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THE ROMANCE OF THE GREAT LAKES

By J. O. CURWOOD

II. WHAT THE SHIPS CARRY

PICTURE a train of forty-ton freight cars loaded to capacity, the engine and caboose both in New York city, yet extending in an unbroken line entirely around the earth—a train reaching along a parallel from New York to San Francisco, across the Pacific, the Chinese Empire, Turkestan, Persia, the Mediterranean and the Atlantic—and you have an idea of what the ships of the Great Lakes carry during a single eight months' season of navigation. At least you have the part of an idea. For were such a train conceivable, it would not only completely engirdle the earth along the fortieth degree of north latitude, but there would still be something like two thousand miles of it left over. In it would be two million five hundred thousand cars, and it would carry one hundred million tons of freight! Were this train to pass you at a given point at the rate of twenty miles an hour, you would have to stand there forty days and forty nights to see the end of it.

Only by allowing the imagination to paint such a picture as this can one conceive to any degree at all the immensity of the freight traffic on our inland seas.

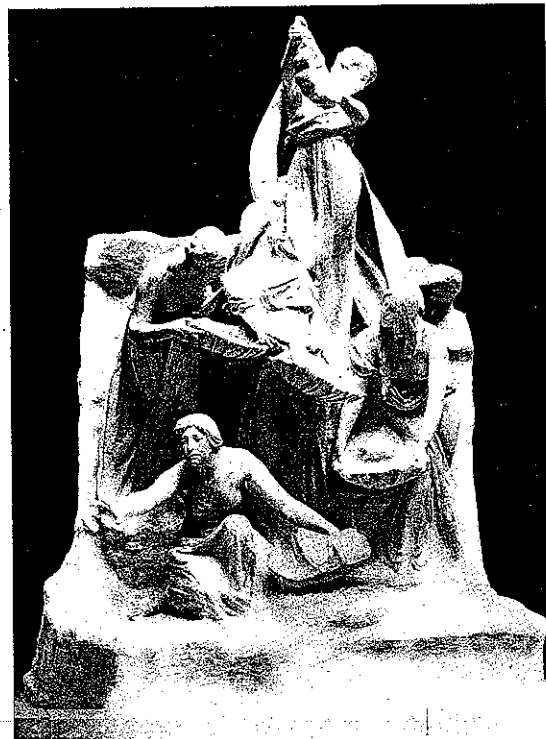
"A hundred million tons," repeated the mayor of one of our lake ports when I told him about it recently. "A hundred million tons! That's quite a lot of stuff, isn't it?"

Quite a lot of stuff! It might have been a hundred million bushels and he would have been equally surprised. His lack of enthusiasm does not discredit him. He does not own ships; neither does he fill them. He is like the vast majority of our millions, who have never given more than passing thought to that gigantic inland water commerce which has largely been the making of the nation. It did not dawn on him that it meant more than a ton for every man, woman and child on this North American continent; that in dollars it counted billions; that on it depended the existence of cities; that largely because of it foreign nations acknowledged our commercial prestige.

No other hundred million tons of freight in all the world is as important to Americans as this annual traffic of the Great Lakes. To move it requires the services of about one thousand five hundred ships, only a few of which are Canadian; it takes one thousand five hundred captains, three thousand mates and fifteen thousand sailors to man this huge argosy, and a million working people are fed and clothed and housed because of the cargoes it carries from port to port.

It is impossible to say with accuracy how last year's hundred million tons of freight was distributed and of what it

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THE FOUNTAIN OF THE GREAT LAKES
By LORADO TAFT

By courtesy of the sculptor

See "Our Own Times"

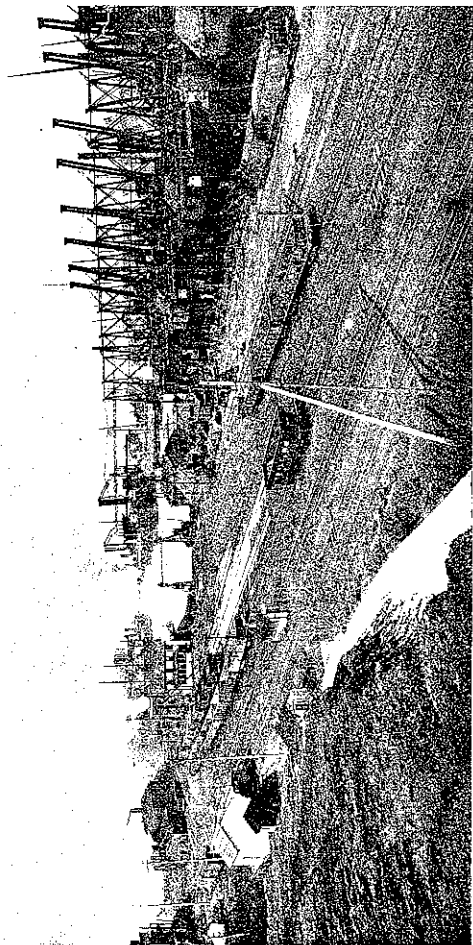
consisted. Only at the Soo and at Detroit are records kept of passing tonnage, so the figures which are given showing the tremendous commerce that passes these places do not include the enormous tonnage which is loaded and emptied without passing through the Detroit River or the Sault Ste. Marie canals. The Detroit River is the greatest waterway of commerce in the world, and in 1906 there passed through it over sixty million tons, or more than three-fifths of the total tonnage of the lakes. Of this about a quarter moved in a northerly direction and three-quarters toward the cities of the east. The principal item of the up-bound traffic was fourteen million tons of coal, of the south-bound thirty-seven million five hundred and thirteen thousand six hundred tons of iron ore, one hundred and ten million five hundred and ninety-eight thousand nine hundred and twenty-seven bushels of grain, one million one hundred and fifty-nine thousand seven hundred and fifty-seven tons of flour, fourteen million eight hundred and eighty-eight thousand nine hundred and twenty-seven bushels of flaxseed, and over a billion feet of lumber.

"And when you are figuring out what the ships carry, be sure and don't leave out the smoke!" said the captain of an ore carrier, pointing over our port to a black trail half a mile long. "Never thought of it, did you? Well, last year our lake ships burned three million tons of coal. Think of it! Three million tons—enough to heat every home in Chicago for two years!"

But in this article I am not going to deal with smoke; neither with the grain that feeds nations, nor the lumber that builds their homes. They will be described in their time. The backbone of American manufacturing industry—the mainspring of our commercial prestige abroad—is iron; and it is this iron, gathered in the one-time wildernesses of the North Land and brought down a thou-

sand miles by ship, that stands largely for the greatness of the lakes to-day. "Gold is precious, but iron is priceless," said Andrew Carnegie. "The wheels of progress may run without the gleam of yellow metal, but never without our ugly ore." And the lake country, or three little patches of it, will produce this year nearly a half of the earth's total supply of iron. Farmers in the wake of their plowshares, our millions of workers in metal, and our other millions whose fingers daily touch the chill of iron have never dreamed of this. Few of them know that eight hundred great vessels are engaged solely in the iron ore traffic; that in a single trip this immense fleet can transport more than three million tons, and that last year they brought to the foundries of the east and south over forty-one million tons. If every man, woman and child, savage or civilized, that inhabits this earth of ours were to receive equal portions of this one product carried by lake vessels in 1907, each person's share would be forty pounds! And still the world is crying for iron. There is not enough to supply the demand, and there never will be. The iron ore traffic of the lakes has doubled during the last six years; it will double again during the next ten—and iron will still be the most precious thing on earth.

If the iron ore mines of the north were to go out of existence to-morrow nearly half of the commerce of the inland seas would cease to be. With it would go the strongest men of the lakes. For our iron has made iron men. In that North Land, along the Mesaba, Goeblie and Vermilion ranges—from Duluth's back door to the pine barrens of northern Michigan and Wisconsin, they have practically made themselves rulers of the world's commerce in steel and iron. To follow the great ships of the lakes over their northward trail into this country is to enter into realms of past romance and adventure which would furnish mate-



THE DOCKS AND MACHINERY OF THE HARBOR AT CONNEAUT, OHIO

In 1904 Conneaut was the largest receiving port on the Lakes, and still holds a leading place, millions of tons of iron ore being unloaded here each season.

rial for a hundred novels. But people do not know this. The picturesque days of '49, the Australian fever and the Klondike rush are as of yesterday in their memory—but what of this North Land, where they load dirty ore into dirty ships and carry it to the dirty foundries of the east? Ask Captain Joseph Sellwood; ask the "three Merritts," Alfred, Leonidas and N. B.; or John Uno Sebenius, David T. Adams and Martin Pattison; ask any one of a score of others who are living, and who will tell you of the days not so very long ago when the iron prospectors went out with packs on their backs and guns in their hands to seek the "ugly wealth." These are of the old generation of "iron men"—the men who suffered in the days of exploration and development in the wilderness, who starved and froze, who survived while companions died, who suffered adventures and hardships in the death-like grip of North Land winters that rival any of those in Klondike history. And the new generation that has followed is like them in "the strength of man" that is in them. They are a powerful breed, these iron kings, down to the newest among them; men like Thomas F. Cole, who rose from nothing to a position of power and wealth, and W. P. Snyder, the poverty-stricken Methodist minister's son, who has fought the steel corporation to a standstill, and who is now talked of as its president of the not distant future.

It will be a great "coming together" for the iron and steel industry, this winning of William Penn Snyder. To-day he is the king of pig iron. When he refused to deal with those who formed the United States Steel Corporation his friends said that he was ruined. But he stood on his feet alone—and fought. He got a neck hold on the corporation. He cornered pig iron, and because of him at the present time the corporation is paying very heavy prices for its outside product. Snyder is worth fifteen million

dollars. In 1906 he cleaned up one million five hundred thousand dollars on pig iron alone, and there is no reason for doubting that his 1907 earnings were greater still. He is a powerful enemy to have as a friend—and the corporation wants him, and will probably get him.

If you are going into the north to study the ore traffic at close range the first man you will probably hear of after leaving your ship is Thomas F. Cole, of Duluth. You must know Cole before you go deeper into the subject of the forty million tons of ore which the ships carry. The United States Steel Corporation will use about twenty-five million tons of the total output of the ore regions this year, and Cole is the United States Steel Corporation in this big North Land. He is the head of the finest and most delicate industrial mechanism in the world. This mechanism, in a way, is so fine that it may be said to be almost non-existent. It is simply an "organized and capitalized intelligence." The steel corporation will mine eighteen million tons of ore in Minnesota alone this year. Yet it owns not a dollar's worth of property in the state. As a corporation it does no business in the state. It might be described as a huge octopus, and each arm of this octopus, representing a big mining interest, works independently of all other arms and of the body of the octopus itself. Through these arms the corporation accomplishes its aims. Each huge mine has its own executive organization, is responsible for its own acts—but it must obtain results. The "central intelligence," or body of the corporation, is there to judge results, and Cole is the power that watches over all. Officially he is known as the president of the Oliver Mining Company, the greatest organization of its kind in existence, which attends not only to the steel corporation's interests in Minnesota, but in Michigan and Wisconsin as well. As the great eye of the world's largest trust he guards the interests of thirty-one



ONE OF THE HUGE "OPEN PITS" OF THE MESARA RANGE—A MAN-MADE CRATER
The size of the excavations may be guessed from that of the two men standing at the edge of the pits, in the center of the picture

mines, employs fifteen thousand men, and gives subsistence to sixty thousand people.

Because of the transportation of this mighty product Cole is as closely associated with the lakes and their ships as with the ranges and their mines. It has been said that he was "born between ships and mines," and he has always remained between them. He is one of the most remarkable characters of the inland seas. Cole is only forty-six years old, and for thirty-eight years he has earned his own livelihood, and more. When six years old his father was killed in an accident in the Phoenix Mine. Baby Tom was the oldest of the widowed mother's little brood, and he rose to the occasion. At the age of eight he became a washboy in the Cliff stamp mill. He had hardly mastered his alphabet; he

could barely read the simplest lines; never in this civilized world did a youngster begin life's battle with greater odds again him. But even in these days the great ambition was born in him, as it was born in Abraham Lincoln; and like Lincoln, in his little wilderness home of poverty and sorrow, he began educating himself. It took years. But he succeeded.

This is the man whose name you will hear first when you enter the mining country. To chronicle his rise from that dusty Calumet office of long ago to his present kingdom of iron would be to write a book of romance. And there are others of the iron barons of the north whose histories would be almost as interesting, even though fortune may have smiled on them less kindly.

From the immensity of the interests

which Cole superintends one might be led to believe that the iron ore industry is almost entirely in the hands of the trust. This, however, is not so. For every ship that goes down into the south for the trust another leaves for an independent. Nearly every maker of steel owns a mine or two in the ranges of Minnesota, Michigan or Wisconsin. There are five of these ranges. The Mesaba and Vermilion ranges, both in Minnesota, produce about two-thirds of the total product carried by the ships of the lakes; the Goebic, Menominee and Marquette ranges are in Michigan and Wisconsin.

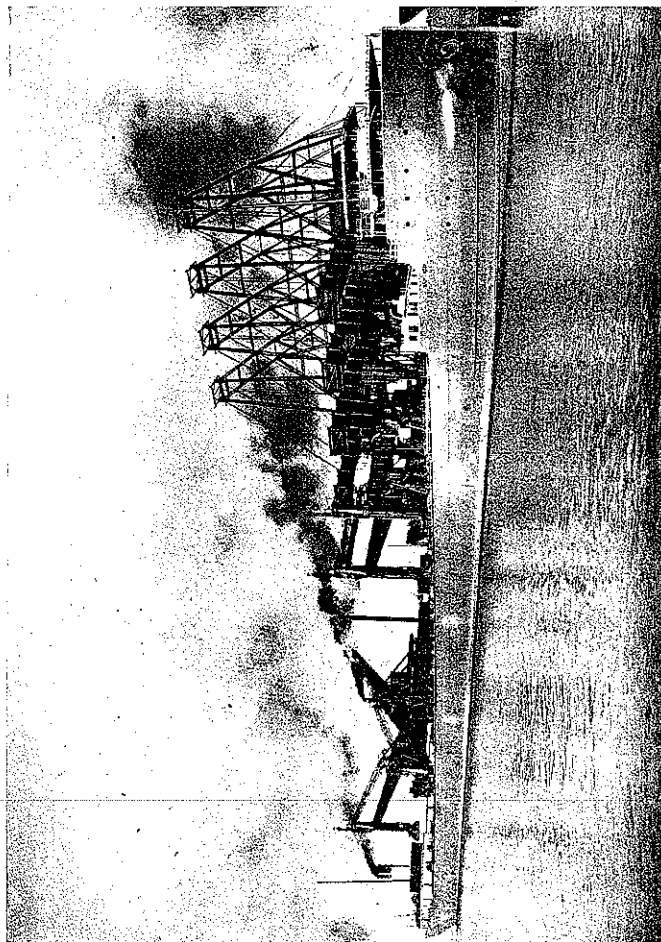
Somehow it is true that nearly every great thing associated with the lakes is unusual in some way—unusual to an astonishing degree, and the iron ore industry is not an exception. Probably not one person in ten thousand knows that one lone county in this great continent is the very backbone of the steel industry in the United States. This county is in Minnesota. It is the county of St. Louis, and is about as big as the state of Massachusetts. Not much more than twenty years ago it was a howling wilderness. Even a dozen years ago the Mesaba bore but little evidence of the presence of man. Now this country is alive with industry. Buried in the wilderness which still exists are thriving towns; where a short time ago deer and bear wandered unmolested, is now the din of innumerable locomotives, the rumbling of thousands of trains, the screeching of whistles and the constant groaning of steam shovels. There is not a richer county on the face of the earth. In it are over one hundred mines, from which one hundred and twenty-three million tons of ore have been taken since Charlemagne Tower, now ambassador to Germany, brought down the first carload to Duluth in 1884. These mines afford livelihood for more than two hundred thousand people, and because of them St. Louis County possesses the greatest freight

traffic road in existence—the Duluth, Mesaba and Northern Railway—which last year carried about fourteen million tons of ore from the mines to the docks.

This comparatively little corner of Minnesota practically runs the whole state in so far as expenses are concerned. To administer the affairs of the state, including all of its activities, costs about two million six hundred thousand dollars, and as inconceivable as it may seem, the three railroads in the ore region pay in taxes one-fifth of this sum. They pay one-third of the total railroad tax of the state, notwithstanding the fact that some of the greatest lines in the country center at Minneapolis and St. Paul. To this must be added about seven hundred thousand dollars paid in direct taxes by the mines themselves, so that the iron ore which the ships of the lakes bring down to eastern ports each season pays almost a half of the total expense of running the state of Minnesota!

And these mines will add more and more to the state exchequer each year, as will also the mines of the three ranges in Michigan and Wisconsin. For in no part of the world has mining been undertaken on a scale as gigantic as that of the Superior region, and every contrivance known to mining science is being used to increase month by month the mountains of ore which ever fail to satisfy the hungry furnaces of the east. It is predicted by Captain Joseph Sellwood, of Duluth, one of the oldest and greatest of the iron barons, that the time is not distant when the Mesaba range alone will be producing forty million tons of ore a year—as much as all five ranges are producing now.

"It will cost over a billion dollars to get this ore to the docks," said he. "And seven hundred and fifty million dollars more to land it in Lake Erie ports."— Nearly a two-billion-dollar mining and transportation business for the people of the lakes to look forward to, and this from a single range!



UNLOADING MACHINES AT CONNEAUT, EMPTYING ORE FROM THE WILLIAM E. COREY

"But will not this tremendous activity exhaust your mines?" I asked of several of these iron barons. "The ore doesn't go down to China, and it doesn't extend all over the state. What is the future?"

The future! Few have thought of this. There are just at present too many millions of dollars in the making to give one time or inclination to picture the days when only black and silent scars will remain to give evidence of the time when this North Land was one of the treasure houses of the earth. But that time must come. Old mining men say so, if you can get them to talk about it, and scientific computations, as far as they go, are proof of it. These computations differ, but they agree pretty generally that there are still between a billion and a half and two billion tons of ore in the Superior district. Within the next five years the ships will be bringing down fifty million tons a year, and there is no reason for believing that this will be the maximum. So it is obvious that the ore of the Lake Superior regions will not last beyond the year 1950 unless new deposits are discovered, or methods are found for the utilization of immense deposits that can not now be used.

"Will this event not prove ruinous to a large extent to shipping interests?" I asked G. Ashley Tomlinson, of Duluth, and others closely associated with iron and vessel interests. "To-day nearly a half of the total tonnage of the Lakes is from the mines. If this industry becomes practically extinct what will become of the hundreds of ships engaged in the traffic?"

Mr. Tomlinson's answer struck me as extremely logical. "The production of ore will probably reach its maximum within the next ten years," he said. "It will then begin to decline. But the decrease will be gradual, and meanwhile other freight traffic on the lakes will be increasing so rapidly that each year ships that were intended originally for the ore trade will carry other business.

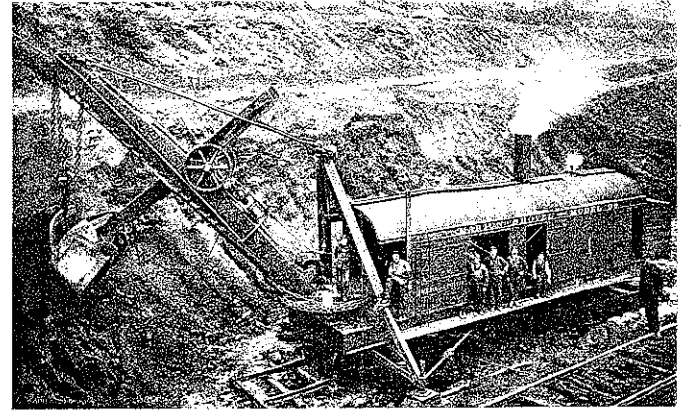
There will be no loss for the ships. The development of our own and the Canadian west has only begun, and the lakes are the great links of commerce between their vast enterprises of the future and the east. The grain trade of the Canadian west alone will in the not distant future be something tremendous."

But whatever the future of the ore regions of the north may be, their present is one of great interest and importance to the world at large. Mining, like shipbuilding, has been reduced to a science on the lakes. A stranger visiting for the first time any one of the five ranges is filled with astonishment. I will never forget the sensations with which I first saw mining on the Mesaba range. We had come up over a forest-clad hill and stood on the very edge of the mine before I had been made aware of its nearness. Below me there stretched a mile of deep, huge scars in the bottom of what seemed to be a great hole dug into the earth. One of these pits, half a mile in diameter, and, as I afterward discovered, nearly two hundred feet in depth, was almost at my feet.

"That's iron ore," said my companion. "And right there it goes one hundred feet deeper down."

This was one of the great "open pits" of the Mesaba range. There are many others like it in the Superior regions. They are the most wonderful mines in the world. Imagine that you take a barrel of salt, dig a hole, pour the salt into this hole and cover it with a few inches of earth. This gives you an idea of one of these ore mines. After the earth has been "stripped" from the top the ore is reached, and it is found in much the same way that the salt would be found. In the words of one superintendent, it is "all together." It is as if Nature, like a pirate, had dug holes here and there in which she had hidden her treasure, covering it over for concealment with a few feet of earth.

Down into these pits and along their



SCOOPING UP ORE FROM THE MAHONING MINE AT HIBBING, MINNESOTA. THE LARGEST OPEN-PIT MINE IN THE WORLD

edges run the tracks of the ore cars. There is here but little of the shoveling and "picking" of men. Steam shovels, weighing from sixty to seventy-five tons each, do the work. Like a great hand one of these shovels dips down into the soft mass of ore, buries its great dipper until it holds from four to eight tons, and then, groaning and rumbling, slowly lifts its burden aloft, swings it over a car, and the actual work of mining is done. A thousand times a day it will repeat this operation, lifting from three thousand to eight thousand tons of ore. This one shovel keeps busy three locomotives and as many trains of dump cars. And there are nearly two hundred of these shovels in use on the Mesaba range alone. It costs only about six cents a ton to mine in this way, after the "stripping" has been done, or, in other words, after the ore has been laid bare. There are two other processes on the ranges where the ore is not so soft or so closely laid. One of these is the milling process, and the other is the blasting out of hard ore.

Milling costs about thirty-five cents per ton, and the blasting process from one dollar to one dollar and twenty-five cents.

Why it is impossible to build ships fast enough for the demand may most graphically be shown, perhaps, by quoting a few figures which demonstrate the tremendous energy now being exerted in the ore regions of the north. Figures as a usual thing are uninteresting, but these enter so vitally into the welfare of every American citizen that they should be regarded with more than ordinary respect. As stated before, we are now making nearly a half of all the iron and steel produced on earth. In 1880 we made only one million two hundred and forty-seven thousand tons of steel; in 1890 this had increased to over four million; in 1900 to ten million one hundred and eighty-eight thousand tons, and in 1905 to twenty million and twenty-three thousand tons. Lake ships and lake mines had to supply this. And now we come to mine figures which almost stagger belief.

In 1904 the Mesaba range, for instance, yielded only a little over twelve million tons. In the following year the production was nearly doubled, the ore carriers bringing down twenty million one hundred and fifty-three thousand six hundred and ninety-nine tons, which in 1906 was increased to almost twenty-four millions!

This enormous annual tonnage of the Mesaba range, together with that of the other four ranges of the Superior region, is carried by rail directly from the mines to the great ore docks of lake ports. The product of the Mesaba and Vermilion ranges, in Minnesota, is shipped from Duluth and Two Harbors; the eight million tons of the Goebic and Marquette ranges, in Michigan, from Escanaba and Marquette, and the five million tons of the Menominee range, in Wisconsin, from Ashland and Superior.

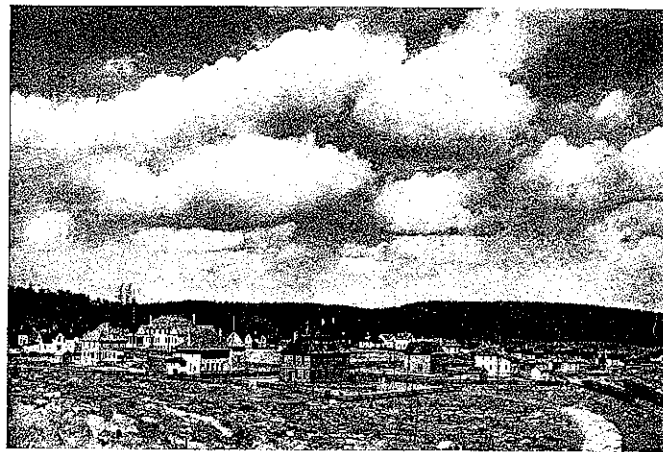
To these six ports of the North Land come the vikings of the lakes and their immense fleets. Four of these ports are within a radius of seventy-five miles, and the two others, in Michigan, are about one hundred and fifty miles farther east and south. No other area of lake or ocean in the world is as much traveled by shipping as that along which these ore harbors are situated. The people of Duluth have witnessed blockades of vessels such as have never been seen in the greatest ocean ports. Over this part of Superior there is a constant trail of smoke from the funnels of ships. During one month there were one thousand two hundred and twenty-one arrivals and clearances from Duluth alone, an average of forty a day.

Behind these great ships, which rest never a day nor an hour for eight months of the year, are the kings of lake commerce—such men as J. C. Gilchrist, James Davidson, Captain Mitchell, William Livingstone, Harry Coulby, W. C. Richardson, A. B. Wolvin, G. Ashley Tomlinson, and scores of others. To write of these would be to chronicle a

history of men who have fought their way to the top through sheer force of the "breed that is in them."

Take G. Ashley Tomlinson, of Duluth, for instance, whose ships carry a couple of million tons of ore a year. "Not a great record," as Mr. Tomlinson modestly says, but still enough to supply every man, woman and child in the United States with a little matter of fifty pounds each twelvemonth! In a novel Tomlinson would make an ideal soldier of fortune; in plain, matter-of-fact life he represents those elements which make the great men of the lakes. He is forty years old. He has fourteen ships, with two others ordered for 1908 delivery. His income is over one hundred and fifty thousand dollars a year.

Yet Tomlinson began, as did many other great lake men of to-day, with just two assets—the clothes on his back and a huge ambition. He started his career as a messenger boy in the state treasurer's office at Lansing, Michigan. But there was not enough of the strenuous life in this for him, so he went west to become a cowboy. He succeeded, much to his regret; for soon after he had mastered the broncho and could handle a lasso there came the war between the cowboys and the White River Utes. In one of the fights Tomlinson was wounded and afterward captured by the redskins. During the whole of one night he was subjected to torture, and at dawn of the following day, when almost at the point of death, he was delivered by a party of ranchmen. Tomlinson was not one to display the white feather—but he had had enough of western life, and as soon as possible he worked himself from Rawlins, Wyoming, to Chicago on a cattle train. After a time he came to Michigan, and with his savings attended the University of Michigan for about a year. This was enough of "higher education" for him, so he sold his text-books and went to work on the *Detroit Journal* at the munificent salary of six dollars a



A MINING TOWN IN THE MESABA RANGE. TWENTY-FIVE YEARS AGO THERE WAS NOT A HOUSE IN THE WHOLE OF THIS GREAT WILDERNESS

week. Newspaper work was all right until Buffalo Bill came along. Tomlinson joined the show, rode a bucking broncho for a year, then "developed" a voice and cast his fortunes with the Mapleson Opera Company. In 1889 he went to New York as a reporter on the *Sun*, returned the following year to become night editor of the *Detroit Tribune*, and in 1893 moved to Duluth.

The lakes began to hold a peculiar fascination for him. He went into the vessel brokerage business, mostly on his nerve; but nerve made him money, and his capital began to grow. How fast it has grown during the past dozen years one must judge by his ships and his income. He is now building a million-dollar drydock at Duluth. He is president of five steamship companies, vice-president of another, secretary to three more, and a director in the American Exchange Bank, of Duluth, and the Cananea Central Copper Company. He

has developed from a typical adventurer of fortune into one of the great men of the lakes. His romantic career is described here because it is illustrative of the fact that brain and brawn, not "pull" and money, have made the vikings and iron barons of the inland seas. No millionaires' sons here, living on their fathers' prestige—no blue-blooded drones in these regions of the five little seas, where only red blood counts!

When the first ships of the season come up from the south in April or May, nearly a million and a half tons of ore are awaiting them in the docks of the ore-shipping ports. There are twenty-six of these ore docks, one of which, at Duluth, has a storage capacity of ninety-six thousand tons. From a distance these docks look like great trestles, from fifty to one hundred feet above the water, some of them running for nearly half a mile out into the lake. Out upon these docks run the cars from the mines. From



CAPTAIN JOSEPH SELLWOOD
One of the oldest and greatest of the iron barons



F. W. GILCHRIST
One of the best known lumbermen on the Lakes

these cars the ore is dropped into huge pockets, and from which run downward long chutes, or spouts. A ten-thousand-ton carrier runs alongside. Her hatches are opened. Into each hatch runs a chute. The chute "doors" are opened, and with a dull, rumbling, rushing sound the ore pours down by force of gravity from the huge pockets above. At dock No. 4, Duluth, nine thousand two hundred and seventy-seven tons were put aboard the steamer *E. J. Earling* in seventy minutes, being at the rate of seven thousand nine hundred and eighty-eight tons an hour. The rapidity with which lake transportation is carried on is shown in the fact that upon this occasion the *Earling* was in port only two hours and fifteen minutes before she began her thousand-mile return trip eastward.

And now comes the last important phase. One viewing the continuous activity at the mines, the building up of cities on the ranges, and the tremendous interests represented in the great shipping ports may forget that this is but one end of the gigantic industry which shows the United States the steel maker for the world. At the other end of the fresh-water highways is seen the other half of the picture. Down into Erie come the ships from the north. A few of them go to Chicago, but only a few. Out of a total movement of thirty-seven million tons in 1906 thirty-two million tons were received at Lake Erie ports. There are eleven of these "receiving ports"—Toledo, Sandusky, Huron, Lorain, Cleveland, Fairport, Ashtabula, Conneaut, Erie, Buffalo and Tonawanda.

Between these cities there is a constant battle for prestige. Now one leads in tonnage received, now another. At the present time the bitterest rivalry exists between Cleveland, Ashtabula and Conneaut, the three greatest ore ports in the world. In 1901 Ashtabula led. In 1902 Cleveland bore away the "pennant," with Ashtabula and Conneaut second and third. Cleveland was still

ahead in 1903, but in 1904 Conneaut became the greatest ore-receiving port in the world. In 1905 Ashtabula had again won the ascendancy, and in 1906 she maintained her prestige, receiving in that year six million eight hundred and thirty-three thousand three hundred and fifty-two tons; Cleveland was second and Conneaut third. Lorain, Fairport, Ashtabula, Conneaut and Erie practically exist because of the ore which comes down from the northern mines. Seven million dollars are now being expended in the improvement of Ashtabula harbor by the Lake Shore and Pennsylvania railroad companies, and the capacity of the harbor has been doubled since 1905. With the improvement of that harbor Conneaut's greatest advantage will be gone, for until a comparatively recent date nearly all of the largest vessels went to that port. The tremendous activity in Ashtabula must be seen to be fully appreciated. In one day lately almost four thousand ore and coal cars were moved between that port and Youngstown.

At this end of the great ore industry the wonderful mechanism for the handling of cargoes is even more astonishing than that of the North Land. The ore carrier is run under a huge unloading machine which thrusts steel arms down into the score or more hatches of the vessel, and without the assistance of human hands the cargo is emptied so quickly that the uninitiated observer stands mute with astonishment. How quickly this work is done is shown in the record of the *George W. Perkins*, which discharged ten thousand three hundred and forty-six tons at Conneaut in four hours and ten minutes.

Once more, after this unloading, the steel monster of the lakes is all but ready for her long journey into the north. Within a few hours she is reloaded, with a few sonorous blasts of her whistle she bids a last adieu, and again she is off on the long trail that leads to the "ugly wealth" in the ore ranges of Superior.



WILLIAM LIVINGSTONE
President of the Lake Carriers' Association



G. ASHLEY TOMLINSON
Who rose from a typical adventurer of fortune to be one of the largest individual ship-owners on the Lakes