#### THE AMERICAN REVIEW OF REVIEWS

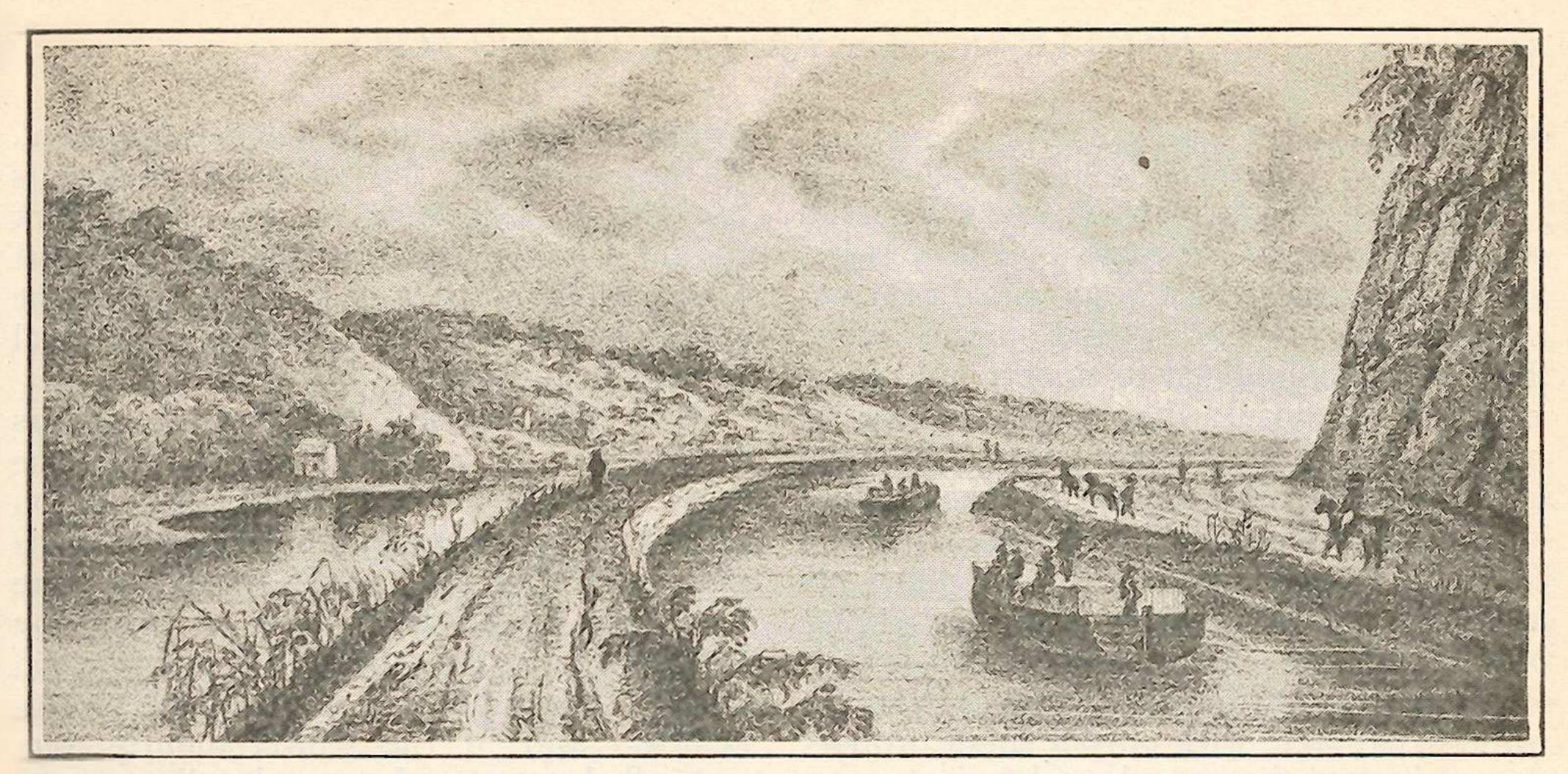
EDITED BY ALBERT SHAW

CONTENTS F	OR	JANUARY, 1923	
The Brazilian Exposition Frontisp	iece	Europe at the Turn of the Year	3.4
		By Frank H. Simonds	9.0
The Progress of the World-			-
Hope Deferred in a Dismal World	3	By WILLIAM HOWARD GARDINER	43
Mr. Simonds as an Interpreter The European Situation	3	The Opium Problem  By Elizabeth Washburne Wright	49
Why France Must Be Sustained Objects Not Vet Accomplished	4	"Listening In," Our New Pastime	52
We Have a Continuing Responsibility	5		
Our Impartial Attitude	5	New York's Canal System:	
Disasters in the Near East	0	I. A Century's Growth	53
The Tradition of Empire Not Yet Broken.	0	By William B. Shaw	
America Not Playing for Empire		With illustrations	
ference	-	II. The Improved Barge Canals	50
The French West Indies	8	By Henry W. Hill,	
American Views of the Future	8	IV ith illustrations	
Our Navy and the General Welfare	8	III. A Modern Canal Voyage from	
Our "Observers" at Lausanne	9	Lake Erie to the Hudson	61
Practical Value of Wise Politics	9	By Charles E. Ogden	
Pan-American Commerce	10	With illustrations	
Canada Our Best Business Partner.	10	The Motion Picture Industry	8.
We Will Profit by Europe's Recovery	1.1	By WILL H. HAYS	03
What Clemenceau Asked For	11	With Illustrations	
The Irish Free State Finally Established.	12		
Ulster and Creed Differences		Mr. Wilson's Records of the Peace Con-	
Race and Religion in Canada	14	ference	SI
Tolerance an American Principle	14	With portraits	
"Know-Nothingism," Old and New	14	The Reminiscences of Oscar S. Straus	34
A Sermon by Will Hays	1.5	With portrait	
Lynching an American Reproach	15	Leading Articles of the Month-	
Anti-Lynching Bill Defeated at Washington	10	Labor in the New British Parliament	06
A Successful Filibuster	16	Protecting American Export Trade	
Bootlegging Rampant	17	The New Columbus Play at Paris	88
Congress in Session Again.	17	A French Portrait of Clemenceau	80
"Atmospheric" Disturbances	17	Faith and Skepticism in Russia	00
Farming and Politics	18	"Miss Smith of Smyrna"	91
The President's Survey	18	Mussolini from a French Angle	93
Harding and His Official Family	1.0	Father Mendel and His Centenary	94
The Attorney-General Attacked	19	Making Wool Unattractive to Moths	95
The Ship Subsidy Bill	19	Light as a Factor in Agriculture	95
The President's Arguments	20	Where Was Robinson Crusoe's Island?  Spanish in American Schools and Colleges.	97
The Opposing Views.	20	Foreign Health Conditions that Threaten	98
Stormy Progress for the Bill Secretary Mellon's Tax Suggestions	21	America	00
Tax-Exempt Securities	21	Conserving Our Animal Life	100
A Constitutional Amendment Asked	22	The Importance of Physical Education.	102
Our Falling Tax Revenue	22	Fears for the Furs	103
Leaders of Dominion Affairs	23	Some Queer Natural History	104
Tariffs, Immigrants, Waterways	23	Are We Dancing on a Soap Bubble?	105
With portraits, cartoons, and other illustrations		Decline of Potato Products in Germany	100
Record of Current Events	24	News from Nature's World.  With portraits, cartoons, and other illustrations	107
Cartoons of the Month	28	The New Books	100
Investment Questions and Ans	wers.	Page 8, advertising section	70000

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A SCENE ON THE OLD ERIE CANAL-FROM AN EARLY ENGRAVING.

## NEW YORK'S CANAL SYSTEM

## I. A CENTURY'S GROWTH

BY WILLIAM B. SHAW

"Oh, a ditch he would dig from the lakes to the sea, The eighth of the world's matchless wonders to be. Good land! how absurd! But why should you grin? It will do to bury its mad author in."

WE do not know the name of the loyal Tammanyite or "Bucktail" who a century ago wrote these lines as a travesty on the "Grand Canal," then building, and its advocate, De Witt Clinton. The rhymester's verse may have been lame, but his sentiments, beyond question, were those of the Tammany Hall of his day. To characterize Clinton as a harebrained visionary and his project as the very climax of madness was at that time to treat him with rather more than the customary courtesy. Yet the whirligig of time, besides bringing revenges, sometimes vindicates a reputation with astonishing celerity. Within six years from the date of the Tammany poet's outburst, the "ditch" had actually been dug, all the way from Lake Erie to tidewater, and had been hailed by not a few as the world's eighth wonder, while the man who had brought the venture thus far toward fruition was acclaimed as a benefactor.

## Ditch-Digging Extraordinary!

In only one respect did the doggerel of 1819 correctly forecast the achievement of

1825. The excavation from Buffalo to the Hudson was in the strict sense of the word a "ditch"-four feet deep and twentyeight feet wide on the bottom. Only in its length, which was 350 miles, did it approach the dignity of a real canal, estimated by modern standards. It has remained to this day the longest artificial waterway in the world, with the exception of China's Grand Canal (13th century). To dig a ditch, even of that moderate size, through forest and marsh for 350 miles was no mean task. To estimate the job in terms of steam shovels and other modern excavating machinery is one thing; to think of it as accomplished by man-power with pick and shovel, scraper, plow and ax, is to visualize a very different problem. The original Erie in the early 19th Century was as big a feat as Panama in the early 20th.

Lake Erie is 500 feet higher than the Hudson River at Albany. Locks had to be built at intervals for changes of level. For a great part of the distance between the Lake and the River there are natural watercourses. It was at one time proposed to utilize these, as in fact has been done in our own day for the Barge Canal. But the engineering practice of those times was

against such procedure.

## The Greatest Public Work of its Day

The work of construction was allotted in section contracts. Strange as it may seem, there were times when responsible contractors were hardly to be found on any terms. The State was obliged to start a fund from which loans could be made to worthy but impecunious contractors for the purchase of tools and supplies. On the original canal, which soon came to be known as the Erie, the State expended for all purposes connected with construction something over \$7,000,000—a stupendous sum indeed for a commonwealth just emerging from the wilderness stage, with only a small proportion of its area improved, and facing many of the problems of frontier development which a later generation was to meet and solve in the great West. No other State, east or west, has succeeded in a public work of like magnitude. What we know to-day as the Empire State was then only four decades removed from the Revolution.

At the outset there was little that gave promise of success. The engineers were men who knew the country and the conditions under which their task had to be worked out. Beyond that, their technical knowledge did not extend very far. They knew little of the great engineering triumphs of their time. Yet James Geddes, Benjamin Wright and their colleagues achieved a result that won the praise of the European masters of their profession. The work that they did contributed powerfully to the growth of inland commerce. The opening of "Clinton's Ditch" in 1825 is recognized to this day as the greatest event in the commercial history of New York City. It built up a metropolis where there had been a port and trading center of uncertain future. It took from Philadelphia the prestige of America's commercial capital.

## The Old Erie More than Paid its Way

An "artery of commerce," holding only four feet of water at the maximum depth, seems insignificant indeed when judged by modern standards. Yet the traffic that it supported from the first was relatively large. A writer of that day noted that the canal tonnage early exceeded that of all foreign and domestic shipping entering and departing from the port of New York. When the canal was opened there was not a mile of railroad in the State of New York. It was twenty years before railroad freight

competition began to be felt by the canal. As late as 1846 the value of shipments brought to tidewater on the New York canals was greater than the whole export trade of the State, and more than half the combined trade of the principal commercial States of the Union.

After the railroads had become carriers of freight on a considerable scale the State saw to it that their competition should not harm the canal. Those railroads that paralleled the State's waterway were forbidden by the Legislature to carry any freight at all in the season of canal operation (about seven months—from April to November) and in the winter months were compelled to pay the canal tolls. Those tolls, levied on canal boats during the season of navigation, had become an important element of the State's income before the railroads had entered the field. Beginning at about \$500,000 a year the receipts from this source had grown to \$3,500,000, and the canal had actually paid for itself within the first ten years.

Hardly had through navigation begun, when a loud demand for enlargement arose. The diminutive boats, of three and one-half feet draught, towed by horses and mules, and carrying at the best not more than sixty tons of merchandise, were often compelled by low water to reduce their load to thirty tons. In a few years the canal was deepened and widened, but it was not until 1862 that the locks had been altered so that a boat of six feet draft, 98 feet long, 171/2 feet wide and of 240 tons burden could pass. These and later enlargements were far more costly than the original canal, but the traffic seemed to justify them and they were eventually paid for out of the tolls.

Of the system of branch or lateral canals built to connect with the old Erie, only three remained in service when work on the new barge system was begun. These were the Champlain, the Oswego, and the Cayuga and Seneca. All these, enlarged, are now barge canals and are described in Senator Hill's article, which follows.

After the Erie Canal had been in operation for about a year Martin Van Buren, speaking in the United States Senate, pointed out that the canals of New York, though built and paid for by the State, were of national use. This, of course, was true, but in the earlier years most of the "through" as well as "way" traffic originated within the State's borders. In 1846

way traffic was twice the value of through traffic.

The persistent and long-continued supremacy of the Erie Canal as a freight carrier is shown by the fact that as late as 1874 it boasted a greater tonnage than either the New York Central or the Erie Railway.

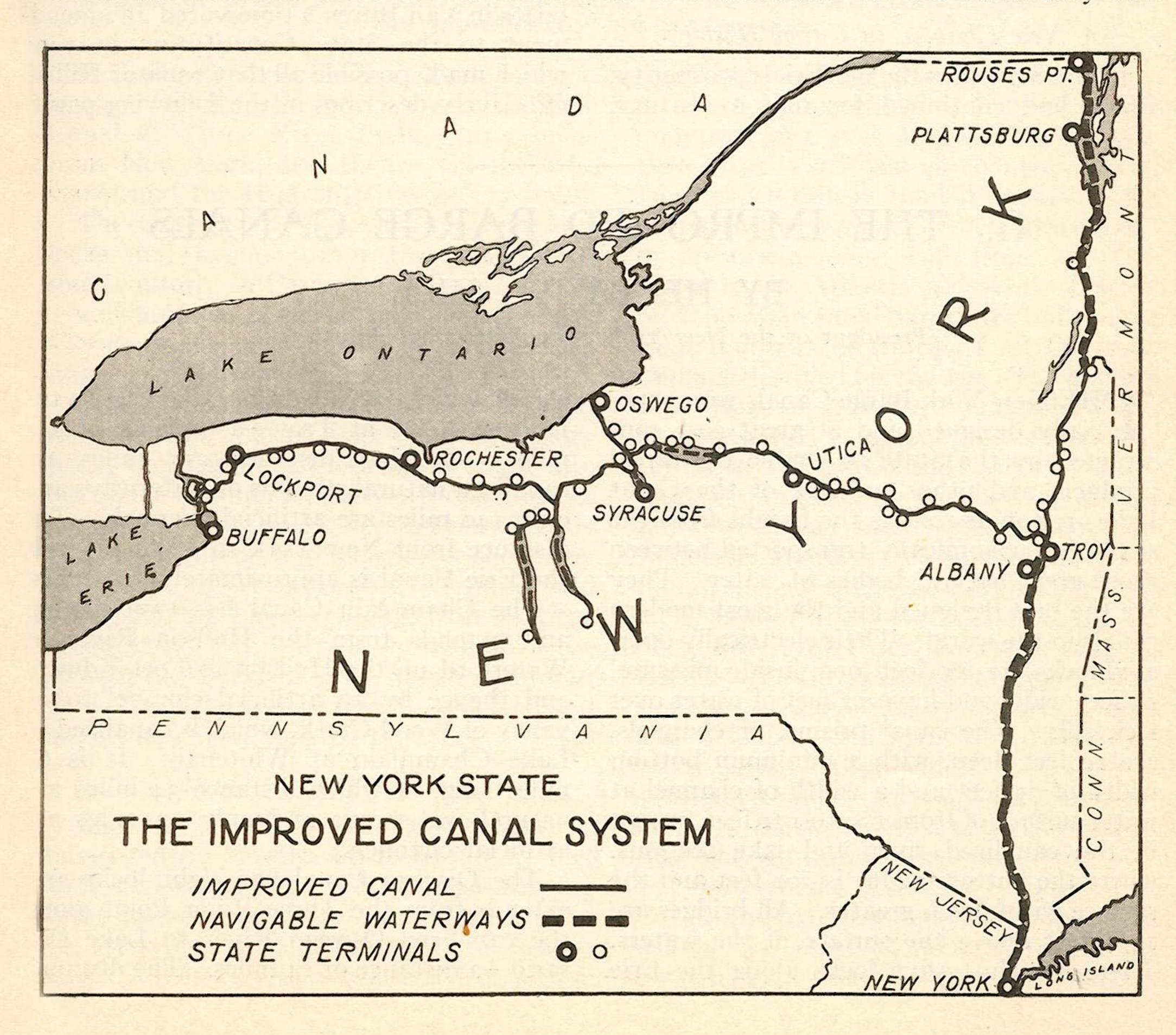
## Always "in Politics"

The New York canal system is one conspicuous instance of a public work conceived by politicians and conducted for a long period to the advantage of the general public. Low canal freights served to build up the interior counties, such cities as Syracuse and Rochester, and at the same time to make New York City the terminus of a vast traffic movement from West to East. Communities and individuals were really benefited by the waterway, not to mention the great number of citizens who profited from construction and repair contracts and in various indirect ways.

What the railroads were in the settle-

ment and growth of the Mississippi Valley in the latter half of the nineteenth century, the canal had been in the development of New York during the first half of that century. Because of its relation to the State itself the canal could make men both powerful and rich. It actually made and unmade many a political career. De Witt Clinton himself rose from seeming defeat on the crest of the canal issue. He lived to see his dream in a fair way toward realization and his memory is kept alive to-day because of the part he played in committing the State to a canal policy.

Half a century later another career grew into national proportions from the environment of New York Canal politics. Contractors had waxed fat from canal enlargements and repairs. Their unholy alliance with politicians in and out of office had become known as the "Canal Ring." Samuel J. Tilden was elected Governor with a mandate to turn the rascals out, and so effectively did he perform the task that he was nominated for the Presidency and



received a plurality of the popular vote. It was chiefly his reputation as a canal reformer that gave him political prestige and advancement.

## Passenger Travel

We of the hurrying present may well retain a memory of the Erie's romantic past the packet-boats making their "speed" spurts of six miles an hour, but much of the time keeping to a schedule that was leisurely enough to let the passengers walk on the tow-path ahead of the horses! Then there were the families and colonies that began by the canal route the long journey to the States and Territories of the West. Herbert Quick, in "Vandemark's Folly," has given a vivid picture of life on the canal in the Forties and Fifties. The popular story, "David Harum," a quarter of a century ago, told us something of the canal magnates of central New York. Travelers, from 1830 to the Civil War, found much that was interesting and agreeable in the canal voyage, despite the "low bridges."

## A New Chapter in Canal History

In the Seventies the old Erie's prosperity, which had continued for half a century,

showed signs of decline. Tolls were reduced, and in 1883 abolished, but even that heroic measure did not avail. It soon became evident that the peak of canal impor-s tance as a traffic route had been reached andpassed. It is not necessary to discuss the reasons for this fact. Economic tendencies and influences were growing steadily against the canals and in favor of the railroads. The thing to be noted in this connection is that even in its days of crisis the canal did not lose its hold on the imagination of New Yorkers. The teachings of Clinton and the other promoters of the canal idea had been passed on from father to son. The canal as a State institution had become so vital a part of the New Yorker's conception of the body politic that abandonment was not to be thought of. By 1903 the people had been educated to a far grander waterways project than had ever claimed a place in Clinton's dreams—a twelve-foot channel, accommodating thousand-ton barges propelled by steam. The sons and grandsons of men who rode on the horse-drawn packetboats in Van Buren's time voted an amendment to the State Constitution in 1903 which made possible all that Senator Hill so effectively describes in the following pages.

## II. THE IMPROVED BARGE CANALS

## BY HENRY W. HILL

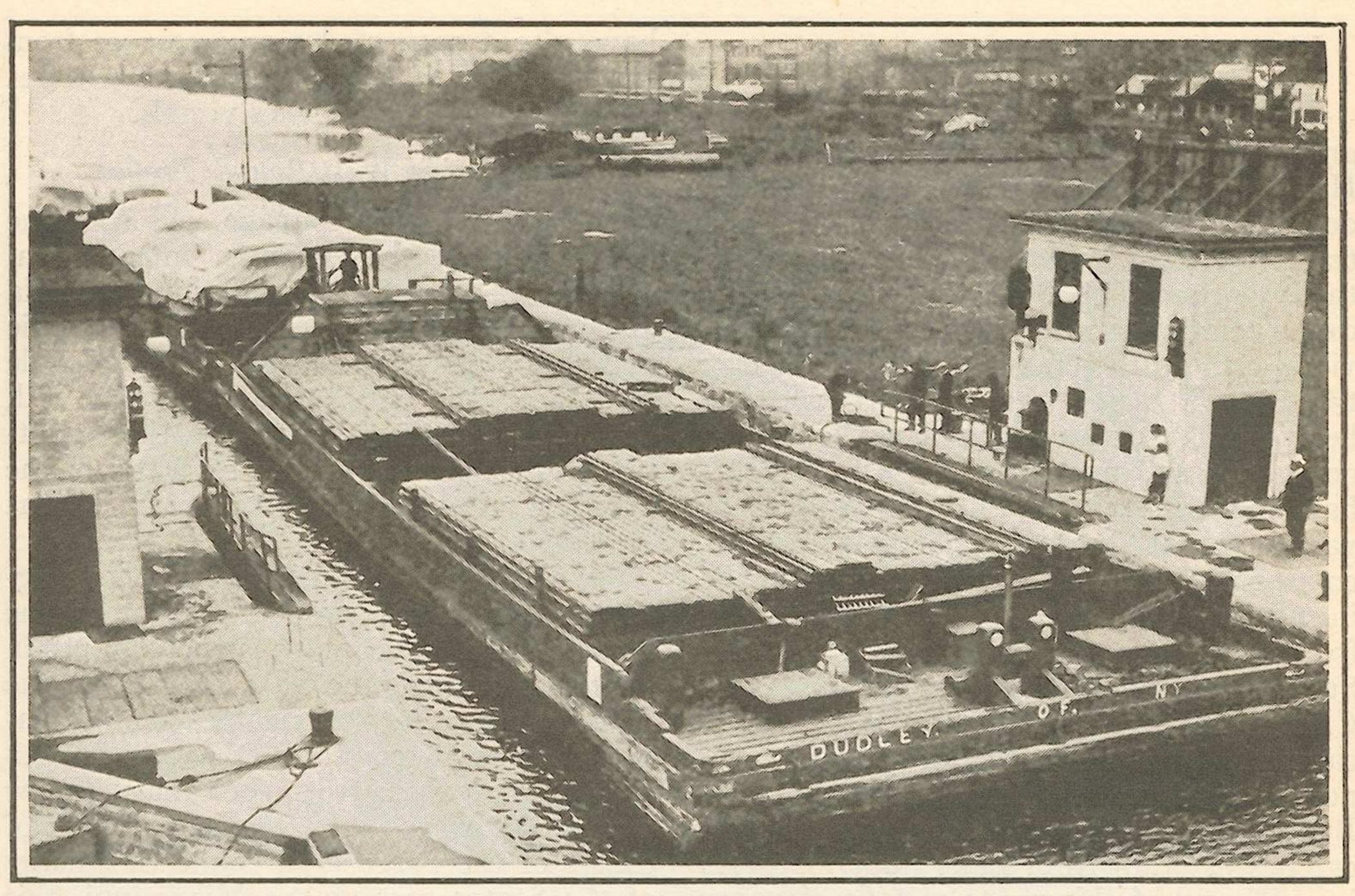
(President of the New York State Waterways Association)

HE New York Barge Canals were espe-L cially designed and at great cost constructed by the State to enable the cereal products and other tonnage of the Great Lakes region as well as the freight from the sea to be economically transported between those great natural bodies of water. They are the best designed and the most modern canals in the world. Their electrically operated locks are 300 feet long, inside measure, 45 feet wide, and have 12 feet of water over lock sills. The canal prisms, or channels, are 12 feet deep, with a minimum bottom width of 75 feet and a width of channel at water surface of from 123 to 171 feet, except in the canalized river and lake sections, where the bottom width is 200 feet and the surface width even greater. All bridges are 15½ feet above the surface of the waters. There are thirty-five locks along the Erie

Canal, which extends from Lake Erie to the Hudson River at Troy—a distance of 355 miles. Of that distance 215 miles are canalized natural streams or waterways and only 140 miles are artificial channels. The distance from New York to Lake Erie via the Erie Canal is approximately 500 miles.

The Champlain Canal has twelve locks and extends from the Hudson River at Waterford up the Hudson to Fort Edward and thence by an artificial channel to the valley of Wood Creek, which is canalized to Lake Champlain at Whitehall. It is 64 miles long, of which distance 34 miles are natural waterways and only 27 miles are artificial channels.

The Oswego Canal has eight locks and extends from the Three River Point along the canalized Oswego River to Lake Ontario—a distance of 24 miles. The distance



A LOAD OF STEEL RAILS AND AUTOMOBILES, IN THE LOCK AT AMSTERDAM, N. Y., ON ITS JOURNEY TO THE METROPOLIS

from Lake Ontario to New York via the Oswego Canal to its junction with the Erie Canal at Three River Point, 314.7 miles from New York, and thence via the Erie Canal and the Hudson River is 337 miles.

The Cayuga and Seneca Canal has four locks and extends from the Erie Canal southwesterly to Cayuga and Seneca Lakes—a distance of 24 miles, and opens up both Cayuga Lake, 38 miles long, and Seneca Lake, 35 miles long, to barge navigation.

The lock chambers and prisms are uniform in size. Lakes Erie, Ontario, Champlain, Cayuga and Seneca are brought into navigable communication with one another and with the Hudson River and the Atlantic Ocean by these barge canals, as shown by the map of their routes, termini and terminals on page 55. The illustrations accompanying this article show some of the structures, including locks, dams, terminals, etc. The locks are electrically operated and are of the most approved type.

## Large Cargo Capacity

The New York Barge Canals may be navigated by vessels 300 feet long, 42 feet wide, and of 100 feet draft, having a carrying cargo capacity of 2800 tons, or one-fifth of the carrying cargo capacity of the largest Great Lakes vessels, so that a fleet of five

canal barges will take on the entire cargo of a Great Lakes vessel of 14,000 tons capacity and transport such cargo from the Great Lakes to the seacoast as economically and more expeditiously than it could be transported in the original Great Lakes vessel, or in an ocean-going ship from the Great Lakes to the Atlantic seaboard. This may be done when canal barges are built in sufficient numbers to transport all the ex-lake tonnage destined for the sea. The abnormal canal rates of 1922 were due entirely to an unprecedented volume of grain shipped down the Great Lakes to Buffalo and also to Montreal, and to the latter port both by boat and rail. As soon as canal barges can be built in sufficient numbers to handle the ex-lake tonnage, canal rates will fall to their proper level, as they always have done in the past. Such water rates are not artificially regulated by the Interstate Commerce Commission, but are governed by the law of supply and demand. If there be a demand for water carriers, they will be forthcoming in sufficient numbers to keep the canal rates down to the water level of freight rates, so that the all-water route down the Great Lakes, over the Erie and Oswego Barge Canals and over the ocean to European ports will be the most economical freight-route for American products to foreign markets.

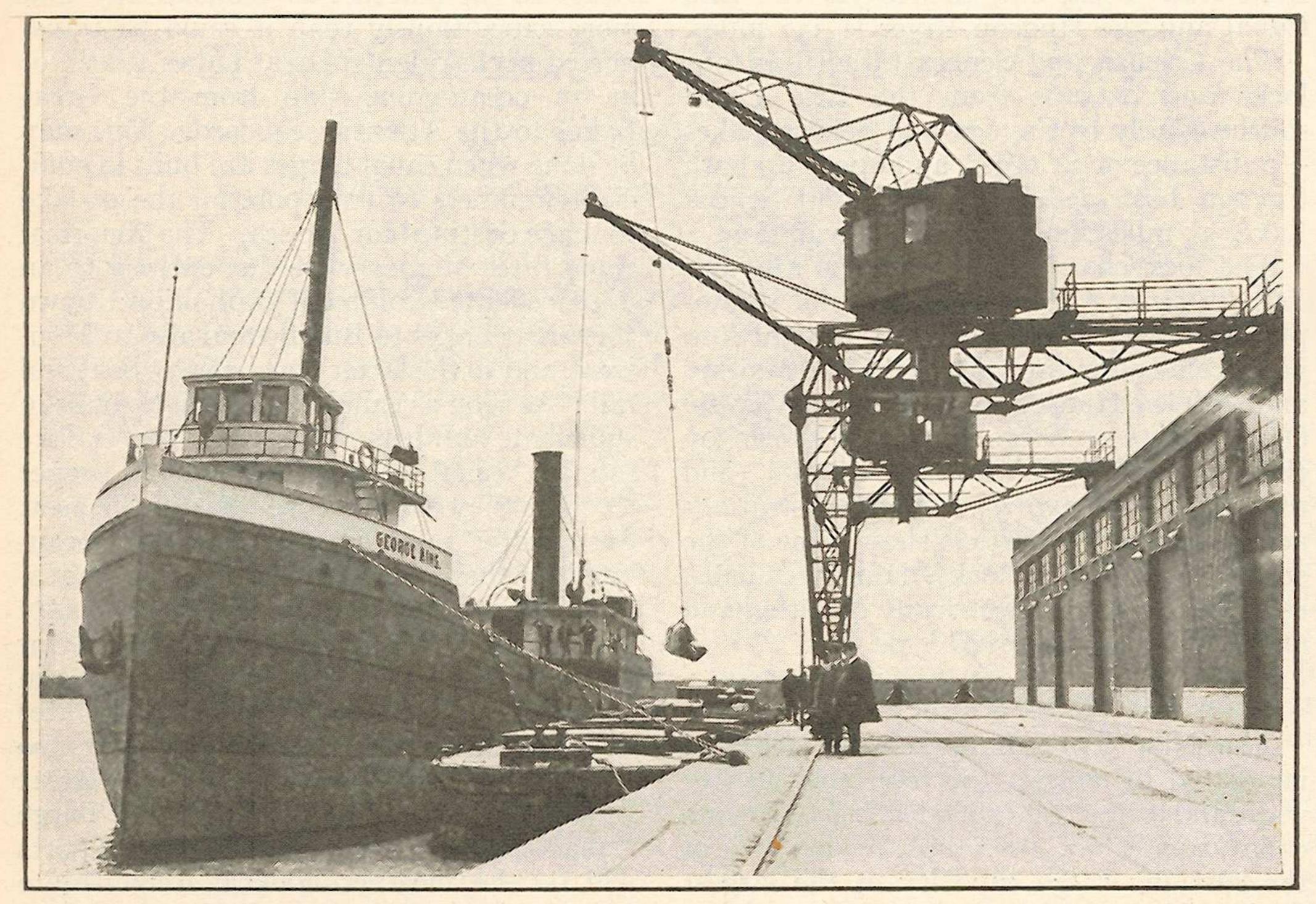
## Improved Terminal Facilities

The State of New York has built a large grain elevator at Gowanus Bay in New York Harbor and is building another at Oswego on Lake Ontario, which will facilitate the transit of grain in large quantities through those ports. The State is equipping its canal terminals with modern loading devices and with cranes, electric battery tractors, and lifting magnets for transferring heavy, bulky cargoes from canal barges to ocean vessels, and vice versa. Freighthandling appliances have been installed at various canal terminals. Canal traffic is continually increasing as a result of the installation of these improvements in freight-handling facilities made by the Superintendent of Public Works, Hon. Charles L. Cadle. During the season of canal navigation of 1922 there were transported millions of bushels of grain from Buffalo to New York. Canal barges with cargoes of grain from Lake Superior ports in 1921 and of shipments of tons of paper from Thorold, Canada, in 1922 passed from the ports of origin down the Great Lakes through the New York canals to the port of New York without breaking bulk at either Buffalo or Oswego. Canal barges have also transported many cargoes from the seaboard to upper-lake ports without reshipment on Great Lakes vessels.

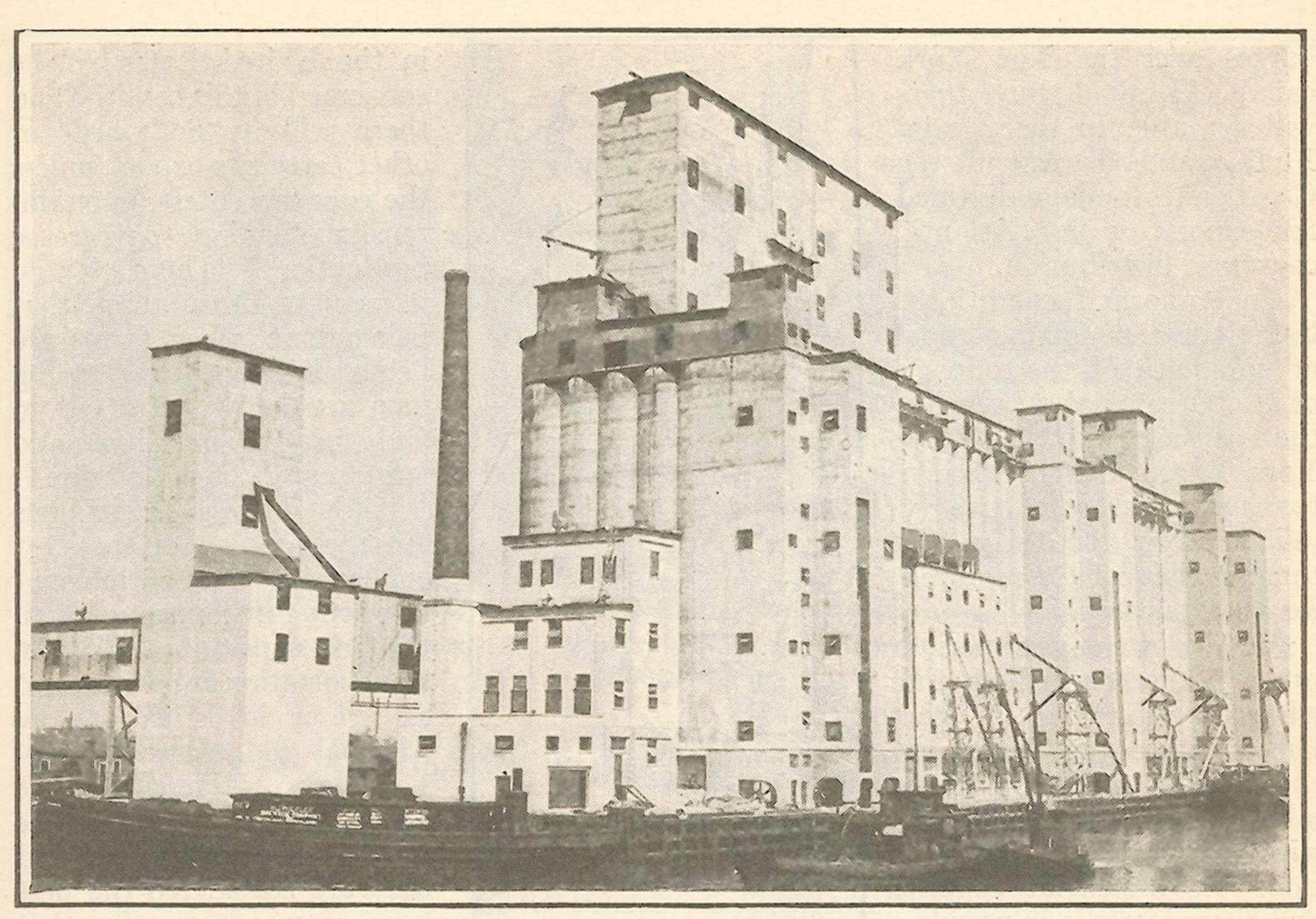
## Increasing West-Bound Traffic

Such west-bound tonnage will continue to increase as the Atlantic, intra-coastal waterways, extending from Maine to Florida and far up into the interior of the Atlantic and Gulf States, are brought into navigable communication with one another and with the Barge Canals of New York, thus effecting through transportation by water of the products of the Gulf, Atlantic and Great Lakes States.

Such tonnage will be still further augmented when the proposed canal of the Barge Canal type is constructed and in operation between the Ohio River and Lake Erie, bringing into navigable communication the commerce of the Ohio and Mississippi River systems with the canals of New York. With such an extensive network of canals of the barge type connecting many of the States east of the Mississippi, this country will be able to handle economically its water-borne tonnage as expeditiously as France and Germany transported their products of mines, factories and fields over their networks of intercommunicating water-



TRANSFERRING SUGAR AT BUFFALO FROM BARGES TO LAKE STEAMER



THE GRAIN ELEVATOR BUILT BY THE STATE OF NEW YORK AT THE GOWANUS BAY TERMINAL OF THE BARGE CANAL, ON THE BROOKLYN SECTION OF THE NEW YORK CITY WATERFRONT (Another large grain elevator is being erected by the State on Lake Ontario. Western grain destined for export will thus go by Lake steamer to Oswego, thence via the barge canal to the Port of New York.)

ways before the World War. The New York Barge Canals were the first of the great system which promises now to be an important part of the American barge canal system, affording navigable communication between most of the States east of the Mississippi River and along its banks.

## Transportation of Wheat

The New York canals are capacious enough to admit of the transportation through them of all the grains and other products, either natural or manufactured, originating in the Great Lakes territory, that now are or ever will be shipped to the sea either for export or for coastwise distribution. These great waterways from the Great Lakes to the Atlantic Ocean are free highways open for the use of the Western farmers and manufacturers, who have paid nothing towards their cost and pay nothing for their maintenance. The State of New York has borne the entire cost of their construction, which amounts to date to \$167,-123,774, and it also bears the annual expense of their maintenance and operation of upwards of a million dollars. Furthermore, the district comprising the Port of

New York is expending \$500,000,000 on its port development for the transit of outgoing, incoming and domestic commerce. Buffalo has already expended millions of dollars in elevators and other port facilities. Troy and Albany will become ocean ports as soon as the projected deepening of the Hudson River to Troy is completed, so that canal barges may there meet oceangoing vessels.

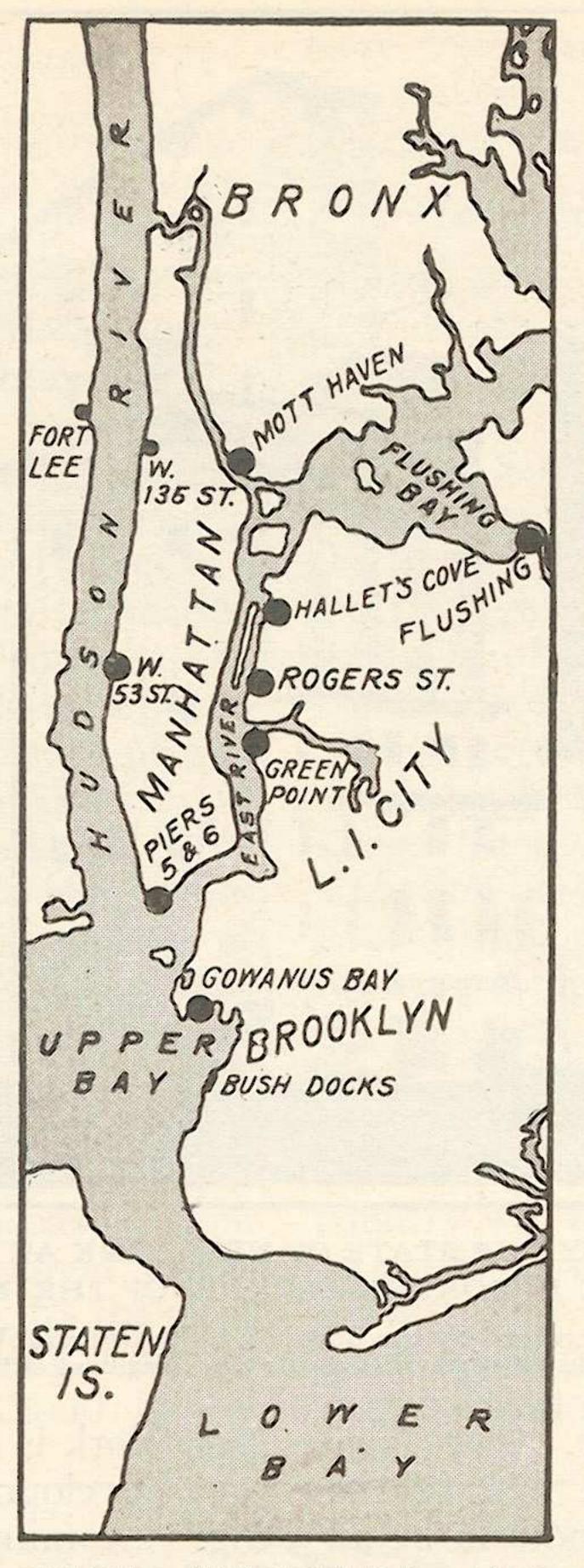
The average cost of transportation for the period 1910-1915 per bushel of wheat from the Great Lakes via lake, canal and ocean the all-water route—through New York to Liverpool, was 10.73 cents which included the incidental terminal charges. gross rate of 10.73 cents per bushel included elevator, storage, insurance, transportation and all other charges. It is believed that the recent transportation charges from Buffalo to New York will be materially reduced when the New York Barge Canals are fully equipped with fleets of vessels to their maximum capacity, and that capacity is adequate to carry all the present tonnage of the Great Lakes destined for export.

A dozen or more transportation companies have been formed to operate their

barges over the New York canals. Undoubtedly others will be able to carry from Buffalo and Oswego all the Great Lakes tonnage, destined for export or for Atlantic coastwise distribution.

Under normal conditions, less than ten million tons, or one-tenth of the tonnage of the Great Lakes, reaches the seacoast, and the New York Barge Canals have a tonnage capacity of twenty million tons, or twice the tonnage that will be required for that purpose.

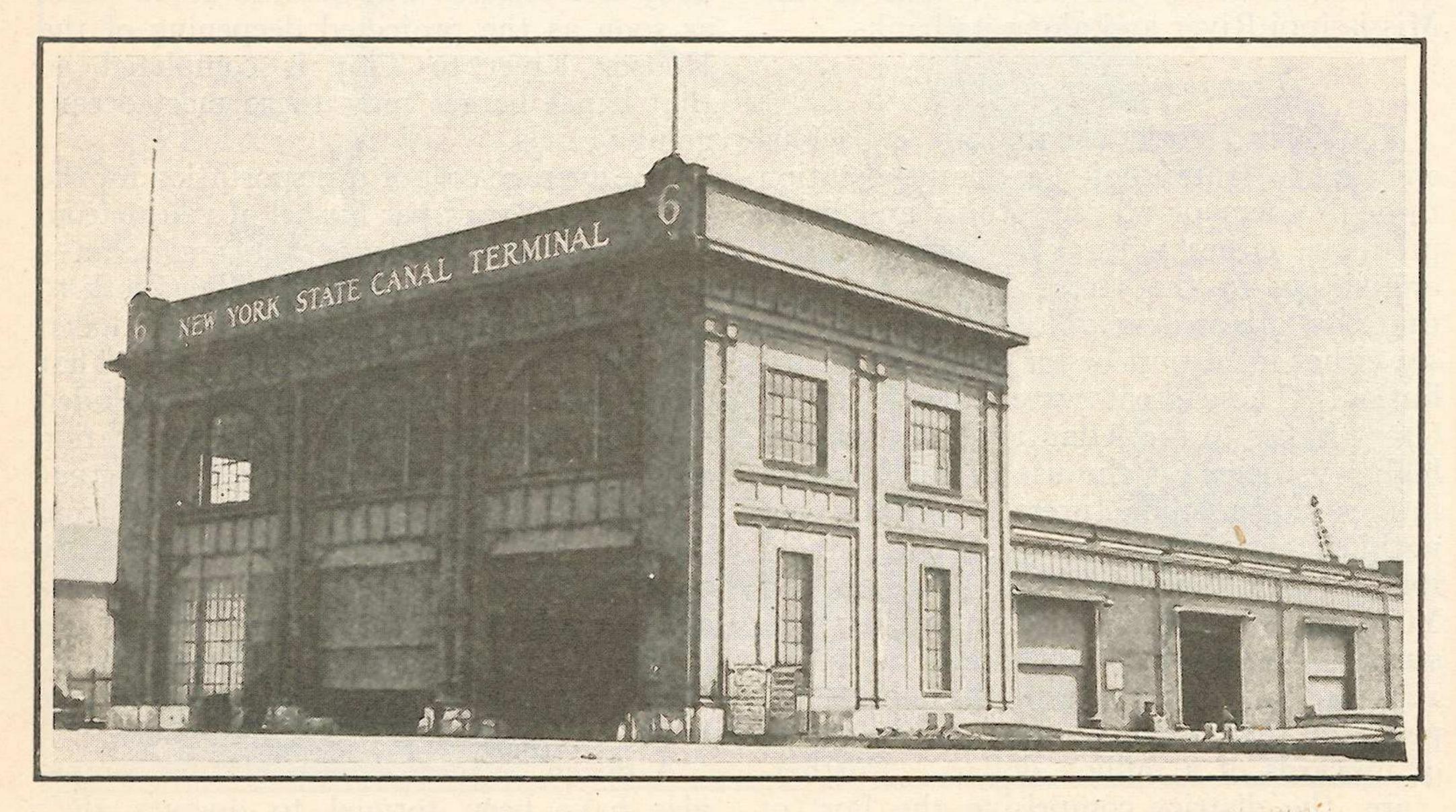
For the fifteen-year period prior to the World War, the wheat production in the United States, as shown by the report of the Tariff Commission, did not keep pace with the increase in population. As industrial centers and cities increase in population, thereby greatly increasing domestic consumption of wheat and other cereals, while the lands producing those grains are becoming more exhausted, the time will come (and Mr. Hoover said in ten years) when all the wheat and other cereals produced



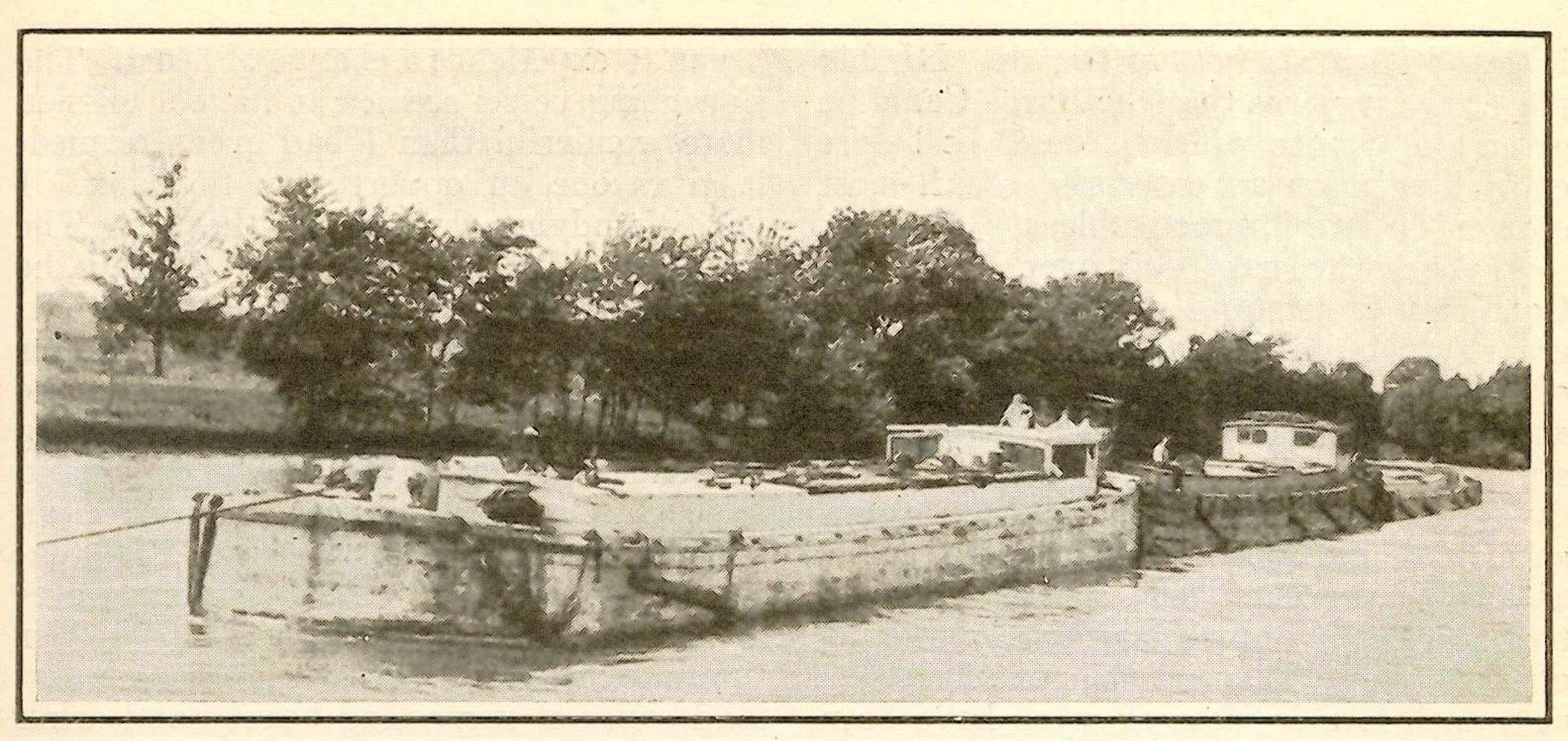
CANAL TERMINALS AND PIERS ALONG THE WATER FRONT OF NEW YORK CITY

in the United States will be consumed in this country and there will be no wheat or other cereals to export, unless the country enters upon intensive farming to increase production. There is no immediate prospect of that being done, when farms are being abandoned and young men are being attracted to and locating in cities and large centers of population.

The New York Barge Canals are the product of the best engineering talent of the country, acting in connection with the most expert authorities on transportation by water, and after long investigations by national and State commissions as to the most feasible water route between the Great Lakes and the sea, and they are considered the best type of waterways for that purpose. When the equipment is completed, as it soon will be, and they are in operation to their full capacity, they may transport annually twenty million tons of freight as economically and more expeditiously than any other waterways in America.



ENTRANCE TO THE BARGE CANAL TERMINAL IN LOWER MANHATTAN, NEW YORK CITY



A TYPICAL FLEET OF BOATS ON THE NEW YORK BARGE CANAL, LOADED WITH NITRATE OF SODA

# III. A MODERN CANAL VOYAGE FROM LAKE ERIE TO THE HUDSON

## BY CHARLES E. OGDEN

ABOUT twenty years ago the people of the State of New York decided by referendum in favor of building the present Barge Canal. There was then a respectable minority which believed a ship canal, capable of floating ocean-going vessels, would be the better solution of the State's water transportation problem. The majority vote followed the report of a commission appointed by Governor Roosevelt to examine the whole situation, and this body of experts strongly favored the barge idea. Their report held that it would be cheaper, quicker, and more practical to transfer cargoes at New York and Buffalo than to run an ocean vessel through five hundred miles of restricted waterways into lakes which had few or no harbor provisions for docking salt-water ships.

Recently, the advocates of a ship canal have accepted another route via the St. Lawrence River, by which they allege ocean vessels may reach the Great Lakes and moor at their principal ports. The enterprise was to be international, with the United States and Canada joining hands in the undertaking. Canada seemed willing, and several of our western States were convinced they could send their grain and raw materials to the old world and receive richly laden cargoes in return. These forces joined

heartily in the spread of the St. Lawrence propaganda.

In the meantime, the Governor of the State of New York, to use his own expression, had been "sold to the Barge Canal." He had made a trip of inspection through its waters, and had been deeply impressed with its possibilities. "It is wonderful," he declared, "and it should be better known." He started in to do his share toward giving it publicity, and his activity soon brought him into contact with the proponents of the deeper St. Lawrence proposition. He did not falter, but went on with his program for the Barge Canal. Unwittingly, he did a big job of advertising for it by bringing it to the front as a part of a debate which involved the whole national waterways problem. Governor Miller went to Washington, where the St. Lawrence bill was before Congress, and argued against it, having as his chief opponent the eloquent Governor Allen, of Kansas. Then the battleground was transferred to the Middle West, and, oddly enough, the New York Governor made more friends than enemies there. The Westerners gave him credit for the honesty and courage of his convictions. His final dictum was: "If the State of New York can be shown that the St. Lawrence route will do what its proponents claim, we will favor

it"; and it won a host of friends. His big plea, however, was that the Barge Canal be given the chance which it deserves before embarking upon an enterprise which most seamen declare impracticable.

Anyone who has been over the Barge Canal can understand the New York Governor's enthusiasm, and his championship of its merits. I had the pleasure of making such a trip from Buffalo to Albany on a scow fitted for habitation, which was towed by a tug. It proved a fascinating experience. One naturally thinks of canal travel as a slow process. The steam road, the trolley and the automobile, to say nothing of the airplane, have set the pace for swiftness until former ideas of speed have been eliminated. The dignified "chug-chug" of the tug's engine and the smooth riding motion of the barge have nothing in common with the rumbling traffic of the highways and the pavements.

As one comes under the influence of the gliding movement of the canal craft, he wonders why the outside world cares to move so fast. On the canal, as one becomes accustomed to its calmness and beauty, the thought of speed gives place to a sense of serene delight, found in many wonderful

landscapes and the simple life.

When I boarded the boat at Buffalo I wondered if a tedious and tiresome trip were before me. From the land I had viewed tugs and barges moving over the waters of the canal, and had rather pitied the boatman his life of apparently secluded and exclusive dreariness. After a few hours I

began to experience a change of heart. The slow-going vessel seemed to have a mission more wonderful than I had ever dreamed; it gives one an opportunity to think. I fell to studying the crew of the tug. The captain has his responsibilities. Plainly, he is trained to manage his craft at every turn; and if he has a fleet in tow he must gather the barges together in the locks, much as the mother hen gathers her brood of young chickens under her wings. The deck-hand is busy in his efforts to keep the decks clean and lines ready for instant use. The engineer and fireman toil with murky faces and grimy hands. But they all have their times of elegant leisure, when they gaze on landscapes of surpassing beauty and drink in quiet pastoral scenes which remind one of Thoreau or John Burroughs.

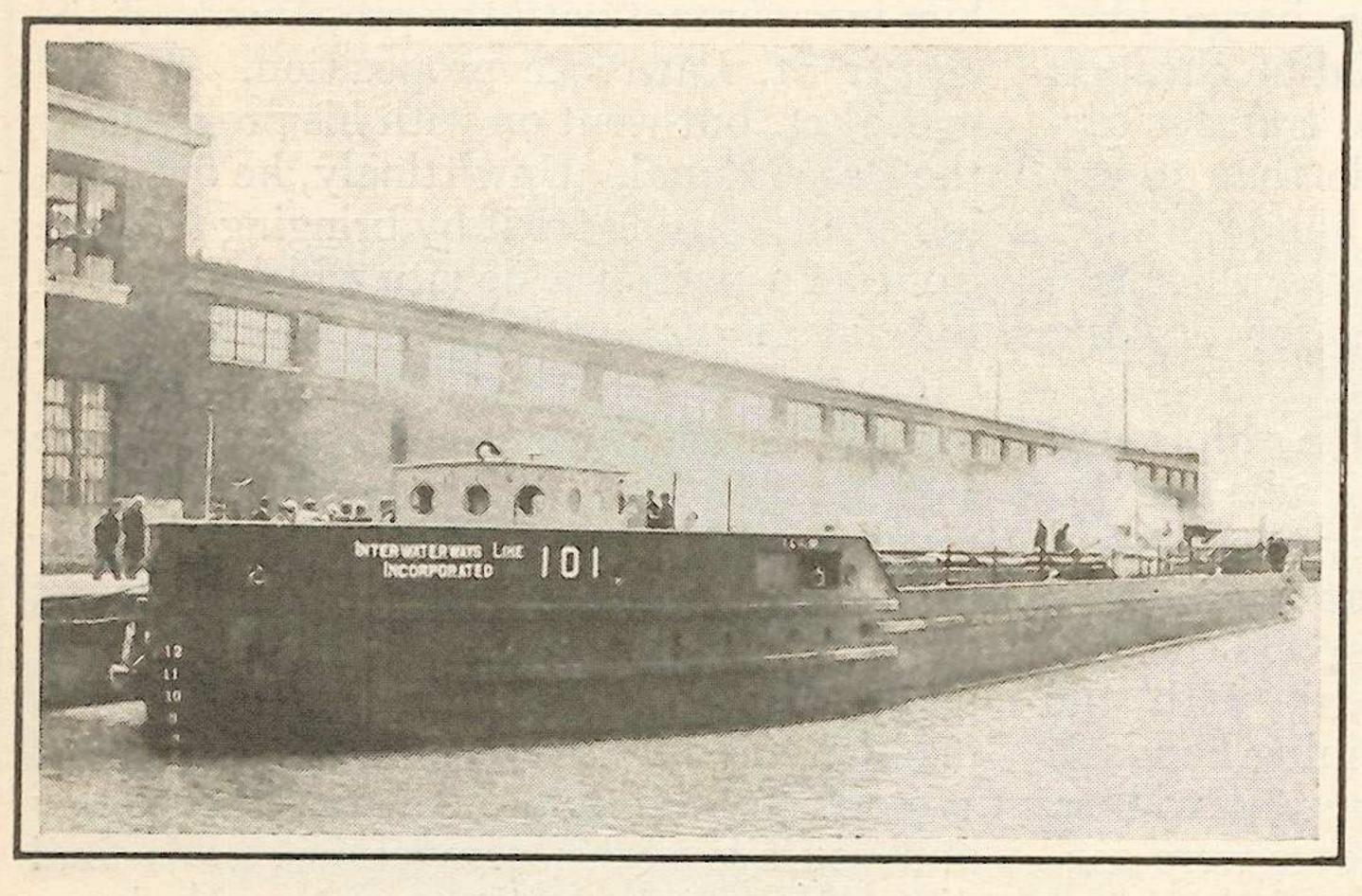
I wondered many times what these men were thinking about, and, when I essayed to talk to them, found their minds at ease, and their devotion to the canal unwavering.

"Once a boatman always a boatman," is a proverbial saying on the canal. It is applied to other callings, of course, but not always with so much absolute truth. Passing the Wayne County Almshouse, for instance, which is quite a pretentious structure, the captain remarked, in a jocular way, "There is my future home," and there was a twinkle in his eye, but his face took on a different expression as he added, "I could sit out and see the boats go by."

At dinner time the deck-hand and fireman appeared radiant from the generous use of soap. I asked the deck-hand how he

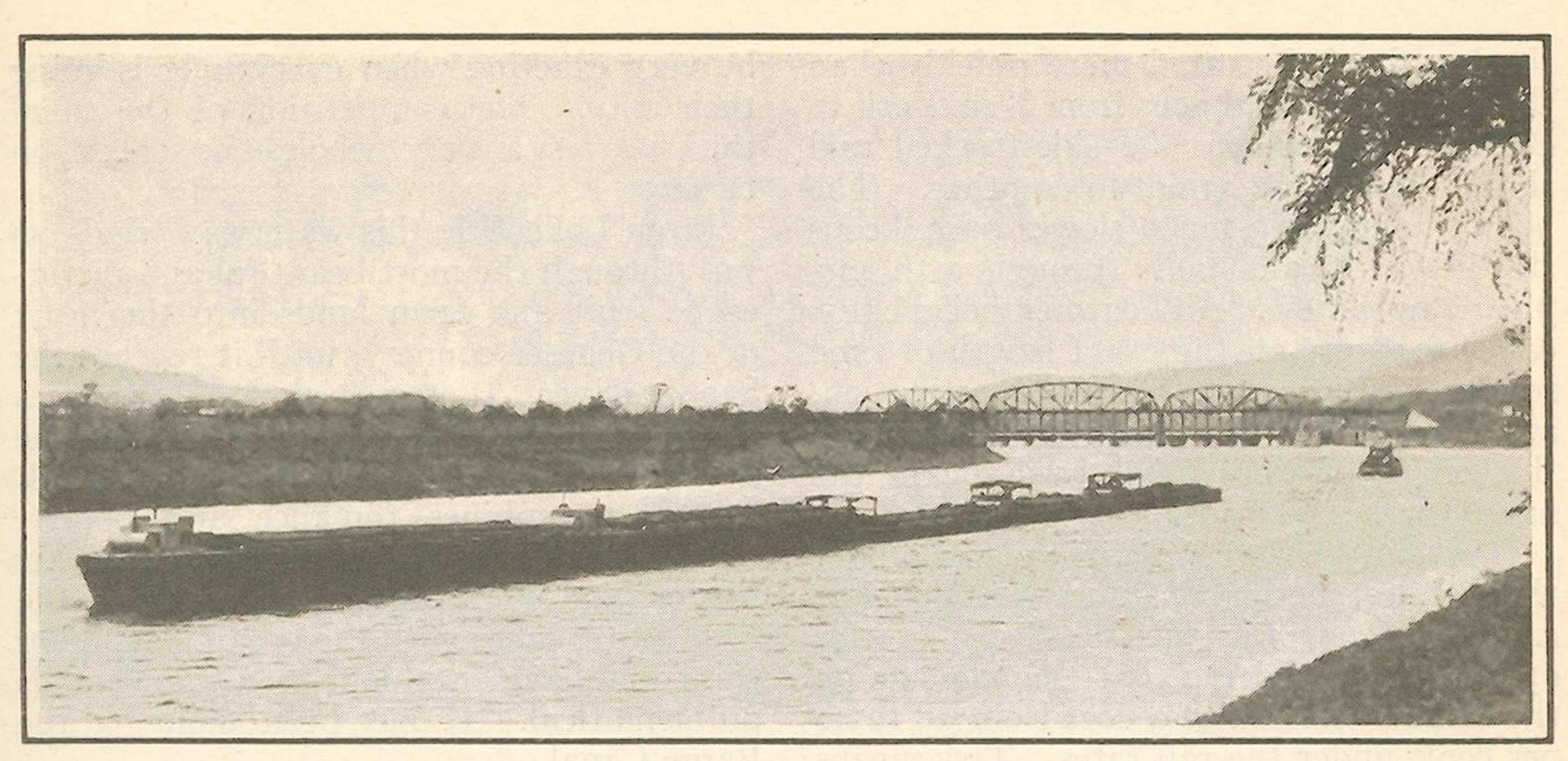
liked life on the canal. "First rate," he said; "plenty to eat, lots of sleep and fresh air, and a reasonable amount of work. Nothing better in the summer." And I was surprised, in the course of our conversation, to discover that he is a second-year student in Syracuse University, preparing for the law. He was making his next year's tuition on the canal.

Nothing could be finer than the good-natured railery of the engineer. He believes he has a mission in life in keeping his engine in first-class condition, although he expressed some



A MOTORSHIP AT THE BUFFALO TERMINAL, CARRYING 83,000 BUSHELS OF OATS

This canal boat is 242 feet in length and 36 feet wide



A POWER-BOAT AND ITS FLEET APPROACHING A LOCK NEAR SCHENECTADY, IN THE CANALIZED MOHAWK RIVER

dissatisfaction about his equipment. "I like canaling," he declared, as we were slowing into a lock. "We have lots of fresh air and plenty of appetite. You don't have to fret yourself to death, and as long as the old engine is acting right I am content."

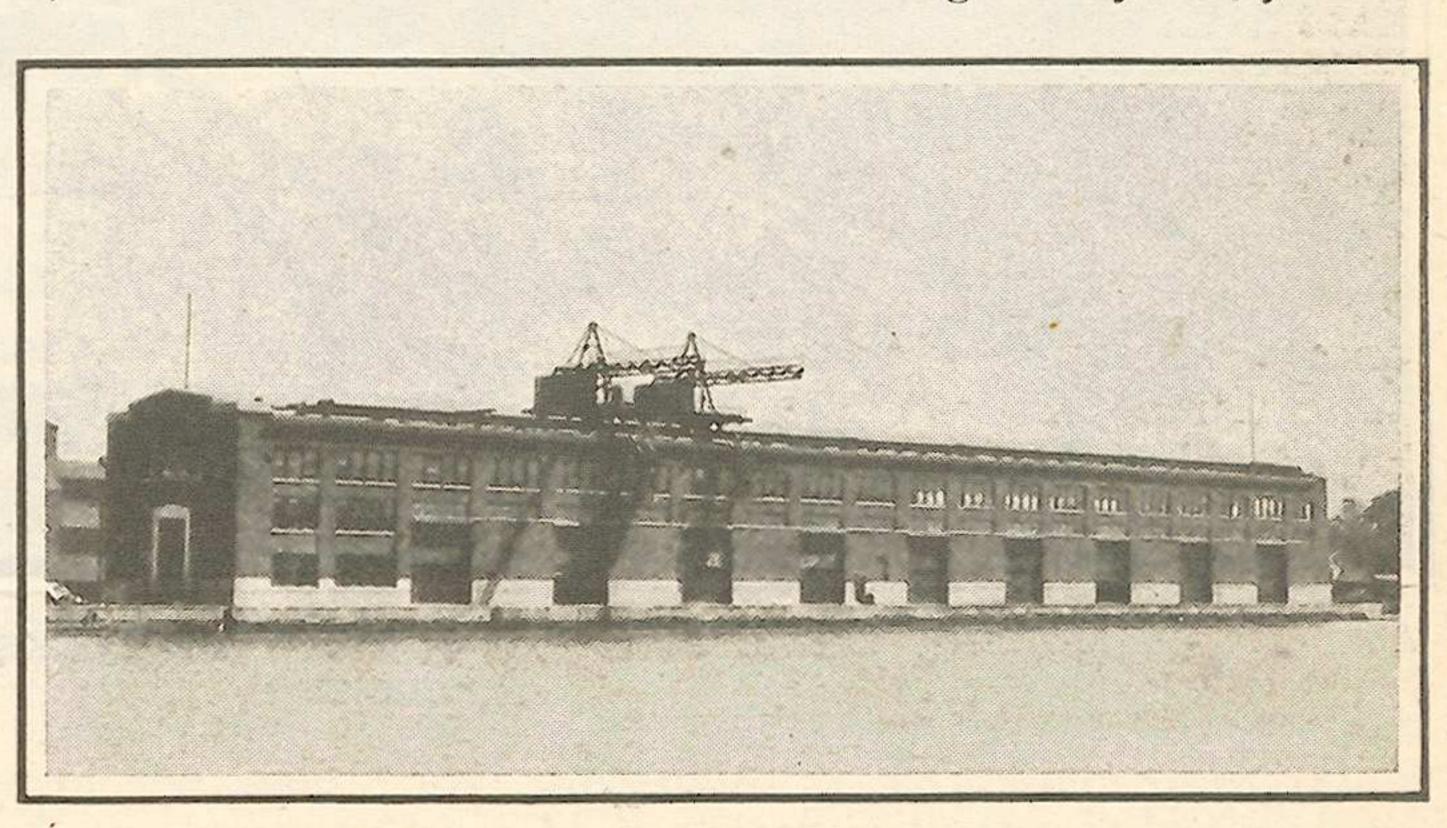
One studies life among these boatmen and comes to admire them. They constitute a clan among themselves. Our captain seemed to know the captain of every fleet we met. His "Hello, Joe," or "Bill," or "Jake," is always hearty, and meets with a cordial response. When there is talk from boat to boat across the water, it is generally about the load they are carrying and their destination. It is the eternal canal with all of them, and having been on its waters for a few days, I can understand why that is so. I am many times more of a boatman in my way of thinking than before I had taken this trip.

It will be necessary, however, as the canal.

comes into its own, and a regular, dependable and profitable service is firmly established, to improve the morale of its working forces. The Superintendent of Public Works has succeeded in doing this to a very marked degree so far as the State employees on the canal are concerned. The assistant superintendents, heads of divisions, and the men at the locks are men of character and are interested in the success of the

canal. The carrier corporations have set their faces in this direction. They are planning better accommodations on their boats for sleeping, eating and dressing. They hope to attract good men. There is no place on this modern waterway for the old-time "canal tough." He is not needed to preserve the romance of the canal. A different type—I was going to say, a more polished type—is necessary for a broader and more comprehensive canal movement. It will be composed of men who understand modern business conditions and demands, and who will find their work both pleasant and profitable.

Anyone who rides the length of New York State's great canal will be impressed with the splendid engineering feat that made it possible, as well as its wonderful scenic beauty. And when he stops to figure out its traffic possibilities, he will not consider it a slow-going method of transportation. For a boat-load of freight may easily make



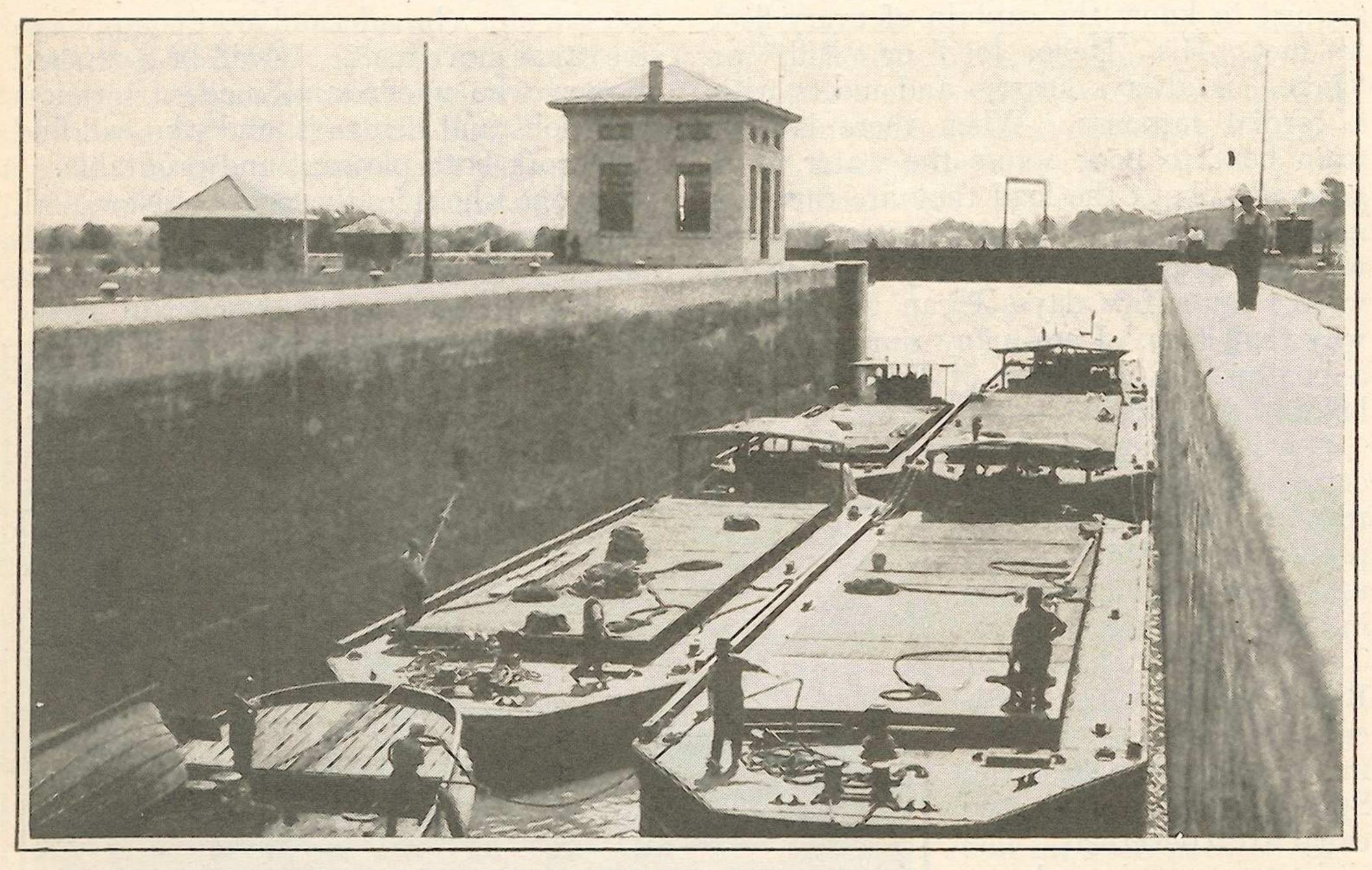
THE CANAL TERMINAL AT ROCHESTER

the length of the canal more quickly than the average carload goes from New York to Buffalo. A car may be side-tracked and shifted from one train to another. The boat, moving at a much slower pace, keeps steadily at it, and pulls through with surprising quickness. All boatmen believe it is easier to figure on the exact length of time required for a boat to reach its destination, and deliver its freight, than it is to estimate the length of time freight will be in the hands of the railroads.

It is said the waterways of the world offer the cheapest method of transportation. The captain of our tug was decidedly of this opinion. He told me that the tonnage on the canal is carried at a cost from 35 to 40 per cent. under the rail rates. This means an immense saving to shippers, and certainly must have a salutary effect, under normal conditions, in keeping freight rates down. No one wishes to "knock" the railroads. They are having a hard enough job to keep their cars moving and make both ends meet. The railroads have been a wonderful force for good in developing our resources and building up this continent. But experience has taught us that railroads can be very exacting when everything is going their way. The competition of the canal thus proves a very wholesome check on them.

From Lake Erie this waterway winds its way through the most beautiful and picturesque fruit and farm lands into the heart of the Genesee country, until it reaches the Seneca River. It crosses lakes and traverses fertile territory, until it joins hands with the Mohawk River to make its way to the Hudson. It combines romance and poetry. "From the Great Lakes to the Sea" is its slogan, and it is its mission to unite the fresh water lakes with the ocean. Whether this could have been done by a ship canal is problematical. It has been done by the Barge Canal.

It took something like sixteen years to build the Barge Canal across New York State. When it was finished the World War came on, and Federal occupation of the canal stopped private enterprise from making investments in boats and equipment. All this is changed now, and as business returns to its normal activity the canal will prove as great a blessing to shippers as did the original Erie Canal a century ago.



A FLEET OF MODERN CANAL BOATS IN ONE OF THE LOCKS BETWEEN SYRACUSE AND ROCHESTER