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THE GREAT LAKES

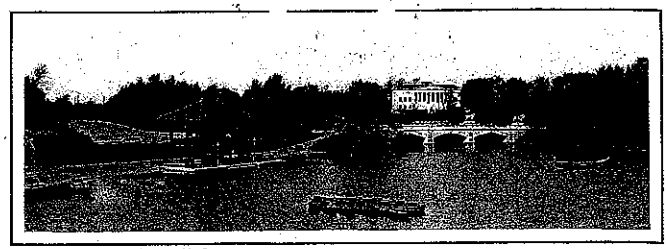
VI—BUFFALO AND DULUTH: THE ALPHA AND OMEGA OF THE LAKES

By JAMES OLIVER CURWOOD

IS the day approaching when Buffalo and not Chicago will be the second largest city in the United States? and when, at the end of Lake Superior, her back doors filled with the treasures of the earth and with a developed empire about her, Duluth will claim a million inhabitants? Is the day far distant when the world's greatest manufacturing city will be located on the Niagara River? and when, as steel men all the world over believe, Duluth will be a second and perhaps greater Pittsburg?

These are questions which have never been of greater interest than now, when the State of New York is expending over a hundred million dollars on the new Erie Canal, thus "bringing Buffalo and the Lakes to the sea," and when, at the same time, the United States Steel Corporation is devoting ten million dollars to the erection of the most modern steel plant in the world at Duluth.

"Buffalo is the great doorway of the Inland Seas," said President McKinley only a short time before his tragic death. "Some day she will reach out to the ocean, and when that time comes she will be one of the greatest cities in the world." For many years the people of Buffalo have dreamed of this. And now it is coming true. And while the Pittsburger, entrenched in the prosperity of steel and fortified behind the smoke of his own mills, has been laughing at prophecies, away up at the end of the thousand-mile highway that leads to Duluth, other people have been dreaming. And their dreams, too, are coming true. For years the



BOAT-LANDING IN THE PARK, BUFFALO, NEW YORK

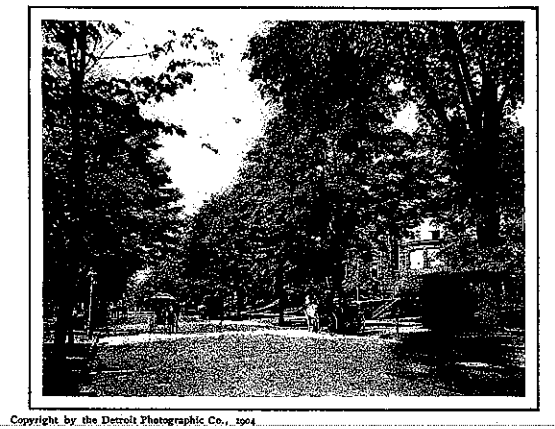
silent struggle for the supremacy of cities has been in progress along the Great Lakes. The outside world has seen little of it, and has heard little of it. Now the beginning of the end is at hand. The two great doors of the Inland Seas have been opened wide. At one end is Duluth, at the other Buffalo. Chicago is great, Buffalo may be greater. Pittsburg, like ancient Rome, feels that hers is to be a reign unbroken, and that she will still be "Pittsburg Queen of the World of Steel" until the last call of Judgment Day. In another ten years—perhaps in less time—she will recognize the power of her rival in the North.

These are predictions, but they are well founded. To find just why they are made, one must go among the powerful men of the Lakes, among the iron barons of the North and the coal barons of the South and East—must, in short, become acquainted with the entire commercial and industrial mechanism which exists on the Great Lakes to-day. They are not predictions that can be arrived at from New York, or San Francisco, or London, or Liverpool. One must talk with the men who make them, must live among those commercial and industrial conditions for a long time, and must know at first hand the two cities we speak of—Buffalo and Duluth. They are predictions which have a solid foundation of facts, and these facts are what make these two cities the most interesting as well as the most important ports in the Western World, with the exception of New York City. I venture to say that only a ridiculously small percentage of our own people—of Americans, whose very existence as an industrial and commercial power depends largely upon the Lakes—know these two cities beyond their names, their location and possibly the number of their inhabitants. How many, for instance, know that to-day Duluth is the second greatest port on earth; that London, the capital of the British Empire, queen of the world's commerce for many years, has abdicated in favor of a port so remote from the heart of British commercial enterprise that it is doubtful if fifty thousand of the five million people of London have ever heard of the name of the city which has taken the place of the world's metropolis in the list of the great harbors of the world? And how many know, as well, that within a single night's ride of the city of Buffalo—within a radius of less than five hundred miles—live sixty per cent. of the total population of North America?

These are only two of the remarkable facts about Buffalo and Duluth, the Alpha and Omega of the Inland Seas. That they are now two of the greatest freight-distributing points in the United States is shown by figures; that within the next generation they will become the two greatest distributing cities in the world is almost a certainty. It is not only Lake commerce that assures their destinies. Logically, they are situ-

ated to rule the world of commerce in the United States. Duluth is approximately midway in the continent, with a clear waterway soon to reach to the ocean, and with the great West behind her already webbed, with Duluth as the centre, by thirty-seven thousand miles of rail; and Buffalo, with sixty million people within five hundred miles of her City Hall, with fifteen great trunk-lines entering the city, with the greatest electrical power of the age at her doors, with "one hand on the ocean and the other on the Inland Seas," holds a position which no other city can ever hope to attain. According to H. C. Elwood, Chairman of the Transportation Committee of the Chamber of Commerce of Buffalo, to-day! Last year it was five and a half millions. The position that both Buffalo and Duluth hold in the commerce of the Lakes is briefly told in figures. Of the total tonnage of ninety-seven million carried on the Lakes last year, more than fourteen and a half million were registered at Buffalo and thirty-five million at Duluth-Superior. In other words, over a half of the total tonnage of the Lakes passed in or out of these two great doors of the Inland Seas in 1907.

There are few cities in the world to-day in which romance and adventure have combined in more extraordinary ways with calamity, failure and indomitable courage than in the upbuilding of Duluth. Chiselled back



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DELAWARE AVENUE, BUFFALO, NEW YORK, IN SUMMER

the combined rail and water tonnage of that city is not exceeded by that of any other city in the United States, with the exception of Pittsburg. And the story of Buffalo's commerce has just begun. In 1885 Buffalo's total tonnage of iron ore received by Lake was only a little more than eight thousand,—less than the single cargo carried by one of the great freighters of the Inland Seas into the rocky hillsides, terrace upon terrace, and stretching for miles along the bay front where only a quarter of a century ago was the wild and rugged grandeur of virgin wilderness; built upon rock, and in rock; looking down upon one of the finest harbors in the world on one hand, and up over vast regions red with iron treasure on the other, Duluth is one of the most beautiful cities

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RESIDENCE OF JOHN G. MILBURN, BUFFALO, N. Y., WHERE PRESIDENT MCKINLEY DIED

in the United States—one of the most wonderful and most interesting. Twenty-five years ago only a village marked this stronghold of the iron barons. The deer, the wolf, the bear, the moose roamed unafraid over places now alive with commercial activity. Into the vast unexplored wildernesses, even less than a dozen years ago, prospectors went out with their packs and their guns, and searched and starved and even died for the "ugly wealth" hidden in the ranges that are now giving to the world three-quarters of its iron and steel. And to-day many of these same men, "whose callouses of the old prospecting days have hardly worn away," live in a city of eighty thousand people, whose annual receipts from its industries aggregate fifty-five million dollars, and whose invested wealth is over one hundred and fifty millions. While London, Liverpool, Hamburg, Antwerp, Hongkong and Marseilles have had eyes for New York alone in this Western World, while the ports of ancient and historic renown have been struggling among themselves for supremacy, away up at the end of the Lake Superior wilderness the second greatest port in the world was building itself, quietly, unobtrusively, unknown. That is the story of Duluth in a nutshell.

But it is only the first chapter. The others will be written even more quickly, perhaps with even greater results. The commerce of America's five Inland Seas has but just commenced, and the growth of this commerce and the growth of Duluth go hand in hand. In 1892, for instance, only four thousand tons of ore were shipped from the Duluth-Superior harbor; last year, including the sub-port of Two Harbors, the total was nearly thirty millions! And this same percentage of increase holds good with other products. Fifteen years ago very few people along our seaboards would have recognized the name of Duluth; to those who knew the town it was often an object of ridicule—the "pricked balloon," the "town of blasted hopes." Yet in 1907 this same town, still unknown in a large sense, handled one-sixth of the combined tonnage of all the two hundred and forty shipping ports on the coast of the United States. During the two hundred and fifty days of

RESIDENCE OF ANSLEY WILCOX, BUFFALO, N. Y., WHERE PRESIDENT ROOSEVELT TOOK THE OATH OF OFFICE

navigation in 1907, an average of fifty-six vessels entered or left Duluth each day, or one ship every twenty-six minutes, day and night, for eight months. These vessels carried cargoes valued at two hundred and eighty-eight million dollars. In other words, over a million dollars a day left or entered Duluth-Superior harbor.

Not long ago a writer who was seeking information on the possibilities of our inland waterways asked me what would happen when, as experts predicted, the ore of the North became exhausted. "Where will Duluth be then?" he questioned. This is what nine people out of ten ask, who are at all interested in the future of Duluth. There seems to be an almost universal opinion among people who do not live along the Lakes that, with the exhaustion of the great iron deposits, the commerce of our Inland Seas will dwindle. A more near-sighted supposition than this could hardly be imagined. At the present time ore is the greatest object of commerce on the Great Lakes, and it will continue to be so for many years. It is safe to say that the day is not far distant when fifty million tons of iron ore, instead of thirty million, will leave Duluth each year; and at the same time millions of tons of steel will be leaving by rail. But Duluth's great future does not rest on iron and steel alone. As I have said, thirty-seven thousand miles of rail already reach out from the city into the vast agricultural regions of the West. It is the one logical doorway of the vast empire at its back, to which it offers the cheapest and shortest route to the Atlantic and Europe; just as it must become the great distributing point through which the bulk of the vast commerce of the East will flow into the West. There is more agricultural and grazing land tributary to it than to any other port in America. And Minnesota is still one of the great timber States of the country in spite of the vast scale on which lumber operations have been carried on within its boundaries during the past few years. Lake, Cook and other northern counties (several of these counties are each as large as a small state) possess great forest wealth, and for many years to come Duluth will be the great lumber-shipping port of the Lakes.

THE ALBRIGHT ART GALLERY, BUFFALO, NEW YORK

These are a few of the reasons why Duluthians see in their city a future metropolis of perhaps a million people.

Though a large part of the almost endless fertile regions behind it are still undeveloped, Duluth has already become the great grain-shipping port of the world. Last year over eighty million bushels of grain were shipped from the Duluth-Superior harbor, or a bushel for every man, woman and child in the United States. There was a time when it was thought that Chicago would always be the greatest grain port on earth. But that time has passed. Of the grain received at Buffalo in 1907, less than forty-two million bushels came from Chicago, while more than sixty-three million were shipped from Duluth-Superior. And this grain traffic is growing even more rapidly than the ore traffic. Ships can hardly be built fast enough to handle the volume of wheat, oats, barley and flax that come by rail into Duluth. The city can handle one thousand cars a day, or a million bushels, and yet this is not fast enough. So great is the crush at times that cars of grain are lost for three weeks in the yards! In the not distant future Duluth will be handling two thousand cars a day. Not only wheat, oats, corn, rye and barley are pouring into Duluth from the West, but she has now taken first place as shipper of flaxseed, nearly twenty million bushels having left Duluth-Superior harbor last year. Just what this quantity of flaxseed means very few people unacquainted with that product can realize. Take the four hundred thousand bushels brought down to Buffalo by the *D. R. Hanna* in a single trip, for instance. It was loaded in seven hours and was the product of forty thousand acres, or sixty-two square miles. It was worth $460,000, and would make one million gallons of linseed oil.

April 1, 1907, was probably the most memorable day in the history of Duluth; for on that day official notice was received from New York that the Steel Corporation had decided to establish an iron and steel plant in Duluth. At first it was planned to cost ten million dollars. Now it is believed that much more than this will be expended. Preliminary work has already commenced, and within a year and a half it is expected that the plant will be in operation. This movement on the part of the great corporation that rules the world of steel is for several reasons the most interesting that it has ever made. For years the ore of the North has been carried a thousand miles to the smelters of the East. To reach Pittsburg, it was not only transported that thousand miles, but was loaded three times and unloaded three times. And, meantime, while millions of dollars were being expended on the transportation of ore, while cities half way across the continent existed

and were growing because of their smelters, the city of Duluth, with the vast iron deposits at her back door, was not making a ton of steel. This is one of the mysteries which the Steel Corporation does not explain; but it is fair to assume that hitherto there has not been a sufficient market for the products of such a plant within paying reach of this port.

The new plant will bring thirty thousand people to Duluth—and this is not the end. Those who are acquainted with the situation say that it is but the first step in the making of a second Pittsburg. "The steel industry," they say, "brought almost a million people and billions of dollars to Pittsburg—a city a thousand miles from its ore, and without natural advantages. What, then, will it mean to Duluth, with its strategic position on the great highways of commerce, with its cheap water-power, and above all with its ore ready to be dumped direct from the mine cars into the smelters?"

In short, the dreams of Duluth's old "boomers" are coming true. The great East, with its railroad and manufacturing development, has been supplied with its steel—from Pittsburg. Now it is the West and Southwest, and the Orient, to which our great volumes of steel trade will turn. It is Duluth's chance. Because the ore is at her doors, she can turn out iron and steel cheaper than any other city in the world; and she is the nearest distributing point to the West. This movement to Duluth is inevitable. The world's steel industry has been constantly moving and changing. Since 1645 the centre of the industry has moved from Birmingham, England, from Lynn through Connecticut to New Jersey, then to Philadelphia, and lastly to Pittsburg, where it has remained for fifty years. Of late years the tendency has been westward, the movement culminating in Chicago. Now it is centring in Duluth. In a way, Duluth's history will be similar to that of Pittsburg. Duluth and Superior, twin cities with one harbor and identical interests, cannot follow the example of Pittsburg and Allegheny, and unite politically, as state lines divide them, Duluth being in Minnesota and Superior in Wisconsin; but commercially they are fast becoming one. Together they will not only head the ports of the world, probably for all time to come, but will become one of the greatest manufacturing centres on the continent. With a harbor frontage of forty-five miles, with electrical power from the St. Louis Falls second only to that of Niagara, with iron and steel at her doors, and with a world-market behind her, Duluth, already the largest coal-receiving port in the world, possesses manufacturing advantages beyond those of any other city on the continent, with the exception of Buffalo. There are good reasons why this coming Pittsburg of the North will never equal Buffalo in population and commercial activity; there are just as good reasons why no other city in the United States, with the exception of New York and Chicago, will equal Buffalo. At the same time, as a member of the Steel Corporation said to me: "If steel and only a few natural advantages made Pittsburg what it is—what will steel, and all the natural advantages in the world, do for Duluth?"

Of course it is not possible to conceive that Duluth, even as a great steel city, would use more than a small fraction of the enormous ore tonnage that is annually taken from the Minnesota ranges. If millions of dollars were spent each year in the erection of new steel plants in Duluth, even the annual *increase* of ore taken from the mines could not be used at home for a long time to come. The ore traffic on the Lakes is bound to become larger even as Duluth develops into a steel city. And a constantly increasing percentage of this ore is going to Buffalo—not to be trans-shipped to Pittsburg, but to be converted into iron and steel in that city. I believe that very few people are aware of the fact that Buffalo is already an important iron- and steel-

MINNESOTA POINT, DULUTH, SHOWING SHIP CANAL BETWEEN LAKE SUPERIOR (AT LEFT) AND DULUTH–SUPERIOR HARBOR

This extraordinary peninsula extends six or seven miles, making a natural breakwater. The entrance to the harbor for vessels bound for Superior, Wisconsin, is at the other end

smelting point. The largest independent steel-making plant in the United States is now in operation in South Buffalo. This is the Lackawanna Iron and Steel Company, capitalized at sixty million dollars, employing between six and ten thousand men, and undergoing constant enlargement. The plants of the New York Steel Company and the Wickwire Steel Company are now in course of construction on the Buffalo and Niagara rivers, and other steel- and iron-making plants are in operation. Each year sees Buffalo drawing more and more ore away from the Pittsburg smelters. In 1900 Buffalo made only three hundred and seventy thousand tons of pig-iron. In 1907 the production was one million three hundred and fifty thousand tons, and this year there will be a tremendous increase. A recent investigation showed that the many great iron-producing and iron-working plants which extend along the navigable waters of the Buffalo have doubled their pay-rolls and almost trebled their production since 1900. The same investigation brought forth the fact that a ton of foundry iron can be produced in Buffalo for sixty three cents less than in Pittsburg. After a year's study of the situation in Buffalo, Mr. Elisha Walker, the international expert in iron and steel manufacture, said that, in a few years, Buffalo would rival Pittsburg in the use of iron ore.

While steel plants are generally the most powerful agents that work for the increase of a city's population and wealth, and while it is true that scores of smaller users of iron and steel are flocking to Buffalo, just as other hundreds grouped themselves about the big parent furnaces in Pittsburg, Buffalo's great future does not depend upon her development as a steel-manufacturing city. As F. Howard Mason, Secretary of the Buffalo Chamber of Commerce, said to me recently: "Buffalo has more than one iron in the fire. Steel is but one of many things that will make her a city of millions a quarter of a century from now."

From my own investigations and from my own close study of lake traffic, I feel confident in saying that, although Buffalo is one of the important ore-converting centres of the country, steel and iron are not the most important of the agents that will work for her future greatness. This may seem inconceivable to those who live in cities the very existence of which depends upon iron and steel; yet it is one of the soundest arguments for the optimistic opinion that Buffalo is destined to become the third, if not the second, largest city in the United States. Just as Duluth is the logical shipping and receiving port of the West, so is Buffalo the great receiving and distributing port of the East. Cleveland

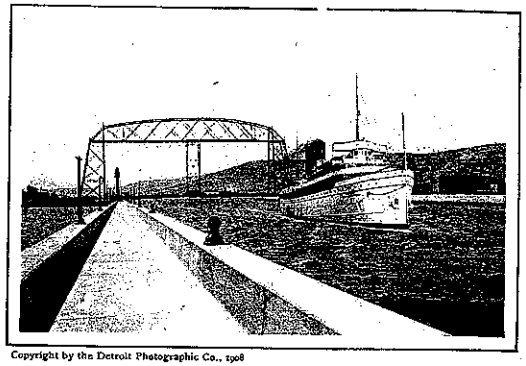
will always be an important lake port, but it is impossible to compare its destiny with that of Buffalo. With the new Erie Canal in operation, lake highways from west to east will lead to Buffalo as surely as all roads led to old Rome. This year the total tonnage of Buffalo Harbor, which is closed for at least four months of the year, will be considerably greater than that of Liverpool. Of the products passing through the Detroit River in 1907, ninety per cent. of the hard coal was shipped from Buffalo, seventy-five per cent. of the flour and ninety-five per cent. of the wheat came to Buffalo; also seventy-five per cent. of the corn, ninety-eight per cent. of the oats, ninety per cent. of the flaxseed and ninety-five per cent. of the barley. In other words, Buffalo may be regarded as almost the only receiving port on the Lakes for Western grain.

Mayor Adams hit the nail pretty squarely on the head when he said that Buffalo's future greatness rests chiefly upon the fact that this city will, within a very few years, be the greatest converting, or manufacturing, point in North America. The cost of bringing raw materials to her workshops from all Western points is already reduced to a minimum. The Erie Canal will link her mills with the ocean. The unlimited resources of Niagara furnish her with the cheapest power in the world. Her proximity to the coal-fields provides her with fuel for $1.60 to $2.60 per ton. Natural gas for manufacturing purposes is retailed at a little over twenty-seven cents per thousand cubic feet. And, above all, there are sixty millions of people within five hundred miles of her City Hall. It was between 1900 and 1905 that Buffalo really awoke to her unlimited opportunities. It is interesting to compare her growth between those years with that of Pittsburg, one of the most progressive cities in the United States. In that time Pittsburg's capital increased twenty-two per cent., Buffalo's forty-six per cent. The number of wage-earners in Pittsburg increased a little over two per cent., while in Buffalo they increased twenty-nine per cent. The value of Pittsburg's products increased three per cent.; of Buffalo's, forty-two per cent. These figures show the remarkable rapidity with which Buffalo is overtaking the cities ahead of her in population.

Because of the water-ways at her door, cheap power, and the millions of consumers within a night's reach of her mills, Buffalo has become the second city in the United States in the production of flour, now ranking next to Minneapolis, and at her present rate of increase she will be the world's greatest milling centre in another five years. In 1901 she was producing only about half a million barrels of flour; in 1907 her product was over three million barrels, and it is predicted that the output this year will be four millions. Within the last two years Buffalo has become the chief malting city in America. Last year her output was ten million bushels as compared with four million in 1900.

To handle her lake freight at the present time, Buffalo has twenty-four elevators with a total storage capacity of twenty-two million bushels, and a daily elevating capacity of six million bushels; nine ore docks; five coal trestles with a daily loading capacity of twenty-two thousand tons—and with these might be included three railroad storage-yards with an aggregate capacity of four hundred thousand tons. Thirteen lines of steamships, not including the many companies represented by the big freighters, ply the Lakes from Buffalo; and the fifteen trunk lines centring in the city provide two hundred and fifty-three passenger trains a day. With all of this vast machinery working night and day to care for Buffalo's present traffic, the question naturally arises, What will happen to Buffalo when the new Erie Canal links her with the sea?

During the next decade, or less, Buffalo will astonish the whole world by her industrial growth. The effects



SHIP CANAL AND AERIAL BRIDGE, DULUTH, MINN.

This opening across the base of Minnesota Point was cut in great haste, as the neighboring city of Superior, Wis., sought to prevent by injunction the construction of the canal. The "traveller" carries trolley-cars, trucks and foot-passengers

of the canal project are already being felt, and manufacturing capital is hurrying to Buffalo as never before. The Federal Government is deepening the Niagara River to a depth of twenty-one feet as far down as North Tonawanda, and this, together with the deepening of the Buffalo River, is opening up a new territory for factory sites, soon to be accessible to the largest ships. Millions of dollars of capital are locating, or planning to locate, here. On the one side is the cheap transportation of the lakes; on the other will soon be the "man-made river reaching to the sea." With the joining of these water-ways no other city in the United States will be able to compete with Buffalo as a manufacturing centre.

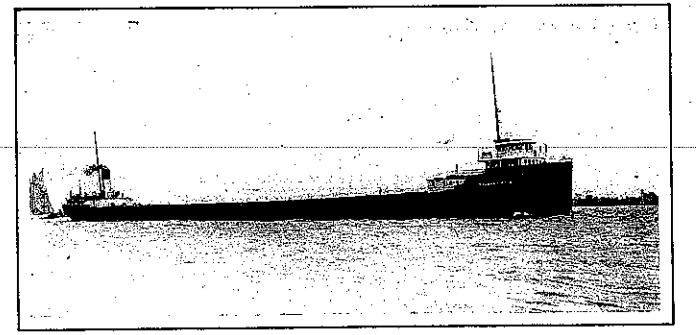
The actual task of digging the new canal for which the people of New York voted one hundred and one million dollars, and which will connect Buffalo with tide-water by a thousand-ton water-way, is now at hand. Few people realize just how stupendous this task is. While every intelligent American is acquainted with the Panama Canal project, few know that this connecting link between the lakes and the ocean is a greater public improvement for the State of New York to carry out than is the building of the Panama Canal for the United States Government, and it is of hardly less commercial value. Its cost will be greater than that of Suez, and in a short time its tonnage will be more than that of Suez. The first one hundred and twenty-five miles were under contract in January, 1908, with another sixty-five miles ready to be contracted for. Plans and specifications for the rest of the canal will be completed this year.

This great water-way, including the Hudson River, will pass from or to and through the city of New York and adjacent cities in New Jersey, Poughkeepsie, Albany, Troy, Schenectady, Utica, Syracuse, Oswego, Rochester and Buffalo, besides smaller towns, possessing an aggregate population of over six million. The canal when completed will really terminate at Tonawanda, on the Niagara River, the route to Buffalo from there being via the Niagara River, the federal ship canal and the Erie Basin. While the old canal has a depth of only from seven to nine feet and a width on the bottom of fifty-two, the new water-way will have a uniform depth of twelve feet, with a minimum width

at the bottom of seventy-five feet, thus being capable of carrying boats one hundred and fifty feet long, twenty-five feet beam, and with a draft of ten feet. The present capacity of an Erie Canal boat is two hundred and forty tons, while the new boats will carry a thousand tons.

I have shown in preceding articles what a tremendous saving to the people of the United States is made because of lake transportation, and this will be greatly increased by the new canal. Large aggregations of capital will own not merely lake vessels, but terminals and canal fleets as well, so that from lake ports they can name a through freight rate to New York or to foreign countries. Within a few years after its completion, the canal will probably be carrying twenty million tons of freight from Buffalo to the ocean. Taking this figure as a basis, it is easy to figure what a tremendous saving the canal will bring about. It now costs three and a half cents a bushel to send grain from Buffalo to New York. The new canal rate should be not more than a cent a bushel. On twenty million bushels of grain this means a saving of five hundred thousand dollars, which will either go into the pockets of the producer or the consumer or be divided between the two. Freight of all descriptions, manufactured products, and iron and steel, can be transported from Buffalo to tide-water for a half of a mill per ton per mile. In other words, on the new canal all kinds of freight can be shipped from Buffalo to New York, a distance of four hundred and forty-six miles, at twenty-two cents per ton. The present cost is eighty-seven cents. On twenty million tons this saving of nearly sixty-five cents a ton would total nearly thirteen million dollars.

What this would mean to Buffalo it is almost impossible to estimate, especially in regard to the steel industry. Buffalo now has an advantage over Pittsburg in the cost of ore, limestone and several other matters incident to the manufacture of iron and steel, Pittsburg's sole remaining advantage being its proximity to coking coal. This will be obliterated. A large percentage of the vast steel and allied industries centring at Pittsburg will, of their own volition, move within the boundaries of the State of New York and locate along the Niagara frontier. This industrial migration has already begun. It will continue, naturally, ceaselessly. The ore will meet the coke at Buffalo, and the manufactured product will be floated down the Erie Canal instead of being hauled across the Alleghanies. This is inevitable.



THE OLD AND THE NEW

The great ore-freighter, "Thomas F. Cole of Duluth," passing one of the schooners that used to abound on the Great Lakes

And just as inevitable is the migration of other industries to Buffalo from other cities. Not only does the cheap lake and canal transportation call to them, but also the cheap and unlimited power of Niagara. A few years ago George Westinghouse said: "I expect to live to see the day when a city that will astonish the world will stretch along the entire Niagara frontier—and this city will be Buffalo." Those who investigate this frontier to-day cannot fail to see the strength of his prediction. Tesla said that Niagara power would revolutionize manufacturing in the United States. It is already revolutionizing it in and about Buffalo, and the power of the world's greatest fall has only been tapped. On the American side the Niagara Falls Power Company is developing one hundred and five thousand horse-power, and the Niagara Falls Hydraulic Power and Manufacturing Company fifty thousand, while on the Canadian side the Canadian Niagara Falls Company is developing fifty thousand horse-power and the Electrical Development Company and the Ontario Power Company sixty-two thousand each. Less than four per cent. of the total flow of water over Niagara Falls has been diverted by the companies now in operation. The total fall of water is theoretically capable of producing over seven million horse-power, which would run virtually all of the manufacturing plants in the United States.

At the present time about seventy-five thousand electrical horse-power is consumed in Buffalo by manufacturing and mercantile establishments. What this cheap power means to the city can best be shown in figures. In nearly all cities the power required for manufacturing purposes is derived from steam produced from coal. In its simplest form this method of generating power requires apparatus consisting of steam boilers with their settings, pumps, steam-pipings, flues and stack, facilities for coal-storage, engines, foundations and beltings—demanding altogether a large amount of floor-space. The cost of an installation of such equipment has been found to be approximately fifty dollars per rated horse-power. Electric motors using Niagara power can be installed for less than thirty dollars per rated horse-power. In other words, the saving in power to the manufacturer is almost one half. On the other hand, a steam plant requires a considerable force of men to operate and maintain it, while electrical power cuts down this service two thirds.

Why manufacturers are flocking to Buffalo, and why the greatest manufacturing city in the world is bound to extend along the Niagara frontier, is graphically shown by the following figures comparing the cost of Buffalo power with that of other representative cities. Assuming the maximum power used to be one hundred horse-power, the number of working hours a day to be ten, and the "load factor," or average power actually used, to be seventy-five per cent. of the total one hundred, the cost per month in the cities named is about as follows:

Boston	$937.50
Philadelphia	839.25
New York	699.37
Chicago	629.43
Cleveland	559.50
Pittsburg	419.62
Buffalo	184.91
Niagara Falls	144.17

These figures show that the manufacturer on the Niagara frontier not only possesses the cheapest water-power in the country, but that his power costs him less than half as much as it costs his next nearest rival, the manufacturer at Pittsburg. While power costs his Boston competitor a hundred and fifty dollars per horse-power per year, the Buffalo manufacturer pays less than thirty dollars. Even without cheap trans-

portation rates, this item alone would give him an overwhelming advantage in the race for trade.

Destined to be one of the greatest if not the greatest manufacturing city on earth, Buffalo is also one of the most beautiful. To-day she possesses four hundred miles of asphalt pavement—more smooth pavement than is found in Paris, Washington or any other city. She is the greatest "home city" in America. Out of a population of more than four hundred thousand people, the home-owning population is only thirty thousand below the total registered vote. As a convention city she has only one rival, and that is Detroit. Nature has showered blessings upon her without stint. And I confidently believe that many of the young men and women of Buffalo will live to see the day when one city will stretch along the entire Niagara frontier, with a population exceeded by that of only one or at most two other American cities.

BEFORE THE DAWN

I LOOKED on beauteous forms, as I lay dreaming,
  But on no form as beautiful as thine,
Who here, amid the moonbeams white and holy,
  Standest in silence by this bed of mine.

I looked on faces fair, as I lay sleeping,
  But on no face that seemed as nobly sweet
As that which in the pallid light above me
  My wondering, half-awakened sense doth greet.

Who and what art thou? Have I kept thee waiting?
  My sleep was as a river deep and calm;
Bring'st thou perchance some word of import for me?
  Hast thou for broken hearts, like mine, some balm?

Who and what art thou? In my tranquil vision
  I gazed through rifted clouds on azure skies,—
I seemed to gaze beyond them,—but naught moved me
  Like the deep pity in thy brooding eyes.

Why art thou here to-night? I have been lonely—
  Have waited, prayed, for such an one as thou,
To still with presence kind my pulse's throbbing,
  To lay a cooling touch upon my brow.

Tell me thy name! Then, pain and fear forgotten,
  I straightway will arise and follow thee,
Who, as I think, art hither come to guide me
  To larger hope and opportunity.