

Iron ore - Brazil
Hill to Gaspard Farrer

August 4, 1911

Van Hise and Leith are sound authorities on iron ore & at same time well informed on commercial conditions in America as ore affects the iron & steel business. However the Brazilian iron ore problem has many features which are necessarily peculiar to its local conditions, & these must form an important part of the question as a whole. Van Hise told me he wanted to retain a quarter of the mines for their services at the time of taking in new partners in the ore locations; I notice [Sir Ernest] Cassel mentions their retaining one third. Thinks VH did not give me figures as to average phosphorous contents of the ore but all analyses

which he showed me were very low, much lower than the average of our best Lake Superior mines. His figures all indicate a very high average class of ore; higher than any large field I have ever seen. Transport of ore from the mines to the seaboard is a very important matter. If a ry line can be secured following course of river, there should be no adverse grades in the direction of ore movement and heavy trainloads could be hauled; 4 electric power stations would suffice & give power & light to the mines, the ry., & dock; cheaper than steam unless cheap coal is found. We are hauling ore from the Mesabi mines to the dock at Lake Superior, 110 miles average, for 17¢ per ton & scale of wages probably much higher than

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it would be in Brazil. If we estimate 3,000,000
tons yearly tonnage or 10,000 tons daily, or 4
full trains, I think ore could be transported
for a cost of not over 75¢ per ton. A rate of
\$1.50 per ton on 3,000,000 tons would give
\$4,500,000 from the movement of ore alone, or
about \$15,000,000 per mile annual earnings. If
the road cost \$50,000 per mile, the above would
make a valuable property. Cost of our new steel
dock is about \$1,500,000 or \$5,00 per ton for
its capacity of 100,000 tons. \$10¢ per ton
will cover our entire cost of docking & main-
taining the dock, &c. Sir Ernest is right in
saying that ships of large tonnage necessary.
25,000 ton steamers with electric hoists to
unload would do work at lowest cost & would

cost about \$1,250,000 each & at \$2.00 per ton ocean freight should be very handsomely & with a large tonnage moving regularly as easily handled as iron ore, the greatest economy can be assured. As to mining the ore, V.H. says two bodies are exposed in large masses without overburden such as we have to remove on the Mesabi. Ore would have to be broken up by light blasts of black powder, after which it would be loaded with steam shovels. You will recall [from your recent visit] the Mahoning Mine, overburden of 30 ft., all of which has to be hauled away; cost of opening Mahoning, including stripping, &c. makes cost of putting ore in cars at the mine about 20¢ per ton. Certainly ore could be laid down in Europe alongside of

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\$4.50 per ton after such rates for both land and ocean transportation as would make both rail and water carriage quite profitable.

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