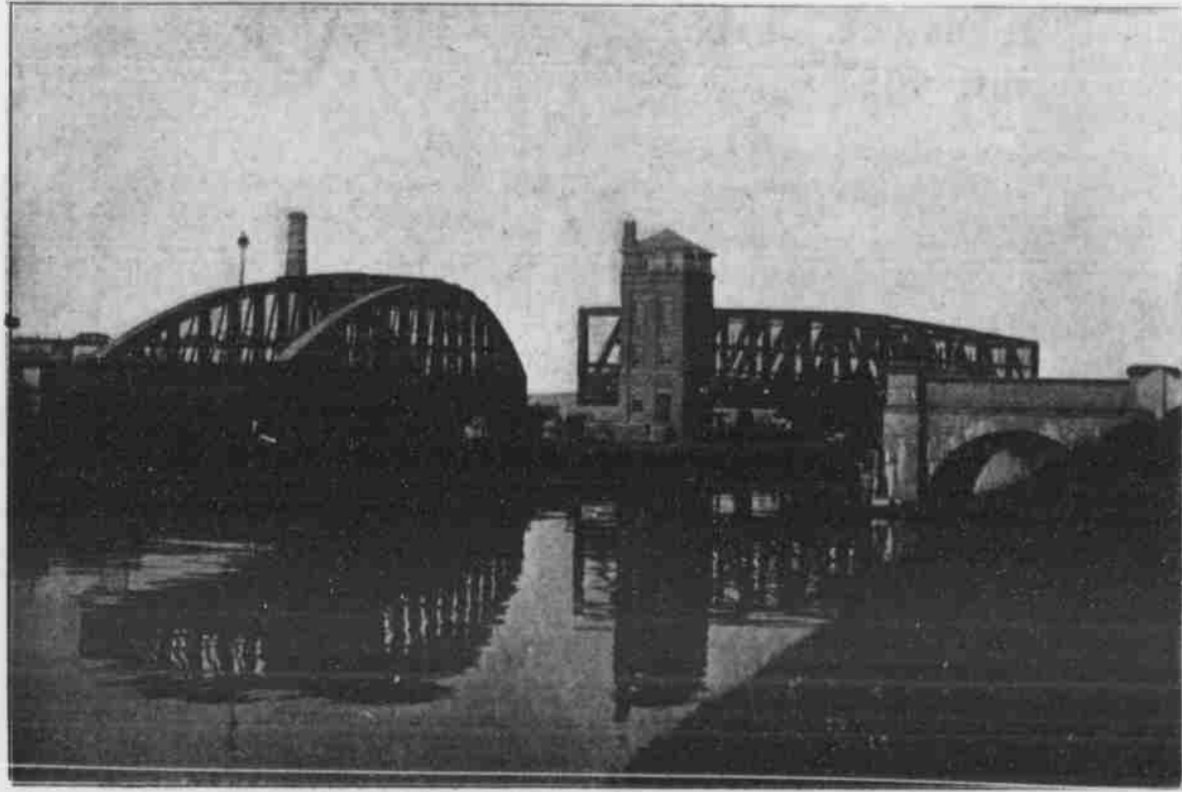
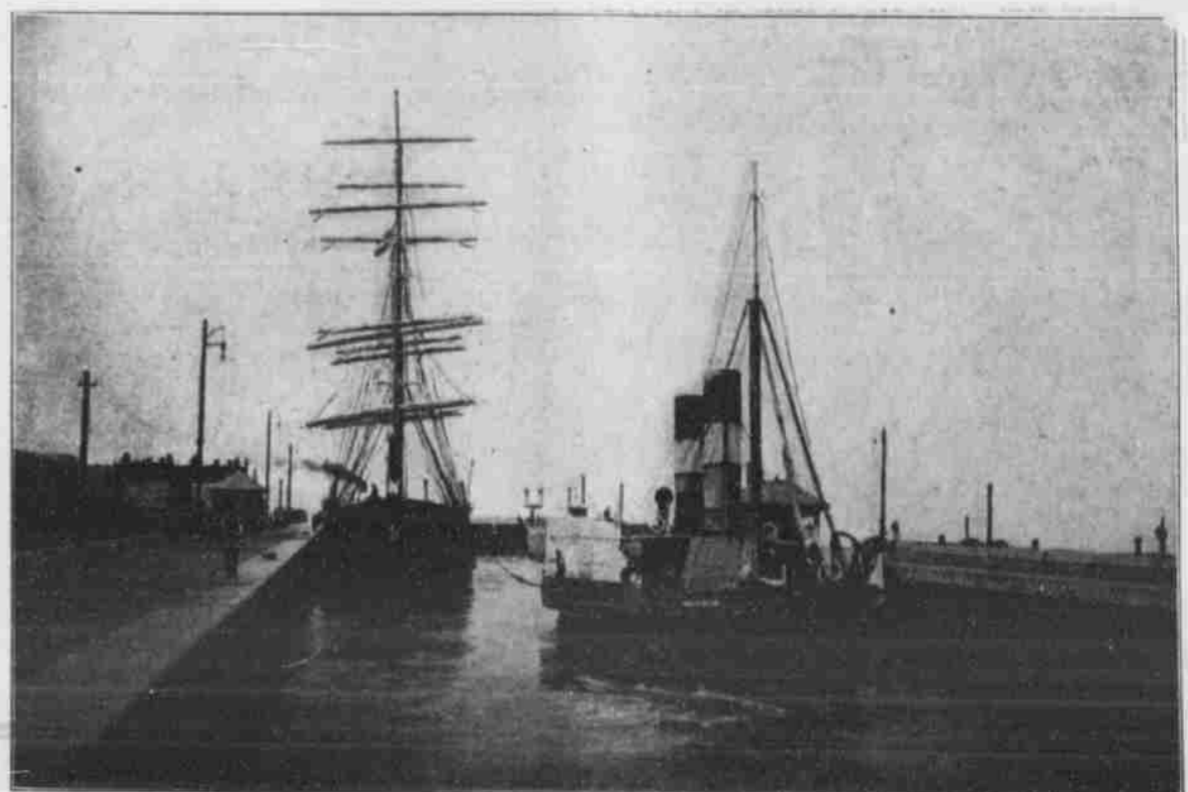


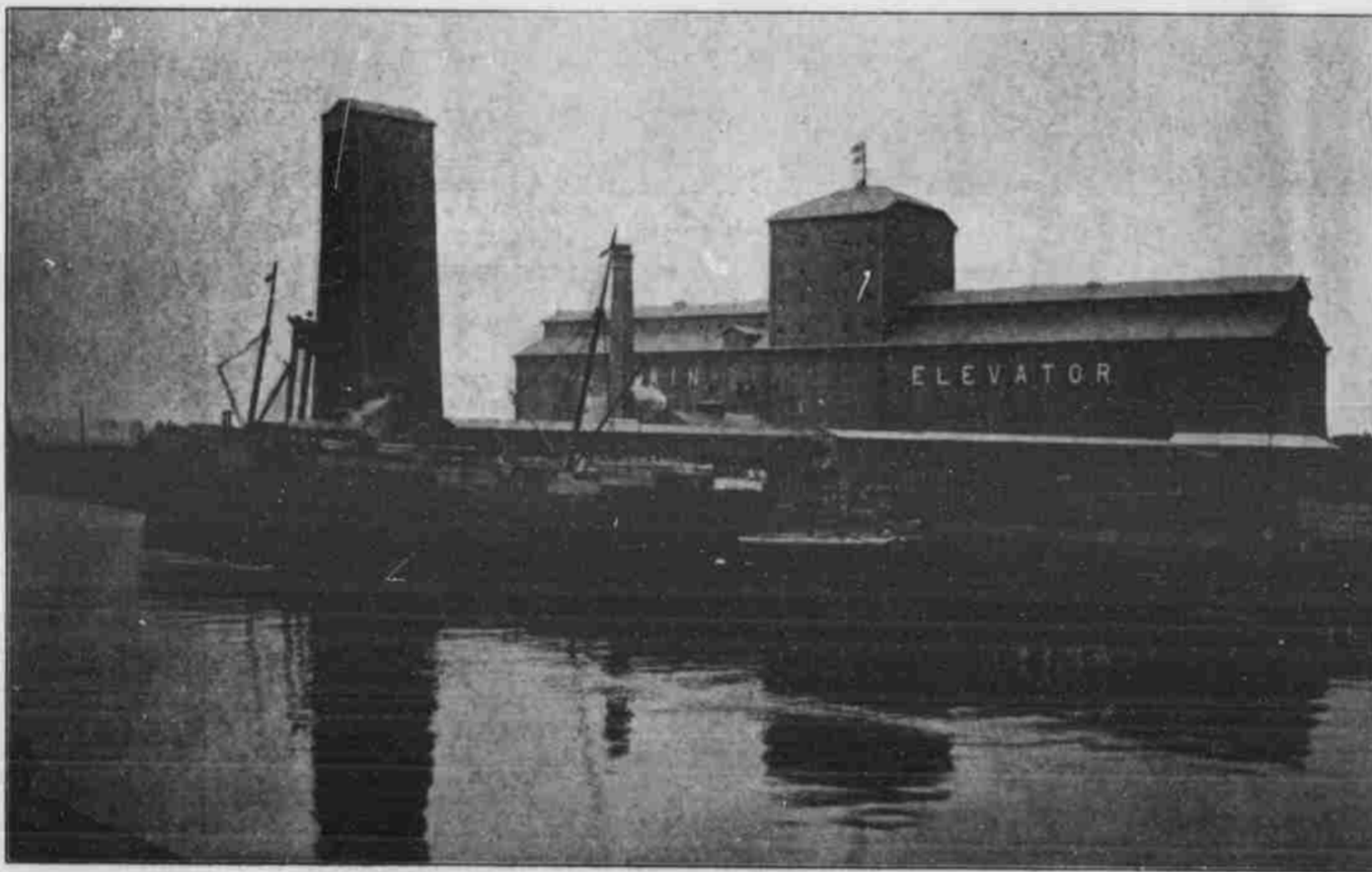
Deep Sea Harbor of Interior English City



SWINGING AQUEDUCT OF THE BRIDGEWATER CANAL.



IN ONE OF THE LOCKS OF THE MANCHESTER CANAL.



ELEVATOR FOR STORAGE OF AMERICAN GRAIN—THE SHIP IS FROM PHILADELPHIA.

(Copyright, 1902, by Frank G. Carpenter.)
MANCHESTER, England, July 31.—
 (Special Correspondence of The
 Bee.)—I have come here to give
 you the latest and newest infor-
 mation about the Manchester ship
 canal. It is rumored that Pierpont Morgan
 and his associates have bought a controlling
 interest in it, and that they will shortly
 put on a new line of steamers to trade
 between Manchester and the United States.
 There is no doubt but that Morgan's Lon-
 don bank owns a large amount of the
 shares. It took them when the canal was
 begun and has held them ever since. It will
 soon be the chief route for the entrance of
 our goods into this busiest part of the
 United Kingdom, and Manchester will be-
 come a headquarters of the American in-
 vasion. Indeed, the city already receives
 steamers from New York, Philadelphia,
 Baltimore, Galveston and New Orleans.
 Hundreds of thousands of cotton bales from
 our southern states are here brought via
 the canal, to be transferred to the mills; an
 enormous grain elevator has sprung up
 for the storage of American wheat, and I
 find that the warehouses along the Man-
 chester docks are already filled with all
 sorts of American goods.

Seaport of England's Heart.

But first let me tell you something about
 this great port, which the English have
 created in the very heart of their country.
 Manchester is far back from the sea. It is
 one of the busiest cities of the world, and
 the country surrounding it is a vast bee-
 hive of work. In passing over the rail-
 roads to and from it in every direction you
 ride through groves of smokestacks and
 it is impossible to get away from the dense
 smoke which pours forth from the found-
 ries, factories and mills which dot the
 landscape.

Including its sister city, Salford, the
 place has now about 800,000 population and
 the manufacturing towns nearby are so
 close together that 2,000,000 people live
 within carting distance of the Manchester
 docks. This means that goods brought
 here on the canal can be carried by horses
 to the homes and factories of these 2,000,000
 people.

Nearby are other industrial centers which
 make all sorts of products for home trade
 and export. Sheffield, with its cutlery, gun
 works and furnaces for making iron and
 steel, is but an hour away by train and
 the woolen center of Leeds is almost as
 near. Altogether Manchester forms the
 nearest port for a population of about
 3,000,000 and its people estimate that they
 can land ordinary goods by means of their
 canal at a saving of \$1 per ton on the inland
 transport over the same goods landed at
 Liverpool. The canal people have prepared
 estimates of the actual cost of distributing
 goods throughout this part of England
 and it will pay American shippers to in-
 vestigate the advantages of sending their
 exports by the canal almost direct to the
 factories.

Manchester's Mighty Waterway.

I have spent some days in going over the
 canal and in looking through the vast ware-
 houses and buildings which have grown up
 about it. It is one of the wonders of
 modern engineering and as a long-time in-
 vestment it will probably be a success,
 although the present generation and per-
 haps the next cannot expect to have divid-
 ends out of it. The cost of the under-
 taking has been enormous. At the start it
 was thought that the canal could be con-
 structed for \$40,000,000, but when com-
 pleted it was found to have cost \$75,000,000.
 Before it was built Manchester was on the
 down grade. Its factories and warehouses
 were falling and some of the greatest of
 its industrial institutions were transferring
 their plants and business to Glasgow, where
 they could have better shipping facilities.
 Liverpool was steadily gaining and Man-
 chester steadily declining. The former city
 charged what tolls it pleased on goods
 passing through to the Manchester region

and the railroads collected enormous freight
 rates.

How the Canal Was Built.

As a result the Manchester manufacturers
 saw ruin staring them in the face. They
 came together, planned this ship canal and
 raised the money to build it. They got the
 city corporation of Manchester to back
 them to the extent of \$25,000,000; they put
 their hands into their own pockets and gave
 millions more, and within a short time they
 had an army of laborers at work larger
 than that which Xenophon led on his march
 to the sea. When in full swing their army
 consisted of 17,000 men divided into eight
 companies, officered by picked experts, each
 digging at a section about four miles in
 length. This army had its camps in each
 section. Its tents were wooden houses
 made from lumber brought from the United
 States, and, as many of the workmen had
 their wives and families, there was a busy
 town along the whole line of the canal.

No one can appreciate the extent of the
 work without going over the canal. It is
 thirty-five and a half miles long, twenty-
 six feet deep and at the bottom 120 feet
 wide. If you can imagine a cellar so deep
 that you could drop a two-story house
 within it and have the roof below the sur-
 face, so wide that the average city lot could
 be laid crosswise across the bottom and so
 long that it would take a railroad train at
 a good speed an hour to run from one end
 of it to the other, you may have some idea
 of this enormous ditch which the Man-
 chester people have dug from their city to
 the sea. A part of the canal was along the
 course of the little river Irwell, but much
 of it had to be dug out of the solid rock.
 The excavation necessary was half as great
 as that required for the Suez canal and
 most of it much more difficult. Eight miles
 of embankments and sea walls had to be
 erected along the foreshore of the Mersey,
 and upon the whole canal 70,000,000 bricks
 and 220,000,000 cubic yards of masonry were
 constructed.

Five sets of locks were put in, each big
 enough to admit an Atlantic liner, and these,
 by means of great sluice gates, raise and
 lower the ships to the height or depth of
 sixty feet. There are, in short, from Man-
 chester to the sea, five mighty steps, each
 twelve feet high, which the ships have to
 climb in coming up the canal.

I was surprised at the extent of the Man-
 chester docks. It seems strange to see all

the sur-oundings of one of the largest sea-
 ports right in the heart of a rich manufac-
 turing and agricultural country. The docks
 are vats of water walled with masonry and
 surrounded with great warehouses, which
 are equipped with the finest of modern ma-
 chinery. The water space within them
 covers 256 acres and the total length of the
 quays about them is more than five miles.
 In one of the docks three Atlantic liners
 have been berthed simultaneously at the
 same quay, and during my visit yesterday I
 saw a ship from Bombay, one from Aus-
 tralia and one from Galveston loading and
 unloading goods almost side by side. Along
 the docks railways run and the company
 has 100 miles of track connected with the
 canal, and there are more than forty trains
 daily, carrying goods in and out the docks.

It was in the canal company's steam
 launch that I was taken from dock to dock
 and from warehouse to warehouse, and it
 was with a canal official that I later on
 took a trip down the canal from Manchester
 to the sea on the Duke of Leinster, bound
 for Ireland. Our captain of the Leinster was
 a jolly old sea dog who trembled like a leaf
 as we were photographed standing on deck
 going down the canal.

I am surprised at the traffic which this
 port already has with the United States. In
 every warehouse I found American goods,
 and in one especially, known as the New
 York warehouse, I saw thousands of bales
 of cotton, which had just come from Gal-
 veston, great boxes of machinery for the
 Westinghouse Electric works, crates of
 American lard and great cases of hams,
 bacon and lard. On the top of another ware-
 house, four stories high, I took photographs
 of a thousand odd barrels of resin which has
 just come from the pine lands of Georgia
 and South Carolina, and at the grain eleva-
 tor I saw a ship unloading wheat from
 Philadelphia.

Chicago Men Made It.

This elevator is of American construc-
 tion, having been built by Messrs. John S.
 Metcalf & Co. of Chicago. It has a storage
 capacity of 40,000 tons of grain or 1,500,000
 bushels of wheat, and in it there are 226
 bins or pits, the largest of which holds as
 much as 300 tons. The elevator is right on
 the canal, and the grain is taken directly
 from the ship through a marine leg, which
 works by revolving buckets on an endless
 chain, lifts the grain up into the tower
 beside the boat and drops it upon a wide

India rubber belt, which carries it into the
 elevator and up into the bins. There are
 also pipes which do the same work by
 means of suction, so that a shipload of
 wheat can be discharged within a few
 hours. The machinery will take 500 tons
 from the steamer hold into the elevator in
 one hour. It weighs the grain at the water's
 edge, and later on weighs it again when it
 is in the sacks ready to be loaded upon the
 carts or barges by which it is taken over
 the country.

During my visit to the elevator, and, in-
 deed, throughout the trip, I was accom-
 panied by Mr. A. Joynson of the Manches-
 ter Canal company. He tells me that the
 grain imports have steadily increased since
 this elevator was finished, and that they
 now amount to about 150,000 tons annually.
 During the first six months of this year
 85,000 tons of grain have been received into
 the elevator, and the most of this came
 from the United States.

He tells me that the shipping from the
 United States is steadily increasing. Regu-
 lar steamers have been run here for years
 from New York, Savannah, New Orleans
 and Galveston, and there have been occa-
 sional sailings from Baltimore, Newport
 News, Charleston, Brunswick, Mobile and
 Pensacola. Cattle are now brought here
 from Philadelphia, and in the near future
 there will be a direct steamship line from
 Chicago to Manchester by way of the St.
 Lawrence, the Welland canal and the Great
 Lakes. These ships will bring cargoes of
 lumber and provisions, and a regular ser-
 vice will probably be maintained.

Canada and the West Indies.

Canada already has a line of large steam-
 ers to Manchester, which make regular
 trips during the summer. These ships
 bring both lumber and cattle. Some of
 them are of over 8,000 tons, having ac-
 commodation for 700 live bees.

There is a good prospect for a fruit trade
 between Manchester and the West Indies.
 Within the last few months bananas have
 been brought here from Jamaica and a
 regular banana service is to be instituted
 which will supply the Midlands with this
 fruit, and this service may in the future be
 extended to Porto Rico and Cuba. The
 fruit companies here have bought three
 steamers from the Chesapeake & Ohio Rail-
 way company and will run them to Jamaica.
 Each boat will bring 40,000 bunches of
 bananas.

Among the recent arrivals are two ships

from the Black sea with 7,000 tons of Indian
 corn, the sailing vessel Miltiades from San
 Francisco with 11,000 quarters of barley
 and wheat and Ciampa of Tacoma with
 2,500 tons of wheat from our great north-
 west.

The traffic of the canal is steadily grow-
 ing. Within the last six months the reve-
 nue has increased to the amount of \$125,000
 and there has been a steady growth in the
 business since the beginning. The traffic
 of the present year will probably exceed
 3,000,000 tons and will be greater than that
 of any year of the past.

In my ride up the canal I passed cotton
 ships from America and from Egypt. The
 American imports up to the middle of last
 April were almost 400,000 bales and the
 Egyptian about one-fourth that number. At
 the lumber docks I saw a ship from Mobile
 unloading a cargo of pitch pine and at the
 same wharf was one similarly loaded from
 Pensacola. There were great tank steamers
 from the Russian oil fields at the Russian
 oil tanks on the right bank of the canal
 and on the left other tank steamers dis-
 charging American petroleum. I passed the
 freezing works where the New Zealand
 ships land their frozen mutton in my sail
 on the Duke of Leinster and also the great
 cattle sheds and abattoirs belonging to the
 Manchester corporation, of which I may
 speak further in another letter.

Some Wonders of the Canal.

The ride down the canal was one of great
 interest. The canal company owns
 much of the land along the way and this is
 of such a nature that there could be an al-
 most continuous dock from one end of it to
 the other. Leaving Manchester you sail by
 the great warehouses and factories on the
 canal's bank. Now you are passing through
 fields as rich as any in old England. They
 are bounded by hedges and upon the green
 grass fat cattle are feeding. Cheshire county
 on your left is one of the richest dairy coun-
 ties of the United Kingdom, and Lancashire
 on your right is the busiest manufacturing
 county of the whole world. We saw large
 manufacturing towns at every few miles
 and often passed other steamers coming up
 to the city. The locks were easily and
 quickly gone through; the sluice gates open
 and shut automatically and the steamer
 drops twelve feet within less than half as
 many minutes.

We steamed under great railroad bridges
 so high above the canal that the masts of
 the ships do not touch them as they pass
 on below. These bridges were erected at
 an immense cost by the canal company. The
 railroad companies were opposed to the en-
 terprise, as they thought it would cut down
 their traffic between Liverpool and Man-
 chester, so they forced the canal people to
 not only build the bridges, but to raise the
 railroads for several miles on each side of
 the canal, so that the slope of the road
 crossing the canal might not be steep.

The most surprising bridge on the canal,
 however, is one where the Bridgewater canal
 crosses the Manchester ship canal. The
 Bridgewater canal has for years done a
 large business between Manchester and
 Liverpool. It was bought by the Manchester
 company at the time they began the ship
 canal and it was then making a profit of
 something like \$100,000 a year. It is still
 in use and it carries considerable freight.
 The line of this canal was right across the
 route necessary to the Manchester ship
 canal, and at first it seemed as though the
 construction of the latter would necessitate
 its destruction.

This was objected to, and the engineers
 solved the problem by making a swinging
 aqueduct bridge at the crossing. This
 bridge can be closed with the water, and
 even with the boats in it, and by machinery
 so moved around to the side that the ships
 can pass through in the greater canal below.
 When they have passed the bridge moves
 back into place and the water flows on un-
 disturbed. The aqueduct, with the water
 in it, weighs 1,400 tons, and it is moved as
 easily as though it weighed less than four-

(Continued on Eighth Page.)