pockets, each with a capacity for 100,000 doing, capacity for 100,000 from the company has the company has the capacity for 100,000 from the company has been so the work of the certain quality is 14wa5 feaded into the same process in the yard. When the train of cars has been sorted it moves slowly on to the dock, pussing over a track scales. curs has been sorted it moves slowly on ato the dock, passing over a track scales on the way, which accurately weighs each car, noting its number. These re-cords are the bagis upon which royal-jue; and freight are paid and upon which the consignee pays for the ore. As the train stops each car is over a jocket; the hoppers are opened and the ore dumped into the nocket. The train ore dumped into the pocket. The train then moves off, making way for an-other, and return with its empties to

ine, ore steamers come alongside the the mine.

The ore steinmers come alongside the dock and the ore is poured directly induced and the ore is poured directly induced in the control of the con inst about 15,000,000 tons of or n the ranges east. Mr. Hill wer of the lake business so far a ght is concerned a year ago, sellin Great Northern steamers at a goo e. His rail transportation, how so far as

ever, must yield a very hundsome pronia of the boyen rule. This is equal
to the boyen rule. This is equal
not the boyen rule. This is equal
not the safe to say that his total cost,
including stock, handling, etc., cannot
be much more than \$1 per train mile
and it is safe to say that his total cost,
including stock, handling, etc., cannot
be much more than \$2 per train mile,
mile profit, or say 55 cents per ton of
ore handled. Adding to this the royalt es on ore owned in fee, probably 70
certs per four ore owned in fee, probably 70
certs per four owned to profit, On 19000,000 tons, therefore, which Mr. Hill
expects to reach in five years' time,
there will be a profit of \$7,000,000 anGreat Northern stock, and representing
on initial cost to Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000 or \$5,000,000.

The position of Great Northern of
perhaps \$5,000,000.

The position of Great Northern
have not yet been disclosed or proved
as far as iron or is concerned. There
are large tracts of land owned by the
thoroughly explored, but which are
known to contain ore. I do not know
to what extent negotiations have hithended the substantial of the contain ore. I do not know
to what extent negotiations have hithended the substantial or pass from Great Northern
on unfavorable terms. It is clear
that the Great Northern stockholders
extraordinary value for future expolication. Agents of the Great Northern
on unfavorable terms. It is clear
that the Great Northern stockholders
extraordinary value for future expolication. Agents of the Great Northern
on u ploitation. Agents of the Great North-ern Company, moreover, are constant-ly on the watch for more tomage, and ner of trades. Some of these are in-genious in the extreme. Despite a fail-ing off in the total shipments from the ALL of the control of the control of the ALL of the control of the control of the Nothing better illustrates the extra-ordinary genius of Mr. Hill and his ment than does the development of the

ment than does the development of the enormous from ore business in the past few years. The visitor to the range can hardly believe that the industry is barely ten years old an entry of the large transport of the range of the possibilities of the range seem almost unlimited, for no or field can compare with it in point of cost. The industry is receiving the closest attention of Great of the possibilities of the possibilities of the range seem almost unlimited, for no or field can compare with it in point of cost. The industry is receiving the closest attention of Great closest attention of Great Northern hands, and that company is likely to be the dominant factor in the range henceforth. Whatever happens, whoever finally gets the ore, Great Northern stockholders are assured of a large permanent revenue from it in the future. It is conceivable that some day there may be some cheap iron and steel made near West

From what I can learn, the United From what I can learn, the United States Steel Company officials have been somewhat slow in recognizing the importance of developments on the Mesaba range, at least so far as Great Northern is concerned.—T. F. W. in Wall Street Journal.

## THE COUNTRY GRAIN BUSINESS IN MANITOBA.

Is the country elevator business of Manitoba, and the Northwestern Territories being overdone? Is a question Winnipeg, and the increasing number of elevators is viewed with solicitude, according to the American Elevator and Grain Trade. It is only natural because of the country should not wish to divide it with new companies; therefore, the assertion of the Canabetonius of the Country should not wish to divide it with new companies; therefore, the assertion of the Canabetonius cut up and that the number of country houses has already gone beyond the requirements of the country, will naturally be taken as the expression of the Country should be the country houses has already gone beyond the requirements of the country, will naturally be taken as the expression of the country will naturally be taken as the expression of the country of th located had handled approximate 37,000,000 bushels of wheat on the la crop. Of this amount, 6,000,000 bus els were loaded into cars from traplatforms; therefore the elevato handled but 31,000,000. On May there were 8,500,000 bushels in store 37,000,000 nd about 4,000,000 in farmers bands. this, should the elevators get it all, vill give a total of 43,500,000 bushels

handled by the SSC houses for the following the property of the provided by th

alment, which represents form of manner or sales to commission; as large. Up to January I the C dian Northern road had, at certain tions, taken 4.173,000 bushels of w from elevators and 1.083,000 bushels of we have represented to track. How percentage would hold out for whole wheat area cannot be told, It certainly gives some idea of which represents

whole wheat area cannot be told, it certainly gives some idea of extent of track loading.

The law which regulates the dibution of cars to shippers is doubt well known to the grain trade in United States, but it may not be of place to briefly touch upon it.

Law provides that if a number of state is number of states. of place to briefly touch upon it. law provides that if a number of significant of the provided provided in the provided provided

selevator owner, and the carboy of the carbo

tions, which will increase track long. The tendency seems to be in it direction, and therefore, and the small commission of the small commission. The day of big profits in the buy of grain in the Canadian Northwest apparent in self protection, buy of it farmers at a wide margin under tenarket price during the late fall attrough the winter. This is marked and the grain must therefore be cried until spring, without any opening the commission of the small control of the commission of the commissi

Navigation closed, last year, owing to the machine and the country elevate owing to the machine and the state of the country elevate of t But the country

ments only resulted in a greater gestion of loaded cars, which it so long to the first so long to the development of the develo

## GRAIN IN TRANSIT.

The railway discussion has drawn tention to the channels in which of adian grain at present moves to seaboard. From the little pamy compiled by the Northwestern M

2 4 4 5 -