THE AMERICAN GRAIN TRADE OF THE GREAT LAKES, 1825-1873

by
Thomas D. Odle

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1951

Committee in charge:

Doctor Sidney Fine, Chairman
Professor Verner W. Crane
Professor Z. Clark Dickinson
Professor Lewis G. Vander Velde

PREFACE

In the past century the land area lying between the Great Lakes and the Mississippi and Ohio Rivers was the granary of the nation, and the grain trade from this region--carried on both the Mississippi River and the Great Lakes--supplied the markets for foodstuffs in the eastern and southern United States.

It has been my purpose to describe the development of the grain trade on the Great Lakes. This trade was part of a larger pattern of intersectional commerce carried on the Lakes: the movement of agricultural produce to the East was balanced by a movement of manufactured goods to the West. In this study, however, I have attempted to describe only one side of that two-way commerce. In so doing I have sought to indicate the sources of the grain trade of the Great Lakes and the canals and railroads which supplemented this natural transportation system. In addition I have attempted to show the development of the transportation and handling facilities for grain on the Great Lakes and also the development of the marketing system on that route. In the latter connection I have tried to indicate the major factors responsible for the diversion of trade from the Mississippi River to the Great Lakes. Finally I have attempted to indicate the influence

which the Great Lakes trade, as an economic interest, had on political developments in the United States prior to the Civil War.

Thomas D. Odle

TABLE OF CONTENTS

		Page
PREFACE		ii
TABLE OF CONTENTS		iv
INTRODUCTION		1
Chapter		
I.	THE SOURCES OF THE GRAIN TRADE OF THE GREAT LAKES AND THE DIVERSION OF TRADE TO THAT ROUTE	14
II.	THE TRANSPORTATION AND HANDLING OF GRAIN ON THE GREAT LAKES	37
III.	THE DEVELOPMENT OF THE MARKETING SYSTEM OVER THE GREAT LAKES ROUTE, 1829-1860	51
IV.	THE EFFECT OF THE TELEGRAPH AND THE RAILROAD ON THE MARKETING SYSTEM OF THE GREAT LAKES, 1853-1873	77
V.	THE INTEREST OF GRAIN DEALERS AND OTHER COMMERCIAL GROUPS OF THE GREAT LAKES IN NATIONAL POLITICS PRIOR TO THE CIVIL WAR	98
APPENDIX		143
BIBLIOGRAPHY		157

INTRODUCTION

Between 1825 and 1873 the East North Central area, embracing the states of Ohio, Indiana, Illinois, Michigan, and Wisconsin, was preeminently a grain-raising section.[1] In 1825 the completion of the Erie Canal made possible a grain trade from this area via the Great Lakes and the Erie Canal to the eastern United States. For about fifty years the character of this grain trade remained essentially the same, but by 1873 certain developments had begun to alter its character.

By that year the railroads linking East and West had worked fundamental changes in the nature of the trade, while at the same time the major ports on the Great Lakes--Cleveland, Toledo, Detroit, Chicago, and Milwaukee--which had owed such a large share of their prosperity to the grain trade, were no longer so dependent on that trade as they had been formerly. The East North Central area, for which these Great Lakes ports and others were the commercial outlets, continued to produce millions of bushels of grain each year after 1873, but the center of grain production in the United States had

---

[1] See the maps of wheat and corn production in the United States for 1839, 1849, 1859, 1869, 1879, 1889, in the U. S. Department of Agriculture, Yearbook for 1921, 90-91, 94-95, 171-173.

moved farther westward.[2] This movement brought the breadstuffs trade of the western ports of Lake Superior into being, and after 1873 the grain trade from this region began to be one of the most prominent features of the Great Lakes grain trade.[3]

The East North Central area of the United States is well-defined geographically. The Great Lakes form its northern and eastern boundaries, and the Mississippi River and its tributary, the Ohio River, form its southern and western borders.

The Great Lakes and the Mississippi River were the two natural water routes of transportation from this area. The Mississippi River with its outlet below New Orleans, Louisiana, was a route to the South, whereas the Great Lakes constituted a route to the East.

The grain which was shipped from the East North Central area over these two routes was destined for areas where there was an insufficient supply of breadstuffs. In the United States before the Civil War the two general areas of which this was true were the New England-Middle Atlantic states and the South.[4] The New England-Middle Atlantic states market

---

[2]This westward movement is shown in the maps referred to in footnote 1.

[3]The grain trade of the Great Lakes after 1873 is treated in Frank Andrews, Grain Movement in the Great Lakes Region, U. S. Department of Agriculture, Bulletin 81.

[4]Percy W. Bidwell and John I. Falconer, History of Agriculture in the Northern United States, 1620-1860, 308-312.

moved farther westward.[2] This movement brought the breadstuffs trade of the western ports of Lake Superior into being, and after 1873 the grain trade from this region began to be one of the most prominent features of the Great Lakes grain trade.[3]

The East North Central area of the United States is well-defined geographically. The Great Lakes form its northern and eastern boundaries, and the Mississippi River and its tributary, the Ohio River, form its southern and western borders.

The Great Lakes and the Mississippi River were the two natural water routes of transportation from this area. The Mississippi River with its outlet below New Orleans, Louisiana, was a route to the South, whereas the Great Lakes constituted a route to the East.

The grain which was shipped from the East North Central area over these two routes was destined for areas where there was an insufficient supply of breadstuffs. In the United States before the Civil War the two general areas of which this was true were the New England-Middle Atlantic states and the South.[4] The New England-Middle Atlantic states market

---

[2]This westward movement is shown in the maps referred to in footnote 1.

[3]The grain trade of the Great Lakes after 1873 is treated in Frank Andrews, Grain Movement in the Great Lakes Region, U. S. Department of Agriculture, Bulletin 81.

[4]Percy W. Bidwell and John I. Falconer, History of Agriculture in the Northern United States, 1620-1860, 308-312.

was a larger market for breadstuffs than the South. During the pre-Civil War period, for example, part of the grain which took the route down the Mississippi River toward the South was later shipped from the port of New Orleans to ports on the north Atlantic coast.[5]

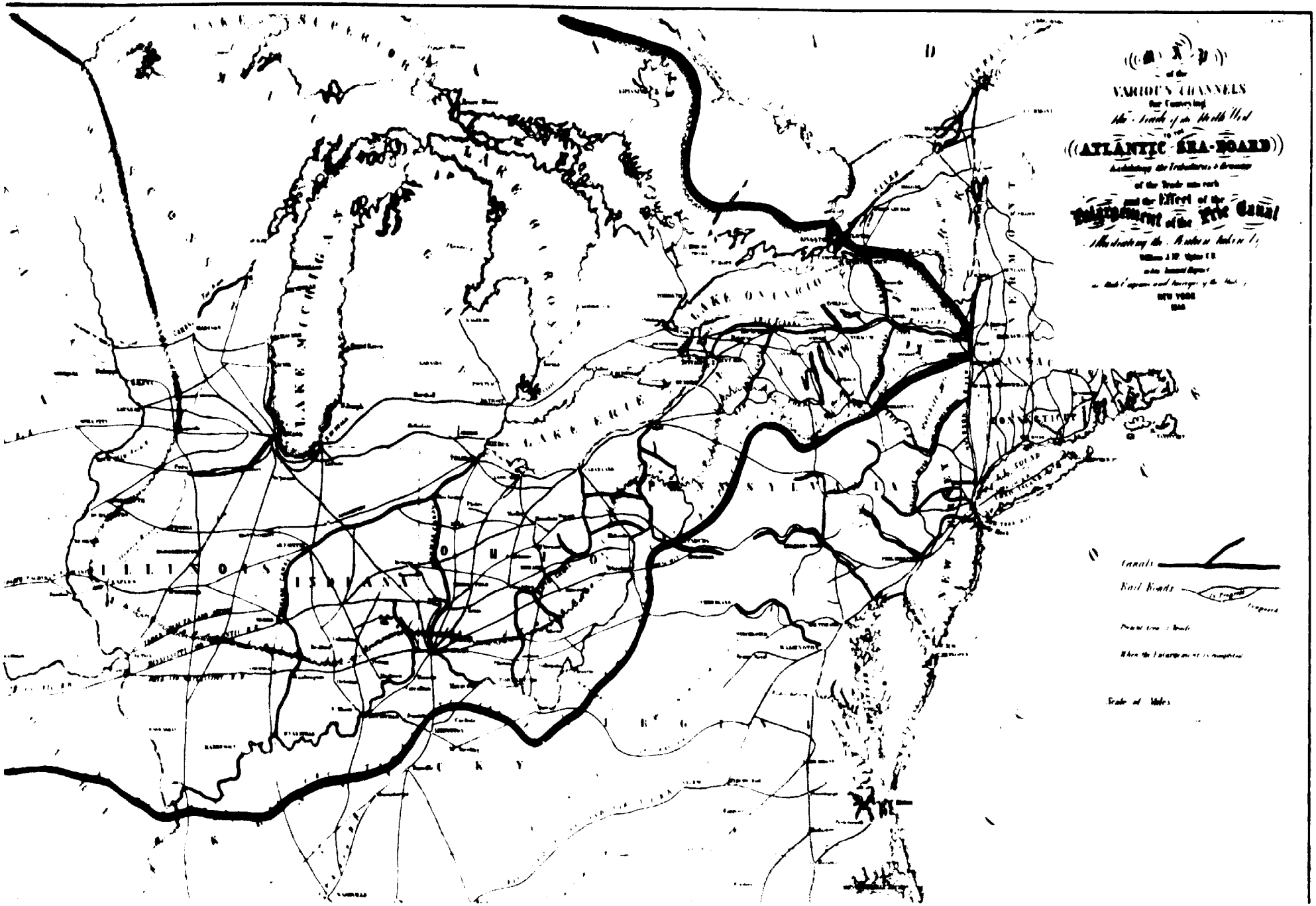
The opening of the Erie Canal in 1825 confronted the Mississippi River route with a competitive route by which the grain of the East North Central area might be shipped to the New England-Middle Atlantic states market. This canal made the Great Lakes usable as a route from West to East because it connected the Great Lakes with the Hudson River. The natural outlet of the Great Lakes to the Atlantic Ocean is by way of the St. Lawrence River, but this route could not be commercially used because of the obstacle to navigation formed by Niagara Falls, where the waters of Lake Erie drop down to Lake Ontario, and because of the series of eight rapids in the St. Lawrence River.

The Erie Canal by-passed Niagara Falls. On the map (page 4) the route of this canal presents the appearance of a canal extension of the Great Lakes from Buffalo, New York, at the eastern-most end of Lake Erie (above Niagara Falls) to the Hudson River at Albany and Troy, New York.

In 1829 still another route to the eastern United States was opened. This occurred with the completion of the Welland Canal, an eight-foot deep ship canal past the Canadian side

---

[5] Ibid., 309.



New York, Senate Document No. 60 (1854), map Q.

of Niagara Falls, and the Oswego branch of the Erie Canal.[6] The private company which built the Welland Canal, however, found that the western terminus of the canal on the Niagara River above the Falls was too difficult of access, and as a consequence this route did not come into commercial use until a new western terminus was opened at Port Colborne, on Lake Erie, in 1833.[7] The Welland-Oswego route made it possible for Lake vessels to go past Niagara Falls and then sail to Oswego, New York, a port on Lake Ontario. From there the Oswego Canal connected with the Erie Canal.

The canal system of New York state thus had two main western termini--one was at the port of Oswego, on Lake Ontario, below Niagara Falls, and the other was at the port of Buffalo, on Lake Erie, above Niagara Falls.

The mere existence of these canal routes to the East via the Great Lakes, however, was not enough in itself to assure a growth of trade on the Great Lakes. These routes had to be supplemented if Westerners were to use them because at the time when they became available most of the population of the East North Central area was concentrated in the river valleys in the southern part of that area. To reach the Great Lakes from these river valleys an arduous haul by wagon

---

[6]Noble E. Whitford, History of the Canal System of the State of New York, together with Brief Histories of the Canals of the United States and Canada, I, 452, II, 1445.

[7]William L. Bancroft, "Memoir of Capt. Samuel Ward, with a Sketch of the Commerce of the Upper Lakes," Michigan Pioneer and Historical Society, Collections, XXI (1892), 358.

was required. This difficulty, however, was overcome by a series of canals which were constructed by the state governments of Ohio, Indiana, and Illinois. These canals connected the Great Lakes with tributaries of the Mississippi River: Lake Erie was connected with the Ohio and Wabash Rivers and Lake Michigan with the Illinois River. The following is a list of these canals (also see the map on page 4):[8]

	Year of Completion	Termini
Ohio and Erie	1833	Portsmouth, Ohio; Cleveland, Ohio
Miami and Erie	1845	Cincinnati, Ohio; Toledo, Ohio
Wabash and Erie	1851	Evansville, Indiana; to Indiana state line. Connected at Defiance, Ohio, with the Miami and Erie Canal.
Illinois and Michigan	1848	Lasalle, Illinois; Chicago, Illinois

The movement of grain over the transportation system of the Great Lakes was mainly a wheat movement. The shipment of corn began to be important only after 1845. After that year, however, the movement of corn was consistently second in volume to that of wheat. The shipment of oats began to be important after 1850. Thereafter oats ranked third in the volume of grain shipments on the Great Lakes. The movement of barley and rye, compared to the movement of wheat, corn, and oats, never became important.[9]

---

[8] Whitford, History of the Canal System of the State of New York, II, 1369 ff.

[9] See the statistics of grain receipts at Buffalo given in the appendix to the present study. See also the following source of information for the grain shipments from the major western ports. "The Grain Trade of the United States and Tables on the World's Wheat Supply and Trade," U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 1962.

The largest purchasers of corn and oats in the eastern United States were livestock-raisers.[10] The most important use of both these grains is in the production of beef and pork. Because there were also livestock-raisers in the West who used corn and oats to produce pork and beef, the shipment of barreled pork and beef from the West may be regarded as a grain movement in a disguised form. A former New York Canal Commissioner expressed this point by saying, ". . . what is a hog but fifteen or twenty bushels of corn on four legs?"[11]

Although there was a close connection between the main products which the West sold to the East--grain and meat--the grain trade and the provisions trade, as the trade in barreled meat was called, were somewhat different from each other. The grain trade was conducted by commission merchants in the West who sold grain for the farmer, while the provisions trade came to be dominated by meat packers.

The wheat which was shipped on the Great Lakes to Eastern markets went forward either as flour which was shipped in barrels from the small flour mills in the West, or as bulk wheat which was destined for the large milling industry of New York state. The milling centers of that state were located along the line of the Erie Canal at Rochester, Troy,

---

[10] U. S. Department of Agriculture, Yearbook for 1921, 164.

[11] Cited in William Kingsford, The Canadian Canals: Their History and Costs with an Inquiry into the Policy Necessary to Advance the Well-Being of the Province, 147. The remark was made by Samuel B. Ruggles.

Oswego, and Black Rock (the last-named is now a part of the city of Buffalo).[12]

Until the early 1850's the movement of wheat from Western millers in the form of flour was about double the amount of the bulk wheat shipments to the New York millers. This flour came mostly from small flour mills in the hinterlands of Cleveland and Detroit.[13] After 1850, however, more bulk wheat than flour was shipped and the proportions were almost exactly reversed.[14] After that year the New York millers increased their purchases of Western wheat, and at the same time foreign demand brought an increase in the export of bulk wheat.[15]

The foreign demand for American grain--Great Britain was consistently the largest foreign purchaser--never assumed large proportions, however. This was true even after the repeal in 1846 of the British Corn Laws, a shifting-scale of protective tariff duties which increased in amount as the British price for grain decreased. In the period prior to 1868, the amount of wheat exported in any year never exceeded

---

[12]Charles B. Kuhlman, The Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis, 54-63.

[13]Senate Executive Documents, No. 23, 31 Congress, 2 session, 601. Previous to 1879 a standard barrel of flour of 196 pounds was considered equal to five bushels of wheat. U. S. Treasury Department, Report on the Internal Commerce of the United States, 1882, 211.

[14]U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 1962.

[15]Kuhlman, The Development of the Flour-Milling Industry in the United States, 57.

15% of the total wheat crop of the nation.[16] Thereafter, however, the export of American wheat did increase, but until 1877 the highest percentage exported in any year (1873) was still only 30%.[17] Wheat figured more largely in American exports than any of the other grains. Corn was second in foreign demand, but oats, barley, and rye were relatively unimportant in the export trade.[18]

To the American farmer the importance of the repeal of the British Corn Laws lay not so much in the increased size of the foreign market which was thereby opened to American grain but rather in the salutary effect on U. S. grain prices. The editor of Niles National Register explained this fact in 1846 as follows:

> It must be borne in mind, that the selling price of the whole of the grain produced in this country, is regulated almost entirely by what we can obtain for the small portion that we succeed in finding a foreign market for. -- and which never amounts to one-twentieth of what we raise![19]

The reason why the foreign demand for grain exerted an effect on U. S. grain prices was that the United States produced a surplus of grain above domestic needs. When no foreign market was available for this surplus it was offered

---

[16] U. S. Department of Agriculture, Yearbook for 1921, 154.

[17] Ibid.

[18] Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 2022; Senate Reports, No. 259, 53 Congress, 2 session, 105, 107, 108. See the appendix to the present study.

[19] Niles National Register, LXIX (1846), 69.

for sale in the domestic market. This exerted a depressing effect on the entire domestic grain crop of that year because it increased the amount of grain available for sale, and grain prices tended to reflect supply and demand factors. The repeal of the British Corn Laws, therefore, did not open a large market for American grain, but it did supply a sizeable vent for the grain surplus of the United States and thus helped the American farmer pricewise.[20]

In general the source, markets, and outlets of the Canadian grain trade of the Great Lakes were separate from the American grain trade. As foreign vessels, Canadian-owned vessels were forbidden by the navigation laws of the United States from engaging in the American grain trade.[21]

Montreal, located on the St. Lawrence River, was the entrepot of the Canadian grain trade. Until 1847 the Canadian and American grain purchased by the Montreal grain merchants reached that city by means of the Ottawa-Rideau system of canal navigation, a route from Kingston, on the Canadian shore of Lake Ontario, to Montreal. This canal system was begun by the British government in 1826 and completed in 1832. It skirted the rapids in the St. Lawrence River by means of an inland canal route from Kingston to Bytown (now

---

[20]Herbert J. Wunderlich, "Foreign Grain Trade of the United States, 1835-1860," Iowa Journal of History and Politics, XXXIII (1935), 75; U. S. Department of Agriculture, Yearbook for 1921, 146.

[21]Canadian Sessional Papers, 1871, No. 54, 34.

Ottawa), with transportation via the Ottawa River available from there to Montreal.[22] The Montreal grain merchants handled the marketing of the grain crop of Lower Canada (now the province of Ontario) because the grain crop of this region was excluded from American markets by a protective tariff duty of 25 cents a bushel.[23] This grain was marketed mainly in Great Britain and in the maritime provinces of Nova Scotia, New Brunswick, and Prince Edward Island. When the Montreal merchants were unable to obtain enough grain to meet the needs of these markets they also imported American grain under nominal import duties.[24]

The St. Lawrence ship-canal system, on which work had been begun as early as 1821, was finally finished in 1847. This route made it possible for Montreal's grain trade to follow the direct route down the St. Lawrence River. However, transhipment to ocean-going vessels was necessary at Montreal for the voyage overseas because the St. Lawrence Canals had a limiting depth of nine feet, and most ocean-going vessels drew more than nine feet of water.[25]

---

[22] Gilbert N. Tucker, The Canadian Commercial Revolution, 1845-1851, 35-36 (see end paper map); Canadian Statistical Yearbook for 1894, 716, 719.

[23] Robert L. Jones, History of Agriculture in Ontario, 1613-1880, University of Toronto Studies, History and Economic Series, XI, 123.

[24] Thomas C. Keefer, The Canals of Canada: Their Prospects and Influence, 26 ff.

[25] Canadian Statistical Yearbook for 1894, 716.

Because of the limitation in depth in the St. Lawrence Canals it was more economical to use larger vessels on the Great Lakes and tranship their grain cargoes to canal-boats on the Erie Canal than to ship grain directly to the East via the St. Lawrence River. This became evident during the period from 1855 to 1866 when the Elgin-Marcy treaty of tariff reciprocity was in force between the United States and Canada. During that period the Lakes basin was a free-trading area, and article four of the treaty permitted American vessels to navigate the St. Lawrence Canals.[26] A direct trade down the St. Lawrence River (mainly to Great Britain) quickly sprang up from Chicago, Cleveland, and Detroit, but this trade died out as quickly as it appeared because it was found to be commercially unprofitable to use the small vessels which were required in the navigation of the St. Lawrence River.[27]

Montreal never received a very large proportion of the total grain movement on the Great Lakes. One of the commercial leaders of Montreal estimated in 1859 that his home city in the course of the previous decade had received an average each year of about 8% of the total eastward movement of grain on the Great Lakes. Of this amount he estimated that one-third was retained in Montreal, and two-thirds was sent down

---

[26]George W. Brown, "The Opening of the St. Lawrence to American Shipping," Canadian Historical Review, VII (1926), 12.

[27]John B. Mansfield (ed. and comp.), History of the Great Lakes, I, 191-192; U. S. Treasury Department, Statistics of the Foreign and Domestic Commerce of the United States, 1864, 100.

the St. Lawrence River--a portion for export and the remainder for consumption at points along the river and in adjacent districts.[28] In the years after 1859 the proportion of the grain movement received at Montreal remained about the same.[29] These figures indicate that the grain trade of the Great Lakes was largely an American grain trade and it is with that part of the trade with which this study is concerned.

---

[28]John C. Trautwine, Reports of the Means of Improving the Present Harbor and the Construction of Docks at Montreal, 37. The estimates were made by John Young.

[29]Canadian Sessional Papers, 1871, No. 54, 159.

CHAPTER I

THE SOURCES OF THE GRAIN TRADE OF THE GREAT LAKES AND THE DIVERSION OF TRADE TO THAT ROUTE

The American grain trade of the Great Lakes in the course of its development up to about 1873 reflected the stage by stage diversion of a portion of the grain trade of the East North Central area from the Mississippi River to the Great Lakes route. It reflected also two other factors: the gradual settlement of, and the production of a grain surplus in, the areas close to the Great Lakes, and finally, after 1850, the commercial revolution in the internal trade of the United States which was occasioned by the telegraph and railroad. As a result of this latter change, Buffalo lost to Chicago its position as the largest grain and flour market in the United States.

The diversion of trade from the Mississippi River to the Great Lakes was accomplished through the medium of such port cities as Cleveland, Toledo, Chicago, and Milwaukee. The important commodities which these centers diverted to the Great Lakes were grain, pork, beef, wool and cheese. Of these commodities, grain (including flour) was by far the most important, as the following table of the commodities shipped eastward from Buffalo on the Erie Canal indicates:[1]

---

[1] Senate Executive Documents, No. 112, 32 Congress, 1 session, 92. These figures do not include the statistics of the movement through the Black Rock entry to the Erie Canal. See the appendix to the present study.

Articles	1835	1840	1845	1850
Flour, bbls.	100,883	639,633	721,891	984,430
Wheat, bushels	168,012	883,100	1,354,996	3,304,697
Corn, bushels	14,579	47,885	33,069	2,608,967
Provisions, bbls.	6,502	25,070	68,000	146,836
Ashes, bbls.	4,419	7,008	34,602	17,504
Wool, pounds	140,911	107,794	2,957,007	8,805,817
Cheese, Butter & Lard, pounds	1,030,632	3,422,687	6,597,007	17,534,981
Staves, number	2,565,272	22,410,660	88,296,431	159,479,504

The diversion of the grain trade from the Mississippi River route to the Great Lakes route was not a complete diversion; the South continued to be a market for grain. The diversion which did take place injured the former coastwise grain trade of New Orleans with the ports of the Atlantic coast, but a certain proportion of the grain of the East North Central area continued to be sent down the Mississippi River to supply the southern market.[2] This grain came from the southern part of the East North Central area, and the importance of this trade should not be overlooked. For example, in 1860, St. Louis and Cincinnati, which were the entrepots of this grain trade, were respectively the third and fifth largest primary grain receiving points in the United States. The receipts of the larger primary grain markets in 1860 were as follows:[3]

---

[2] Eighth Census of the United States, Agriculture, clv, clvi; James D. B. De Bow, The Industrial Resources, etc., of the Southern and Western States, III 15-17; Kuhlman, The Development of the Flour-Milling Industry in the United States, 87, note 2.

[3] Louis B. Schmidt, "The Internal Grain Trade of the United States," Iowa Journal of History and Politics, XIX (1921), 449.

	Total grain, including flour reduced to its equivalent in bushels
Chicago	37,235,027
Toledo	14,504,903
St. Louis	12,220,990
Milwaukee	11,102,042
Cincinnati	6,368,302

Not only was the diversion to the Great Lakes route incomplete, but in addition the diversion which did take place occurred in stages. The diversion began at the time of the completion of the Ohio and Erie Canal in 1833, and in the remaining years of the 1830's almost all the grain and flour which arrived at Buffalo and Oswego from the West came from Cleveland, the Lake Erie terminus of the Ohio and Erie Canal.[4] The rapidity with which this trade was developed is indicated by Cleveland's grain receipts in 1833. In that year Cleveland received 386,760 bushels of wheat and 98,302 barrels of flour for shipment to the East--an enormous amount of breadstuffs to be handled by the commercial men of a village which then numbered less than 3,400 people.[5]

Other ports along the Ohio shore--Huron, Sandusky, Milan, Ashtabula, and Fairport--also developed as centers of grain export, but except for Sandusky, which was active in the construction of railroads into the populous southern part of the state, the grain trade of these ports was gradual in its

---

[4] Commissioners of the Canal Fund, Annual Report, New York Assembly Document No. 65 (1841), 13.

[5] C. P. McClelland, and C. C. Huntington, History of the Ohio Canals, 175-176.

development and reflected the slow settlement of the northern section of Ohio.[6]

Cleveland's grain trade until the early years of the 1850's was the largest on the Great Lakes, yet the Western Reserve section of Ohio, which was Cleveland's immediate hinterland, was not a grain-raising section. The conditions for the cultivation of grain were found to be unsatisfactory in the Western Reserve, and as a consequence this area turned to dairying, the manufacture of cheese, and other types of farming.[7] Cleveland's grain trade was derived from the southern counties of Ohio along the Ohio and Erie Canal, and the trade of this region had formerly gone down the Ohio and Mississippi Rivers.[8]

In the early years of the 1850's, Cleveland lost to Toledo, Chicago, and Milwaukee its preeminence as a grain center. The reasons for this change were the adoption of more diversified farming in Ohio and the movement westward of the center of grain production.[9]

---

[6]Commissioners of the Canal Fund, Annual Report, New York Senate Document No. 65 (1841), 13.

[7]Ohio State Board of Agriculture, Third Annual Report, 1848, 9; Robert L. Jones, "The Dairy Industry in Ohio Prior to the Civil War," Ohio Archaelogical and Historical Quarterly, LVI (1947), 60.

[8]Francis P. Weisenburger, The Passing of the Frontier (Carl Wittke, ed., The History of the State of Ohio, Vol. III), 61-62.

[9]The center of grain production tended to shift westward because pioneer farmers frequently concentrated on grain for their early crops for the reason that their lack of capital hampered them from buying cattle or sheep or engaging in other types of farming. As they acquired capital, they were better

In the decade of the 1840's, Toledo, Chicago, and Milwaukee accomplished the same diversion to the Great Lakes route which had first been accomplished by Cleveland in the previous decade. A wagon trade sprang up to these ports in the late 1830's and early 1840's before either canals or railroads reached them. Toledo succeeded in attracting the trade of the Wabash River Valley. This trade was carried by wagons to Fort Wayne, Indiana, and from there the grain and flour were taken by boat down the Maumee River to Toledo.[10] In the early 1840's Chicago and Michigan City, Indiana, also developed a wagon trade with this area and secured a share of its produce, but the opening of the Wabash and Erie Canal in the early 1840's quickly put an end to the competition of the latter cities.[11]

---

able to engage in other types of farming, and because of the competition of the rich new lands being brought into production farther west on the frontier, they were led to make the change. They were also led to adopt other types of farming due to reductions in their grain crop yield--land devoted too exclusively to wheat production soon became "wheated out." See C. W. Thompson, "The Movement of Wheat Growing: A Study of a Leading State," Quarterly Journal of Economics, XVIII (1904), 576; Merrill E. Jarchow, "King Wheat," Minnesota History XXIX (1948), 24-25.

[10]"Circular of Comptroller to Persons in Western States in Relation to Western Trade, September 10, 1833," in Commissioners of the Canal Fund, Annual Report, New York Senate Document No. 35 (1837), 74; Maurer Maurer, "Navigation at the Foot of the Maumee Rapids, 1815-1845," Historical Society of Northwestern Ohio, Quarterly Bulletin, XV (1943), 169.

[11]Canal Commissioners, Annual Report, Journal of the General Assembly of Indiana, December 24, 1833, 166. By 1843 the canal system from Toledo was open to Lafayette, Indiana. Lee Newcomer, "Construction of the Wabash and Erie Canal," Ohio Archaelogical and Historical Quarterly, XLVI (1937), 207.

The Wabash and Erie Canal paralleled the Wabash River and was linked at Defiance, Ohio, with the Miami and Erie Canal. The Miami and Erie Canal ran from Toledo through the western counties of Ohio to a terminus on the Ohio River at Cincinnati. It was this canal which enabled Toledo to carry off a large proportion of the grain of the southwestern counties of Ohio. This region had formerly been tributary only to Cincinnati.[12]

The diversion of grain accomplished by the Miami and Erie and Wabash and Erie Canals was largely responsible for Toledo's commercial position in 1860 as the second largest grain-receiving point in the United States. The production of grain in the vicinity of Toledo, however, had little to do with that city's commercial prominence. The Toledo Blade, in an article published in 1860, sought to explain the paradox of Toledo's commercial importance and small size (a population of only 13,784 in 1860) by noting:

> . . . the growth of Toledo . . . has been slow in comparison to some Western cities . . . owing to the fact that North Western Ohio was a densely timbered country, and could not be brought so rapidly into a producing condition as could the broad prairies of Illinois. True our great arteries . . . have pierced the forests and brought us from afar the rich harvests of the West in an ever increasing abundance; but . . . Toledo is yet to receive the great impetus derived from an improvement of a section of country tributary to this point.[13]

---

[12] McClelland and Huntington, History of the Ohio Canals, 177-179.

[13] Toledo Blade's Annual Statement of the Trade and Commerce of Toledo for the Year 1860, 24-25.

By 1860 the railroads leading into Toledo were hauling more than double the amount of grain carried to that city by its canals, but the hinterlands from which this grain was derived continued to be the same.[14] The railroads merely paralleled the older canal routes: the Dayton and Michigan Railroad paralleled the Miami and Erie Canal, and the Toledo and Wabash Railroad ran alongside the Wabash and Erie Canal.[15]

Chicago's grain trade was derived from the Mississippi River Valley and from the Rock River Valley, the river from which the latter takes its name being a tributary of the Mississippi River. In addition to these Western hinterlands, Chicago also received grain from the Illinois River Valley. This valley lay athwart the state of Illinois southwest of the city of Chicago.

The grain trade of the Rock River-Mississippi River region was diverted to Chicago--instead of continuing on down the Mississippi River to the St. Louis market--largely because of the very serious obstructions to navigation in the Mississippi River above St. Louis. These obstructions were the Des Moines and Rock Island rapids. The Des Moines, or lower rapids, were located about one hundred and fifty miles above St. Louis near the mouth of the Des Moines River at its confluence with the Mississippi River and were eleven miles long. The upper, or Rock Island rapids, were located seventy miles

---

[14] Ibid., 15-17.

[15] Ibid., 8-9. The grain trade which Toledo received from the southern Michigan counties will be discussed in connection with the grain trade of Detroit.

farther up the river at Rock Island, an island formed by the confluence of the Rock River with the Mississippi River. These rapids were thirteen miles long.[16]

At both of these rapids the cargoes of the boats navigating the Mississippi River had to be unloaded and portaged or lightered past the obstructions. (In periods of high water, boats could sometimes pass safely over the rapids.) The expense which portaging or lightering entailed made the shipment of grain downriver to the St. Louis market expensive, a factor which benefited the grain trade of Chicago.[17] The St. Louis Missouri Republican commented in 1849:

> The improvement of the Upper Mississippi Rapids we look upon as a work of vital importance to our citizens. The difficulty, particularly in a low stage of navigation, in crossing these barriers, and the consequent high rates of transportation, greatly retard our trade with the rich country bordering on this stream; and if some measure be not adopted to obviate this difficulty before the completion of the Chicago and Galena Railroad, the direction of trade will be influenced in favor of the former place, and greatly affect us in one of the most lucrative branches of our commerce.[18]

The rapids above St. Louis were not improved until 1877 when canals were completed past these obstructions by the

---

[16]Felix T. Haig, Notes on the River Navigations of North America, 30.

[17]Journal of the Proceedings of the South-Western Convention, Began and Held at the City of Memphis, on the 12th of November, 1845, 63; Proceedings of the River Improvement Convention, Held in St. Louis February 12 and 13, 1867, 38, 92.

[18]An Annual Review of the Trade and Commerce of St. Louis, for the Year 1848, Compiled for the Missouri Republican Newspaper, 2.

Federal government. Prior to that time, however, the Galena and Chicago and the Rock Island Railroads had served to divert much of the grain trade of northwestern Illinois and southern Wisconsin to Chicago.[19]

When the upper Mississippi region began to produce a grain surplus in the late 1850's, its grain trade was also largely diverted to the Great Lakes route. The regular course followed by the upper Mississippi grain trade in the late 1850's was shipment by barge or steamboat downstream to the termini of the railroads on the river, and railroad shipment from these termini to the Great Lakes ports of Chicago or Milwaukee.[20]

Chicago was also brought into competition with St. Louis when the Illinois and Michigan Canal was finally completed in 1848. This canal placed Chicago in communication with the Illinois River Valley. Before the opening of the Illinois and Michigan Canal the trade of the Illinois River Valley was tributary to St. Louis, but with the completion of the canal the surplus grain of the northern section of the valley was generally shipped to Chicago because that market was closer and transportation costs were consequently less.[21]

---

[19] Fourth Annual Review of the Commerce, Railroads, and Manufactures of Chicago, for the Year 1855, Compiled from Several Articles Published in the Daily Democratic Press, 9; Frank H. Dixon, A Traffic History of the Mississippi River System, National Waterways Commission, Document No. 11, 51-52.

[20] Eighth Census of the United States, Agriculture, clvii.

[21] James W. Putnam, The Illinois and Michigan Canal, A Study in Economic History, Chicago Historical Society's Collection, X, 102-103.

The Illinois and Michigan Canal ran through a part of the enormous prairie region which lay at the foot of Lake Michigan. This vast prairie region stretched from the Wabash River westward beyond the Mississippi River. The section of this region in northern Indiana and Illinois between the Wabash and Mississippi Rivers was called the Grand Prairie.[22] This name was probably given to the area because of its contrast with the much smaller prairies, surrounded by timber, which lay alongside and near the Great Lakes from northern New York state on westward and up through southern Wisconsin.[23] The Illinois River Valley, which in its northern part lay athwart the Grand Prairie, was one of the forested arms which stretched into that region, and the Illinois and Michigan Canal, between the Illinois River and Lake Michigan, provided an outlet by which this prairie region could ship its products to Chicago.[24]

---

[22] In 1856 a traveller and geographer of the Middle West described the country at the foot of Lake Michigan as follows, "The level area, embracing the whole country lying between . . . the Mississippi . . . and . . . the Wabash, is denominated the "Grand Prairie." The surface is undulating. . . . But the general aspect of the country is that of a dead level sea of grass. Grand Prairie does not consist of one vast tract alone--it is made up of a great number of continuous tracts, centering upon an immense plain. Long reaches of timber stretch, in narrow lines, far into that plain, while broad arms of prairie are extended out between. The central plain itself is utterly destitute of trees and shrubbery." Jacob Ferris, The States and Territories of the Great West, 207-208.

[23] Ibid.

[24] Harlan H. Barrows, Geography of the Middle Illinois Valley, Illinois State Geological Survey, Bulletin No. 15, 92-98.

The settlement of the Grand Prairie area, however, was slow. There was a lack of timber in this region for buildings, fences, and for fuel; and the tough sod and matted roots of the prairie soil required five or six yoke of cattle to break the first furrows. In addition--and probably the most serious problem of all--the area was frequently swept by prairie fires which fed on the dry prairie grass. These problems, however, were eventually overcome. A lumber trade through Chicago from the forests of northern Wisconsin and Michigan developed; plows especially designed for prairie soil were manufactured; and the slow mode of settlement of the area solved the problem of prairie fires. The open prairie was first ringed by a range of farms protected by firebreaks, and then farms were added tier by tier until the area was occupied.[25] Population density maps of Illinois, however, show that large areas of the Grand Prairie were still only sparsely settled as late as 1860.[26]

The statistics of the grain movement on the Illinois and Michigan Canal, as well as the statistics of the grain movement on the Illinois Central Railroad, which also began serving this area in the 1850's, reveal that the Grand Prairie region was the source of the enormous receipts of corn which

---

[25]Ferris, The States and Territories of the Great West, 208-211; Barrows, Geography of the Middle Illinois Valley, 77-78.

[26]Barrows, Geography of the Middle Illinois Valley, 75.

Chicago first began to receive in 1848.[27] The movement of wheat on the Illinois and Michigan Canal was far overshadowed by the movement of corn. The reason for this was that the poor drainage in the region made the area more suitable for the cultivation of corn than for the cultivation of wheat. Wheat requires a well drained soil because the roots of the wheat plant easily rot out when there is too much moisture in the soil.[28] Today the Grand Prairie region is the easternmost prairie section of the area which appears on crop production maps as the "Corn Belt" of America.[29]

The largest proportion of Chicago's wheat in 1859 came from the Rock River Valley.[30] Chicago succeeded in diverting the grain trade of the lower section of that valley by means of the Chicago and Galena and other railroads, but it was left to Milwaukee to divert the grain trade of the upper section of that region.

A Wisconsin pioneer wrote that the Rock River Valley was "a wheat-producing region . . . unsurpassed by any portion of Wisconsin and only equalled elsewhere by the celebrated Genesee Valley in the state of New York."[31] The productiveness

---

[27] Second Annual Statement of the Trade and Commerce of Chicago for the Year Ending December 31, 1859, Reported to the Chicago Board of Trade, 34.

[28] U. S. Department of Agriculture, Yearbook for 1921, 107-108.

[29] Ibid., 175-176.

[30] Second Annual Statement of the Trade and Commerce of Chicago, for the Year Ending December 31, 1859, Reported to the Chicago Board of Trade, 34.

[31] Senate Miscellaneous Documents, No. 60, 31 Congress, 1 session, II.

of the region was due to its small and well-drained fertile prairies and its rich oak-openings. The Rock River Valley lay inland some sixty-five or seventy miles from Milwaukee and was the goal of all the early internal improvement plans of the commercial men of that city.[32]

The Milwaukee and Rock River Canal Company was incorporated in 1838 in order to divert the grain and the lead of this region to Milwaukee. Owing to financial difficulties, however, only about a mile of the canal was completed, and Milwaukee continued to depend on a wagon trade to and from the area.[33]

This wagon trade was improved shortly after 1847 by the construction of two plank roads to the Rock River Valley. These roads played an important part in Milwaukee's early grain trade, but within a few years their usefulness was offset by railroads which were built over much the same routes into the regions served by the plank roads.

The first plank road to be constructed to the Rock River region was the Milwaukee and Watertown Road which was completed in 1851. This road cost $119,000 to build, but the receipts were sometimes as high as $1,300 a week. Another plank road was built after 1849 to Janesville, Wisconsin, on

---

[32]Increase A. Lapham, Wisconsin, its Geography and Topography, 44-47.

[33]Ibid., 45; Report of a Committee Appointed by the Trustees of the Town of Milwaukee, Relative to the Commerce of that Town, and the Navigation of Lake Michigan (1842), 3-4.

the Rock River. This road led to a lower section of the Rock River Valley, and because of the greater distance to Milwaukee it was not so great a success as the Watertown Road.[34]

In the more southern section of the Rock River Valley Milwaukee was faced by the competition of Chicago and of the two Wisconsin ports, Racine and Southport (now Kenosha). These two ports, located on the Lake Michigan shore between Milwaukee and Chicago, began the construction of railroads to the Rock River Valley in the late 1830's and early 1840's, and both also developed a large wagon trade with that area. Because of their inadequate harbor facilities, however, neither one of them was able to rival seriously the grain trade of Chicago and Milwaukee.[35]

Milwaukee's earliest railroads, the Milwaukee and Mississippi and Milwaukee and Watertown, both built in the early 1850's, were also directed to the Rock River Valley.[36] Another goal of Milwaukee's railroads was the Mississippi Valley, beyond the Rock River Valley, and by the late 1850's the Milwaukee and Prairie du Chien, and Milwaukee and La Crosse Railroads had reached that river and had begun to divert a portion

---

[34]Edward D. Holton, "Commercial History of Milwaukee; Opening of the Chamber of Commerce," Wisconsin State Historical Society, Report and Collections, IV, 275.

[35]Lapham, Wisconsin, its Geography and Topography, 44-45.

[36]Annual Report of the Commerce, Manufactures, Banking Business, and Railroad System of Milwaukee, for the Year 1855, Prepared for the Board of Trade, 15-23.

of the grain trade of the upper Mississippi Valley to Milwaukee.[37]

Milwaukee's position in 1860 as the fourth largest grain receiving point in the United States was based on the grain which Milwaukee received from the Rock River and Mississippi River regions. The continued improvement of Milwaukee's nearby forested hinterland after 1860, however, made that city in 1870 second only to Chicago in the United States as a grain receiving point.[38]

In general, the development of the grain trade at Milwaukee, Chicago, Toledo, and Cleveland reflected the gradual diversion, stage by stage, of Western trade from the Mississippi River route to the Great Lakes route. At other ports on the Great Lakes, however, the development of the grain trade reflected the gradual settlement of the Great Lakes area. At these ports the growth of the grain trade was relatively slow and depended almost entirely on the surplus grain produced nearby. These ports were not connected by canals or railways with the southern part of the East North Central area. The ports belonging to this category were the Ohio ports of Huron, Milan--which was connected in 1839 by a ship canal to Lake Erie--Ashtabula, and Fairport; the Michigan ports of Detroit, Monroe, and St. Joseph; the northern Wisconsin ports of Sheboygan, Manitowoc, and Green Bay; and the Pennsylvania port of Erie.

---

[37]Henrietta M. Larson, The Wheat Market and the Farmer in Minnesota, 1858-1900, 42-43.

[38]Schmidt, "The Internal Grain Trade of the United States," Iowa Journal of History and Politics, XIX (1921), 451.

Of this group Detroit was by far the largest exporter of wheat and flour, and that city's leadership was based on the fertile prairie-studded land of the broad belt of the southern counties of the state of Michigan.[39] Monroe, a port on the Detroit River some forty miles below Detroit, was also an outlet for this region, but Monroe was not so serious a competitor of Detroit for the trade of this region as was Toledo. In 1836 the Erie and Kalamazoo Railroad, one of the earliest railroads of the Middle West, was built from Toledo into this region. The main line of this railroad extended some thirty-five miles to Adrian, Michigan, in Lenawee County.[40] In the following decade, after the opening of the Wabash and Erie Canal, Toledo also received a portion of the surplus grain of the more western region of the southern counties of Michigan. The grain from this region was carried

---

[39] Senate Executive Documents, No. 23, 31 Congress, 2 session, 601; Albert F. Butler, "Rediscovering Michigan's Prairies," Michigan History, XXXI (1947), 277.

[40] Clark Waggoner, History of the City of Toledo and Lucas County, Ohio, 400. An account-book, 1838-1841 of the firm of Spafford and Smith of Tecumseh, Michigan, offers information on the early trade from this region. This document is in the possession of Professor Verner W. Crane of the University of Michigan. Spafford and Smith dealt mainly in flour with only an occasional shipment of wheat and sent their consignments to Toledo via the Palmyra and Jacksonburgh Railroad and the Erie and Kalamazoo Railroad. Their shipments went forward to various Toledo firms for delivery to consignees in Buffalo, Rochester, Utica, Troy, Brooklyn, and New York City. The Tecumseh firm charged three to five cents a barrel for their marketing services with lower rates charged for larger shipments.

over a plank road from Sturgis, Michigan, near the Indiana state line, to Fort Wayne, Indiana, and was there loaded on canal-boats for shipment to Toledo.[41]

Most of the grain of the western counties of southern Michigan, however, was tributary not to Toledo but to St. Joseph, a port on Lake Michigan. The location of this port was at the outlet of the St. Joseph River, a river whose meandering course led through southern Michigan and northern Indiana and was navigable by steamboat for sixty miles inland from Lake Michigan. Steamboats especially adapted for the St. Joseph River trade operated up and down the river.[42]

The construction of railroads through the southern Michigan counties, however, resulted in changes which all but destroyed the grain trade not only of St. Joseph but of Monroe as well. After 1837 two railroads were begun by the state of Michigan which ran through the southern counties of that state. These two railroads were the result of the state of Michigan's comprehensive but ill-fated plan of internal improvements. One line--the southern line--was planned as a route from Monroe to New Buffalo, on Lake Michigan. The other line--the central road--was to extend from Detroit through Ypsilanti, Ann Arbor, and Jackson to St. Joseph.

---

[41]Elbert J. Benton, "The Wabash Trade Route in the Development of the Old Northwest," John Hopkins University, Studies in Historical and Political Science, XXI (1903), 101.

[42]Commissioners of the Canal Fund, Annual Report, New York Senate Document No. 35 (1837), 74; Otto M. Knoblock, "Early Navigation on the St. Joseph River," Indiana Historical Society, Publications, VIII (1925), 194.

The sections of these railroads which had been completed by the state were sold to private individuals in 1846.[43]

Soon thereafter, in 1849, the management of the Michigan Southern Railroad changed the main eastern terminus of the line to Toledo and thereby cut off Monroe's grain trade. In the same fashion the grain trade of St. Joseph was all but destroyed by the Michigan Central Railroad, which changed its western terminus from St. Joseph to Chicago, reaching the latter city in 1852.[44] After the route to Chicago was completed the Michigan Central cut rates below those offered by the river steamboats operating from Niles, Michigan, to St. Joseph, and gave lower relative rates from Niles to Chicago than from the rest of Michigan. This type of competition ruined St. Joseph's grain trade.[45] Detroit's grain trade, however, was benefited by the Michigan Central Railroad. By 1870 Detroit had crept up to the position of the fifth largest grain receiving point in the United States. In that year the receipts of the larger primary grain markets were as follows:[46]

---

[43]Hannah E. Keith, "An Historical Sketch of Internal Improvements in Michigan," Michigan Political Science Association, Publications, IV (1900), 31, 36.

[44]Waggoner, History of the City of Toledo, 406.

[45]John Thompson, J. W. Brooks, and Solomon Drullard, Opening Remarks of John Thompson, Esq., on behalf of the Railroads, against a Pro Rata Law; and the testimony of J. W. Brooks, Esq., before the Select Committee of the [New York] Assembly; also the testimony of Solomon Drullard, Esq., General Freight Agent New York Central Railroad, 12.

[46]Schmidt, "The Internal Grain Trade of the United States," Iowa Journal of History and Politics, XIX (1921), 451.

	Total grain, including flour reduced to its equivalent in bushels
Chicago	61,315,593
Milwaukee	24,857,871
St. Louis	24,313,791
Toledo	23,714,510
Detroit	14,045,868
Cincinnati	8,769,811

The year 1870, however, was the high mark of Detroit's grain trade; in the succeeding years the grain trade of that city slowly declined as more diversified farming began to be practised in the southern Michigan counties.

II

The opening of the Great Lakes - Erie Canal route confronted the Mississippi River with a competitive route by which the grain and flour of the East North Central area might be shipped to the New England - Middle Atlantic states market. One could measure accurately the progress of the diversion of trade via the new route if he were able to compare the shipments of grain and flour to the Eastern market for a series of years from New Orleans, Buffalo,and Oswego. This measurement, however, can not be made with the thoroughness which would be desirable because of the lack of statistics respecting the grain and flour shipments from New Orleans. There are reliable statistics from 1835 to 1860 of the grain and flour receipts at New Orleans, Buffalo, and Oswego, but as the receipts at New Orleans served to supply the southern market for breadstuffs and also the New

England - Middle Atlantic states and foreign markets, a comparison of the receipts at the three cities fails to indicate the diversion accomplished by the new route.[47]

For the years 1842 to 1851, however, statistics of the shipment of flour from New Orleans to the north Atlantic ports of the United States and to foreign markets are available and consequently we are able to indicate the effectiveness of the competition of the new route for those years:[48]

	New Orleans, flour shipments in bbls. (216 lbs.) to foreign ports and north Atlantic ports of the United States.	Eastward flour shipments in bbls. (216 lbs.) through Buffalo and Oswego.
1835		224,304
1836		233,745
1837	not	192,817
1838	available	388,010
1839		467,836
1840		865,920
1841		956,048
1842	252,479	882,129
1843	296,561	1,201,464
1844	249,969	1,325,841
1845	234,018	1,255,069
1846	493,277	1,909,312
1847	1,273,406	2,679,180
1848	426,650	2,020,501
1849	712,259	2,024,810
1850	102,452	1,977,134
1851	426,283	2,209,130

---

[47] New Orleans, Buffalo and Oswego grain and flour receipts are given in the appendix to the present study.

[48] Hunt's Merchants' Magazine, VII, 391; IX, 570; XI, 419; XII, 370-372; XIX, 325; XXI, 554; XXIII, 558; XXV, 605; Auditor of the Canal Department, Annual Report on the Tolls, Trade and Tonnage of the Canals of the State, New York Assembly Document, No. 133 (1876), table no. 26. The exports of New Orleans to foreign ports must be included for a fair comparison because part of the grain and flour receipts

These statistics show a steady increase in the shipments of flour through the Buffalo and Oswego gateways in keeping with the progressively greater surplus of grain produced in the West; the shipments through New Orleans, however, do not show such a steady growth. The erratic variations in the New Orleans statistics reflect the increasing dependence of the grain trade of that city on the uncertain foreign markets. The marked increase in the volume of shipments in 1847 was due to a decrease in yield of the potato crop in that year both in the eastern United States and in Europe. This failure of the potato crop, occasioned by the prevalence of the potato rot, resulted in an increased demand for grain.[49]

The Pennsylvania canal system also deserves to be considered as a route from the West to the Eastern market for breadstuffs even though the diversionary affect of this outlet was negligible. The through route of the Pennsylvania canal system--called the Main Line--was opened in 1834 between Pittsburg, on the Ohio River, and Philadelphia.[50] This mixed canal and railroad route was an eastward extension of the Mississippi River system, just as the Erie Canal was an

---

at Buffalo and Oswego served to supply the export trade. Further evidence of this diversion to the Great Lakes - Erie Canal route may be shown by a comparison of the receipts at the north and south termini of the canal system of Ohio. These figures are given in the appendix to the present study.

[49]Bidwell and Falconer, History of Agriculture in the Northern United States, 374-376; American Institute of New York, Transactions, 1847, 573, 600.

[50]Canal Commissioners of Pennsylvania, Annual Report Made to the Governor, December 2, 1834, 3.

eastward extension of the Great Lakes. The most difficult portion of the mountainous country traversed by the Main Line was overcome by means of a forty-one mile long portage railway; and the Main Line also included an eighty-one mile long railroad from the Susquehanna River to Philadelphia.[51] Because of the broken character of the Main Line route the cost of transportation on it was excessively expensive. Portable canal-boats began to be used in 1842 to cut down the cost of transhipment, but even with that improvement the Pennsylvania Main Line was able to serve as a through route only for the grain and flour of the East North Central area which originated near Pittsburg, the western terminus of the Main Line.[52] The limitations of Pennsylvania's canal system as a through route can be seen by a comparison of the statistics of the eastward canal shipments from Pittsburg, Buffalo, and Oswego. In 1849, a typical year, these shipments were as follows:[53]

	Wheat bushels 60 lbs.	Flour barrels 216 lbs.
Pittsburg	6,300	139,202
Buffalo	4,026,000	1,216,503
Oswego	1,003,462	808,307

[51] See Avard L. Bishop, "The State Works of Pennsylvania," Connecticut Academy of Arts and Sciences, Transactions, XIII (1907), 149 ff.

[52] Louis C. Hunter, "Studies in the Economic History of the Ohio Valley," Smith College, Studies in History, XIX (1933-34), 92.

[53] Pennsylvania Board of Canal Commissioners, Annual Report with Accompanying Documents for the Year Ending November 30, 1849, 66; New York Assembly Document, No. 133 (1876), table no. 26.

Neither Philadelphia's Main Line of canal and railroad nor Baltimore's Chesapeake and Ohio Canal (the latter canal was never completed beyond the mountains to the Ohio River, owing to engineering and financial difficulties)[54] was able to match the success of the Erie Canal. The reason why the Erie Canal was such an outstanding success was that New York state had the level route of the Hudson River Valley and Mohawk River Valley to the West. This level route, as it required very little lockage, was ideally suited to the construction and operation of a canal. The other Eastern seaboard states, cut off from the Western United States by the Appalachian and Allegheny mountain ranges, did not enjoy the advantages of New York. However, in the 1850's, as will be noted below, the Pennsylvania and the Baltimore and Ohio Railroads (built over much the same routes as the earlier canals) were successful in providing a cheap transportation service between the East and West.[55]

---

[54]Seymour Dunbar, A History of Travel in America, III, 816; Whitford, History of the Canal System of the State of New York, 1393 ff., 1377 ff.

[55]p. 92.

CHAPTER II

THE TRANSPORTATION AND HANDLING OF GRAIN ON THE GREAT LAKES

The grain and flour which were brought to the various ports on the Great Lakes were generally carried eastward by unscheduled sail vessels--sloops, schooners, and brigs; very few ships (i. e., square-rigged vessels) were used. More schooners were used than any other type of craft because they carried enough sail and their fore and aft rigging could be manned by fewer men than were required for a square-rigged vessel.[1]

Until 1840 the sail vessels used in the trade on the Great Lakes averaged about 125 tons and could carry an average of about 4,000 bushels of bulk grain.[2] When Henry M. Kinne, of Buffalo, built the Wyndham in 1839--the first schooner on the Great Lakes with a capacity to carry 10,000 bushels--his

---

[1]"In 1838 the lake tonnage consisted of 15 steamers, 3 ships, 3 brigs, and 52 schooners, many of which were quite small. In 1845 there were 52 steamers, 8 propellers, 50 brigs, and 270 schooners, with an aggregate tonnage of 76,000 tons. In 1846 there were 62 steamboats, 18 propellers, 1 barque, 58 brigs, and 313 schooners and sloops." Report of the Harbor Committee in Relation to an Increase in Harbor Facilities at the City of Buffalo (1847), 34.

[2]Henry P. Smith, History of the City of Buffalo and Erie County, II, 193.

commercial vision was seriously doubted; but vessels with the capacity of the Wyndham became the general rule in the period of rapid growth of the grain trade which occurred in the succeeding decade. By 1848 the sail vessels built on the Great Lakes had a capacity of 12,000 bushels.[3] Thereafter the increase in vessel capacity reflected the growth of the grain trade.[4] The vessels built in 1850 could carry 15,000 bushels; in 1857 this figure was increased to 25,000 bushels; in 1863 to 30,000 bushels; in 1868 to 40,000 bushels; in 1870 to 50,000 bushels; and in 1873 to no less than 70,000 bushels.[5]

On their eastern trips the sail vessels on the Great Lakes carried the grain and animal products of the West to Buffalo and Oswego, and they returned with coal, salt, plaster and other heavy cargoes. For the most part, sail vessels were owned by one individual or by several individuals who held shares, and usually the captains of the vessels were part-owners of the vessels they commanded.[6] More vessels were owned at Buffalo and at Cleveland than at any other ports on the Great Lakes.[7]

---

[3] Ibid.

[4] Alonzo Richmond, Tolls and Transportation. A Free Canal Essential to the State's Prosperity: and the Water Route Demonstrated to be Superior to the Railways, 3.

[5] Ibid.

[6] Report of the Harbor Committee in Relation to an Increase in Harbor Facilities at the City of Buffalo, 46-47.

[7] Ibid.

The sail vessels were able to make the trip from Chicago to Buffalo in eight to ten days if the wind held, but steamboats, using sails and steam-driven paddle wheels, could make the trip in about half that time.[8] The shallow draught steamboats, however, were seldom used in the grain trade because the much deeper draught sail vessels, built with deep holds, could carry bulk grain and flour barrels much more cheaply. Steamboats on the Great Lakes primarily served the passenger and fine freight trade.[9]

In the 1840's, however, the sail vessels on the Great Lakes began to be met by the competition of a new type of steam-driven vessel: the propeller, or screw-propeller, as it was generally called, a vessel driven by a submerged propeller wheel rather than by the paddle wheels which drove the conventional steamboat. The position of the engine in the propeller type of vessel--aft and below decks--was different from the above-decks position of the engine of the steamboat. Because of the lower center of gravity due to the position of the engine it was possible to design and construct propellers with deep holds which were well adapted to carrying bulk grain and flour barrels.[10] The construction of propellers began

---

[8]American Cheap Transportation Association, Proceedings of the National Convention Held at Association Hall, Richmond, Virginia, Commencing on the 1st December, 1874, 62.

[9]Elizabeth F. Baird, "Reminiscences of Life in Territorial Wisconsin," Wisconsin State Historical Society, Collections, XV, 251.

[10]Smith, History of the City of Buffalo, II, appendix, 74; Haig, Notes on the River Navigations of North America, 42.

on the Great Lakes at about the same time that this type of vessel was introduced on the Atlantic Ocean. The first propeller constructed on the Great Lakes was launched at Oswego in 1841. This vessel was the Vandalia, a craft of about 140 tons which was also equipped with supplementary sloop-rigged sails.[11]

By 1850 there were fifty propellers in service on the Great Lakes, and by that time this type of vessel had begun to be a serious competitor of the sail vessels in the carriage of grain and flour.[12] Propellers were unable to match the low freight rates which sail vessels charged, but their greater speed served as a compensation for their higher rates. The prompt delivery of grain to the grain markets at Buffalo or Oswego--so as to take advantage of prevailing grain prices--very often offset the differential between the freight rates of propellers and sail vessels. Propellers never suffered from the vagaries of the wind.

Freight rates on grain on the Great Lakes continuously fluctuated throughout each season of navigation and from one year to the next because they were determined by the conditions of supply and demand. Lowest in the summer, freights advanced in the fall of the year when the new crops were harvested.[13]

---

[11] New York Assembly Document No. 31 (1900), 196; W. W. Goforth, ed., "Ocean and Inland Water Transport," McGill University, Economic Studies, No. 2 (1925), 6.

[12] New York Assembly Document, No. 31, (1900), 196.

[13] Report of the Select Committee on Transportation Routes to Seaboard, Senate Reports, No. 307, 43 Congress, 1 session, II, 201.

Before 1860 the freight from Chicago to Buffalo ranged from ten to fifteen cents per bushel, with propeller rates generally several fractions of a cent higher than sail vessel rates.[14] The larger vessels, both sail and propeller, built after 1858, carried grain from Chicago to Buffalo for about four to seven cents per bushel.[15]

Propellers were built to larger capacities than sail vessels in order to offset their higher operating expenses. In 1871 the practice was begun of towing a barge loaded with grain behind the propeller. The propeller and barge together were able to carry 100,000 to 120,000 bushels of grain each trip. Within a few years the number of consort barges was increased, and 200,000 to 250,000 bushels could be taken east on one trip.[16] The expedient of employing barges was temporarily used at this time because obstructions to navigation in the Detroit River restricted the draught of propellers below the minimum capacities which were commercially profitable. Despite the advantages of steam propulsion, however, the

---

[14]Patrick Barry, The Theory and Practice of the International Trade of the United States and England, and of the Trade of the United States and Canada; with Tables of Federal Currency, Canadian Currency and Sterling, Exchange Formulas, etc., 158; New York Produce Exchange, Annual Report of the Board of Managers for 1873, 400.

[15]American Cheap Transportation Association, Proceedings of the National Convention Held at Association Hall, Richmond, Virginia, 62.

[16]Richmond, Tolls and Transportation, 4.

number of sail vessels on the Great Lakes exceeded steam-driven vessels until 1884.[17]

Almost all of the propellers on the Great Lakes were owned by transportation companies. These companies also owned fleets of canal-boats on the Erie Canal and had freight agents at New York City, Buffalo, and all the important Western Lake ports. The propellers owned by these companies carried manufactured goods from the East and brought back grain and animal products from the West. Because these companies owned both canal-boats and propellers on the Lakes they were able to offer through bills of lading on shipments between the East and West.

The transportation companies on the Great Lakes originated in the late 1820's and early 1830's. At that time they were merely affiliations of owners of canal-boats on the Erie Canal and owners of vessels on the Great Lakes. During the decade of the 1840's some of these affiliations developed into companies and began to use propellers instead of sail vessels.[18] In 1854 these companies were incorporated under a law of incorporation passed by the state of New York.[19]

---

[17] New York Assembly Document, No. 31 (1900), 198.

[18] See p.63 ; Richmond, Tolls and Transportation, 13.

[19] Section 25 of Chapter 232, Laws of 1854, "An Act for the Incorporation of Companies Formed to Navigate the Lakes and Rivers." See also Committee on Commerce and Navigation, Majority Report on Bill to Incorporate Companies to Navigate Canals, etc., of this State, New York Assembly Document, No. 16 (1854), 3-7.

Altogether there were five large transportation companies which operated a transportation service over the Great Lakes and the Erie Canal. In 1858 the two largest of these companies, each originally incorporated at a capitalization of $900,000, were the Western Transportation Company, which owned fourteen propellers, two sail vessels, and 164 canal-boats on the Erie Canal, and the American Transportation Company, which owned nineteen propellers, one steam tug, and 182 canal-boats on the Erie Canal. The other transportation companies were the Northern Transportation Company, the Northern Transportation Line, and the Old Oswego Line.[20]

II

The introduction of the propeller was the first significant change in the transportation of grain on the Great Lakes, but another change, the introduction of a mechanical system of unloading and handling bulk grain, was introduced at about the same time.

The grain elevator system of handling bulk grain was introduced on the Great Lakes in 1843 by the commercial men of Buffalo. After the introduction of this system the grain cargoes of the ships which tied up at Buffalo or Oswego were mechanically unloaded and passed into huge grain warehouses either to be stored there or to be mechanically transferred into the holds of waiting canal-boats.

---

[20]State Engineer and Surveyor, Annual Report on Companies Navigating the Lakes and Rivers, New York Assembly Document, No. 183 (1859), 2 ff.

The problem of handling bulk grain, to which the grain elevator system was an answer, first became serious in Buffalo toward the end of the decade of the 1830's. In 1839 Buffalo received 1,117,262 bushels of wheat which marked the first time that receipts of wheat at Buffalo had exceeded the million-bushel mark.[21]

In the same year Buffalo received 294,125 barrels of flour, but the flour barrels received in Buffalo did not pose a serious handling problem because barrels were rolling freight and could be manipulated with relative ease. The bulk wheat, however, had to be hoisted in open barrels from the holds of the vessels tied up at the docks and then measured or weighed. After the cargo was found to correspond with the bill of lading, it was then either carried on men's backs into warehouses where it was temporarily stored, or it was taken directly to a waiting canal-boat.[22] This method of transfer was both arduous and time-consuming. One of the early Lake captains recalled that it took four or five days to unload a 6,000-bushel cargo by this method.[23] Another drawback to this manner of handling

---

[21]U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, IV (January, 1900), 2015. These statistics differ from Buffalo's shipments of grain on the Erie Canal because part of the wheat was milled into flour before being shipped eastward on that canal.

[22]Buffalo Board of Trade, Annual Statement of the Trade and Commerce of Buffalo for the Year 1855, 10-11; Smith, History of the City of Buffalo, II, 215.

[23]Smith, History of the City of Buffalo, II, 215, note 1.

bulk grain was that it could not go on when the weather was bad because the work was done in the open and moisture damaged the grain.[24] At such times Buffalo harbor was crowded with ships waiting to unload.

In the early days of the grain trade on the Great Lakes wheat was often shipped in bags, as was the custom on the Mississippi River until the late 1860's. This solution of the problem, however, did not avoid the tedium and expense of weighing or measuring the bags after they were filled. Furthermore, it increased the cost of loading a vessel because bagged grain had to be carried or hoisted aboard, whereas bulk grain could be spouted down into the hold of a vessel from the upper stories of a grain warehouse. Another disadvantage of the shipment of grain in bags was that it was necessary to keep a careful count of the bags because they were frequently stolen. The most persistent offenders were the sailors on the grain schooners,who used the grain bags to make their clothes.[25]

The shipment of grain in bulk, therefore, was preferable to the shipment of grain in bags except for the one feature that the unloading of bulk grain posed more of a problem than the unloading of bagged grain. As early as the late

---

[24] Ibid., 215.

[25] Grain bags cost 2 to 4 cents in the West--an appreciable amount when four or five thousand might be required for one cargo. George W. Stephens, "Some Aspects of Early Intersectional Rivalry for the Commerce of the Upper Mississippi Valley," Washington University, Studies, Humanistic Series, X (1923), 287, footnote 35; Smith, History of the City of Buffalo, II, 215.

1830's the grain warehousemen of Buffalo began to see the need for some mechanical solution of this unloading problem. But long before the problem arose the basic mechanical devices for its solution had already been invented.

Oliver Evans (1755-1819), the inventor of the elevator and conveyor and a number of other devices, first used his inventions sometime after 1780 when he completely mechanized his brothers' flour mills in Wilmington, Delaware. Evans later explained these devices in detail in The Young Mill-Wright & Miller's Guide, a handbook which he published in 1795. This handbook quickly became the standard work on all phases of milling, and in the 1830's it was still widely known and used. Evans' devices, however, were not generally put into practice because of the expense involved in their introduction.[26]

The elevator and the conveyor, the two inventions of Evans which solved the unloading problem in Buffalo, were both adaptations of the principle of the endless belt. The difference between the two devices was that the conveyor moved horizontally, while the elevator, an endless belt with buckets attached, moved vertically. By the use of these two devices grain could be unloaded, raised to a weighing station, and then conveyed to a storage bin, or directly spouted down by the force of gravity in the course of the loading process.

---

[26] Tenth Census of the United States, III, 561; Carl W. Mitman, "Oliver Evans," Allen Johnson and Dumas Malone, eds., Dictionary of American Biography, VI, 208-209. See also the biography of Evans by Greville Bathe, Oliver Evans; a Chronicle of Early American Engineering (1935).

The "leg" of the elevator, which was thrust into a cargo of grain in the course of unloading, could easily be covered or enclosed in some manner so that the unloading could go on despite the weather.

The first elevator to be used in Buffalo was a horse-powered elevator set up by Mahlon Kingman in conjunction with his grain warehouse in 1837. Kingman's elevator, however, was not a commercial success.[27] In 1842 Kingman advised Joseph Dart, another Buffalo warehouseman who was planning to build a steam-operated elevator, that "Irishmen's backs are the cheapest elevators ever built."[28]

Dart, however, went ahead with his plans, and his elevator, which was technically superior to Kingman's, was an instant commercial success. After the opening of Dart's elevator in 1843 the grain warehousemen both in Buffalo and Oswego adopted the new mechanical system of handling.[29]

Meanwhile this mechanical system of handling was also coming into favor in the Western Lake ports. A horse-powered elevator was set up in Toledo in 1838, and several horse and mule powered elevators were set up in Chicago in 1841-42.[30]

---

[27]Joseph Dart, "The Grain Elevators of Buffalo," Buffalo Historical Society, Publications, I, 401.

[28]Ibid.

[29]Ibid., 401; Buffalo Board of Trade, Annual Statement of the Trade and Commerce of Buffalo, for the Year Ending December 31, 1863, 35.

[30]Waggoner, History of the City of Toledo, 460-465; Alfred T. Andreas, History of Chicago, I, 580.

In Chicago the horse or mule was stationed on the roof of the warehouse. The first steam-powered elevator came into use in Toledo in 1847, and in Chicago in 1848. Milwaukee's first elevator was built in 1845, and the first elevator in Detroit--a steam-powered elevator--was constructed by the Michigan Central Railroad in 1851.[31]

After the introduction of Evans' devices the association of the grain elevator and the grain warehouse became so common that the grain warehouses began to be called simply "grain elevators." The "grain elevators," however, did more than unload grain. They were built with huge bins for the storage of grain and often were equipped with devices for the cleaning and screening of grain. Grain was stored in the elevators pending shipment or while the owner of the grain was waiting for an improvement in the market. The elevators were built so that the storage bins were located high enough to facilitate the unloading of grain by the action of the force of gravity.

Grain elevators solved the problem of handling and storing bulk grain in Buffalo and Oswego, but they were only a partial solution to the handling problem in the Western ports. The Western ports received their grain in smaller lots than did Buffalo and Oswego, and the separate storage of each of the small lots was both inconvenient and expensive. In order to solve this storage problem and to provide a common terminology

---

[31] Ibid.; Holton, "Commercial History of Milwaukee; Opening of the Chamber of Commerce," Wisconsin State Historical Society, Report and Collections, IV, 261; Silas Farmer, The History of Detroit and Michigan, I, 891.

for the various qualities of grain, the Boards of Trade in Chicago, Milwaukee, and Toledo established standard grades of grain and adopted systems of paid inspectors to grade bulk grain.[32] The lots of grain of particularly high quality were exempted from these systems and continued to be stored separately, but all other separate lots of grain of the same grade were stored together. The Chicago Board of Trade established its system of inspection in 1856-7; Milwaukee established a similar system in 1858; and Toledo's system came into operation in 1863-4.[33] These systems of inspecting and grading were not needed in Buffalo and Oswego and consequently were not adopted there.

A famous English visitor to the United States in 1861 felt that the grain elevators on the Great Lakes symbolized the vast richness of the New World. He wrote:

> I was at Chicago and at Buffalo in 1861. I went down to the granaries and climbed up into the elevators. I saw the wheat running in rivers from one vessel into another, and from the railroad vans up into the large bins on the top stories of the warehouses--for these rivers of food run up hill as easily as they do down. I saw the corn measured by the forty-bushel measure with as much ease as we measure an ounce of cheese and with greater rapidity. I ascertained that the work week went

---

[32] Guy A. Lee, "History of the Chicago Grain-Elevator Industry, 1840-1890," Harvard University, Graduate School of Arts and Sciences, Summaries of Theses, 153; Guy A. Lee, "The Historical Significance of the Chicago Grain Elevator System," Agricultural History, XI (1937), 20.

[33] Charles H. Taylor, History of the Board of Trade of the City of Chicago, I, 241; Larson, The Wheat Market and the Farmer in Minnesota, 71; Toledo Blade's Seventh Annual Statement of the Trade and Commerce of Toledo for the Year Ending December 31st, 1864, 5.

> on week-day and Sunday, day and night, incessantly--rivers of wheat and rivers of maize ever running. I saw the men bathed in corn as they distributed it in its flow. I saw bins by the score laden with wheat, in each of which bins there was space for a comfortable residence. I breathed the flour and drank the flour and felt myself to be enveloped in a world of breadstuff. And then I believed, understood, and brought it home to myself as a fact that here in the corn lands of Michigan, and amid the bluffs of Wisconsin, and on the high table plains of Minnesota, and the prairies of Illinois had God prepared the food for the increasing millions of the Eastern world as also for the coming millions of the Western. . . . I began then to know what it was for a country to overflow with milk and honey, to burst with its own fruits and be smothered by its own riches.[34]

It was on the Great Lakes that Evans' devices were first put into widespread and practical use. The first elevators built in Europe were built by Robert Dunbar, the designer of Dart's elevator and of many other elevators on the Great Lakes.[35] The first elevators built along the Mississippi River grain route were built in 1865 in St. Louis and in 1868 in New Orleans.[36] These elevators were built in imitation of the elevators on the Great Lakes in order to gain the advantages of the inexpensive handling of grain which had been demonstrated on the Great Lakes. The lack of such an elevator system on the Mississippi River grain route before the Civil War was one of the handicaps which held back that route in its competition with the Great Lakes route.

---

[34]Anthony Trollope, North America (1862), I, 231-232.

[35]Carl W. Mitman, "Robert Dunbar," Allen Johnson and Dumas Malone, eds., Dictionary of American Biography, V, 506-507.

[36]Senate Report, No. 307, 43 Congress, 1 session, II, 864; Wyatt W. Belcher, The Economic Rivalry between St. Louis and Chicago, 1850-1880, 171.

CHAPTER III

THE DEVELOPMENT OF THE MARKETING SYSTEM OVER THE GREAT LAKES ROUTE, 1829-1860

The diversion of the grain and flour trade of the East North Central area from the Mississippi River route to the Great Lakes - Erie Canal route was made possible by the cheapness of the cost of transportation over the latter route. It was this cheapness of transportation that enabled the new route to compete with the older route.

But the mere fact of the ability of the new route to compete with the older route did not by itself guarantee that a large-scale diversion of trade to the new route would take place. The factor which was largely responsible for bringing about the large-scale diversion to the new route was the dissatisfaction of Western farmers with the marketing system afforded by the Mississippi River route, but ironically the Western farmers were themselves partly to blame for the shortcomings of the marketing system of which they complained. In the early stages of the diversion of trade to the Great Lakes the new route afforded an organized system for marketing agricultural commodities whereas the Mississippi River route did not afford such a system.

The development of an organized marketing system on the Mississippi River was held back because the river system was a free avenue open to anyone who wished to build a rude boat, load it with produce, and float the produce to market. Regular dealers were discouraged from entering the produce business on the river system because of the ease with which irregular dealers could compete with them. Consequently, the grain trade on the Mississippi River system was mostly conducted by the farmers themselves, and this continued to be the practice until well into the decade of the 1840's.[1]

Under this system of marketing, an individual farmer or a farmer and his neighbors constructed a flatboat for the trip down the river. These boats were generally built for use in the spring of the year because at that time the rivers were at a high level and a larger cargo could be carried.[2] The appearance of the flatboats in use on the Mississippi River system in the decade of the 1840's was described by a contemporary as follows:

> They are simply an oblong ark, with a roof slightly curved from the center to shed rain. They are generally about fifteen feet wide, and from fifty to eighty, and sometimes an hundred feet in length. The timbers of the bottom are massive beams, and they are intended to be

---

[1] Louis B. Schmidt, "Internal Commerce and the Development of National Economy before 1860," Journal of Political Economy, XLVII (1939), 801, note 5; Issac Lippincott, "Internal Trade of the United States, 1700-1860," Washington University, Studies, IV (1916), 95-96.

[2] See the excellent account of Mississippi River trade in U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1888, 178-234.

> of great strength and to carry a burden of from two to four hundred barrels.[3]

When the spring rise came in the rivers, flatboats from all sections of the West began the trip to market. The flatboats stopped wherever there was a market for produce, but large numbers of them were forced to proceed down the river to New Orleans because the best market for ham, bacon, corn, wheat, and flour was in the deep South. After the cargoes of the flatboats were disposed of, the flatboats themselves were broken up and sold for lumber, and the farmer-merchants then returned home.

For several reasons the farmers in the West did not like this system of marketing. One reason was that the flatboats from all over the West arrived at the markets at the same time with their products and this served to depress prices. Another difficulty was that the farmer-merchants found that their marketing trips were arduous and that they lost valuable time which they needed for their spring planting.[4] The farmers of Knox County, in southern Indiana, who shipped their products to market on the Wabash River, summed up their complaints in 1844 as follows:

> The uncertainty of the time of shipment, and the short period during each season [of the spring rise of the Wabash River], have prevented the merchants of this country embarking as regular dealers in the produce

---

[3] John Banvard, Description of Banvard's Panorama of the Mississippi River, 2.

[4] Journal of the Ohio House of Representatives, January 3, 1822, 20; Thomas Ford, A History of Illinois, from Its Commencement as a State in 1818 to 1847, 98-99; Frederick Gerhard, Illinois as It Is, 67-68.

> business. The consequence has been, the farmers have, much to their injury, been compelled to ship their own products . . . and too often does it happen that they lose one year's cropping in disposing of the cropping of the previous year, and that, too, at a ruinous sacrifive, both in their health and their fortunes.[5]

Although merchants on the Mississippi River route unless they used flatboats were discouraged by the competition of the farmers from entering the produce business, the development of shallow draught steamboats on the upper Ohio which were good freight carriers enabled regular dealers to compete in the produce trade.[6] The owners and agents of these boats became dealers in agricultural commodities, and in the 1840's this method of marketing began to replace the flatboat trade on all the rivers of the Mississippi River system.[7] Since shallow-draught steamboats could not be profitably used on the lower Mississippi River, their cargoes were transhipped at Cincinnati and St. Louis to the larger steamboats used in the downriver trade to the South.[8]

The slowness with which a regular marketing system was developed on the Mississippi River route and the inadequacies

---

[5]Senate Document, No. 241, 28 Congress, 1 session, 3.

[6]Ford, A History of Illinois, 99.

[7]U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1882, appendix, 166; Louis C. Hunter, Steamboats on the Western Rivers, An Economic and Technological History, 83-84, 353-356.

[8]Felix T. Haig, Notes on the River Navigations of North America, 55; A. B. Chambers, Memorial of the Citizens of St. Louis, Missouri to the Congress of the United States, Praying an Appropriation for Removing the Obstruction to the Navigation of the Western Rivers, for the Improvement of the St. Louis Harbor and for Other Purposes (1844), 17.

of this system fostered the various stages in the diversion of trade to the Great Lakes - Erie Canal route. The large wagon trade, for example, which sprang up to Toledo and Chicago in the late 1840's was an expression of the Western farmers' dissatisfaction with the marketing system on the Mississippi River system.

By the late 1840's the Mississippi River route was able to offer a somewhat improved marketing system, but by that time the area of competition between the two routes had moved farther westward (because of the movement of the center of grain production), and the contest between the two routes had largely narrowed down to a competition involving St. Louis on the one hand and Chicago and Milwaukee on the other.[9] This competition developed into a contest for the grain and flour trade of the upper Mississippi Valley. St. Louis was handicapped in its efforts to tap the trade of this area by the Des Moines and Rock Island rapids in the Mississippi River and also by the lack of facilities on the Mississippi River route to handle bulk grain. Grain shipments to St. Louis were handled in sacks, and elevator facilities for the handling of bulk grain were not introduced until the St. Louis Grain Elevating Company completed the first elevator to be built in that city in 1865. About the same time other forward-looking businessmen formed the Mississippi Valley

---

[9]Eighth Census of the United States, Agriculture, clv-clvii; Wyatt W. Belcher, The Economic Rivalry between St. Louis and Chicago, 1850-1880, 107-110.

Transportation Company for the purpose of transporting bulk grain and other commodities on the lower Mississippi River in barges drawn by tow-boats instead of in steamboats. This company erected a transfer elevator at New Orleans for the purpose of transferring bulk grain from the barges to ocean vessels, and in 1868 an elevator was completed at New Orleans for storing as well as transferring grain.[10] However, these improvements in the facilities on the Mississippi River route came too late to effect a diversion of the upper Mississippi grain trade from its accustomed Great Lakes channel. The new facilities served but to produce an improvement in the handling of grain and flour enroute to the southern markets.[11]

The competition of farmer-interlopers which held back the development of an organized marketing system over the Mississippi River was not encountered on the various canal systems connecting with the Great Lakes. It required a considerable amount of capital to construct a canal-boat--much more than to construct a flatboat--and consequently farmers were discouraged from building their own canal-boats and doing their own marketing. As a result, merchants regularly engaged in the produce business over the Great Lakes - Erie Canal route much sooner than was the case over the Mississippi River route.

---

[10] U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, appendix 15; see also, Union Merchants' Exchange, Annual Statement of the Trade and Commerce of St. Louis for the Year 1865, 11-12.

[11] Proceedings of the River Improvement Convention, Held in St. Louis, February 12 and 13, 1867, 40.

On both the Erie Canal and on the Western canals connecting with the Great Lakes the function of marketing agricultural commodities was handled by the canal-boat "Lines." These canal-boat Lines were simply business affiliations of canal-boat owners.[12]

The first canal-boat Lines to be developed were those on the Erie Canal. These Lines offered a through marketing and transportation service for the entire length of the Erie Canal. The agents of these affiliations at various points along the Erie Canal advertised themselves as "commission and forwarding agents." The commission part of their title meant that they engaged in the marketing of agricultural produce for a commission, and the forwarding part indicated that they were also general freight agents. The combination of these two functions was very practical because the major part of the freight business on the Erie Canal consisted of the transportation of agricultural commodities; and the canal-boat Lines, by offering a marketing service in addition to their

---

[12]Despite the importance of the canal-boat Lines in the development of the West this topic has not received the attention it deserves. The sources of information for the present study were found mainly in advertisements in the Buffalo city directories, and in the directories of other Lake cities. See also, Clark Waggoner, History of the City of Toledo and Lucas County, Ohio (1888), 450, 457; J. Disturnell (publisher), New York As It Is, In 1835, 150-151; and the letter-books and correspondence of H. M. Hunt and T. Roby, storage, commission and forwarding agents of Detroit, Michigan, Thomas Palmer Papers, Burton Historical Collection, Detroit Public Library.

transportation service, were able to assure themselves of a large business.[13]

The Erie canal-boat Lines served the markets for flour and grain in the heavily populated East. At Albany and Troy, the eastern termini of the Erie Canal, the flour and grain marketed by these Lines were transferred to coasting vessels for shipment and distribution down the Hudson River and along the Atlantic coast. By 1830, however, it had become more common to make the transfer from canal-boats to coasting vessels in New York harbor.[14] This was because it was found to be more economical to use larger vessels in the coasting trade and these larger vessels were unable to proceed up the Hudson River to Albany and Troy owing to obstructions in the navigation of that river. Under this latter system the canal-boats bearing grain and flour were lashed together and towed down the Hudson River to New York harbor, some twelve or fifteen at a time.[15]

---

[13] Crary's Directory for the City of Buffalo, 1841, advertising section; H. N. Walker's Buffalo City Directory, 1842, advertising section. As early as 1829 the New York Canal Commissioners reported that grain products paid more than one-half of all tolls paid on the eastward trade. New York Assembly Document, No. 47 (1830), 18.

[14] House Executive Document, No. 189, 22 Congress, 1 session, 21; Haig, Notes on the River Navigations of North America, 48-49. In 1835 the two tow-boat companies in operation on the Hudson were the Troy Line and the Swiftsure Line. Disturnell, New York As It Is, in 1835, 150. On the obstructions to navigation in the Hudson River see, John S. Curtiss, "The Sloops of the Hudson, 1800-1850," New York History, XXXI (1933), 67.

[15] Harbor-Master of the Port of Albany, Annual Report, New York Assembly Document, No. 138 (1840), 3.

In 1833 the following canal-boat Lines were in operation over the Erie Canal:[16]

Troy and Erie Line
Pilot Line
Washington Line
New York and Ohio Line
Merchants' Line
Hudson and Erie Line
Clinton Line

These canal-boat Lines extended their transportation and marketing services to the West via Lake Erie by forming affiliations with vessel owners and by appointing freight agents to represent them in the ports along the Ohio shore: Fairport, Cleveland, Ashtabula, Huron, Milan, and Sandusky. Like their counterparts in the East these Western agents also advertised themselves as "commission and forwarding agents." The grain and flour which they received from farmers and millers was shipped on Lake vessels and over the Erie Canal and was sold in the East by the eastern commission and forwarding agents of the Erie canal-boat Lines.[17]

This marketing system was extended inland from the Lakes on the completion of the Ohio and Erie Canal in 1833. Affiliations of canal-boat owners were also formed on this canal and these Lines in turn affiliated themselves with an Erie canal-boat Line. Thus the commission and forwarding

---

[16]Smith, History of the City of Buffalo, II, 192.

[17]Julius P. Bolivar MacCabe, ed., Directory Cleveland and Ohio City for the Years 1837-38, advertising section; H. N. Walker's Buffalo City Directory, 1842, see the advertisement of the " Commercial Transportation Co.," advertising section.

agents of the canal-boat Lines on the Ohio and Erie Canal were affiliated with a marketing and transportation system which extended as far east as New York City.[18]

This same system also developed on the Miami and Erie and Wabash and Erie Canals serving Toledo, and on the Illinois and Michigan Canal serving Chicago. At other ports, such as Detroit, which were not served by canals, the Erie canal-boat Lines were represented by commission and forwarding agents who served the interests of Lake vessels which were operated as affiliates of an Erie canal-boat Line. These agents also formed business connections with inland produce dealers.[19]

The grain and flour trade on the Great Lakes began to develop in the late 1820's, and the following table of the produce passing to the East on the Erie Canal through Buffalo and Oswego indicates the amount of Western business handled by the Great Lakes marketing system during this early period:[20]

---

[18] See the advertisement of Griffith, Pease & Co., of Cleveland, who advertised themselves as agents of the Troy and Erie Line (Erie Canal), produce merchants and dealers in salt, and proprietors of a Line of canal-boats on the Ohio and Erie Canal. MacCabe, ed., Directory Cleveland and Ohio City for the Years 1837-38, advertising section.

[19] Directory of the City of Detroit for 1837, advertising section; Directory of the City of Detroit for 1845, advertising section; Robert Fergus (comp.), Directory of the City of Chicago, Illinois, for 1843, Fergus Historical Series, No. 28, advertising section.

[20] Canal Commissioners, Annual Report, New York Assembly Document, No. 65 (1836), 52; Auditor of the Canal Department, Annual Report, New York Assembly Document, No. 133 (1876), table No. 26.

Year	Buffalo		Oswego	
	wheat bushels 60 lbs.	flour barrels 216 lbs.	wheat bushels 60 lbs.	flour barrels 216 lbs.
1829	3,640	4,335		
1830	149,219	31,810		
1831	186,148	62,968		
1832	100,761	21,932	not available	
1833	114,337	78,324		
1834	111,798	79,847		
1835	168,012	100,833	51,962	123,421
1836	304,090	139,178	112,224	94,667
1837	450,350	126,815	10,025	66,002
1838	933,117	277,620	59,710	76,098
1839	972,156	357,446	106,210	110,390

Prior to 1839, these grain and flour shipments were transhipped to canal-boats at Buffalo and Oswego but they were not sold there. Instead the produce was taken farther along the Erie Canal to Rochester, Utica, Albany and New York City and sold in those centers.[21]

About 1839, however, a grain market began to develop in Buffalo. The development of this grain market was contemporaneous with the development of milling in the vicinity of that city. The open market for grain in Buffalo in turn encouraged the commission and forwarding agents in the West merely to ship grain and flour by Lake vessels to Buffalo to be sold there instead of consigning their shipments via an Erie canal-boat Line.[22]

---

[21] U. S. Treasury Department, Statistics of the Foreign and Domestic Commerce of the United States (1863), 161, footnote.

[22] Ibid.; S. S. Guthrie, "History of the Buffalo Board of Trade," Buffalo City Directory, 1870, 29-30; Smith, History of the City of Buffalo, 211-212.

The Buffalo grain market was formally organized in 1844. It was organized in response to the need for some common meeting place where the buyers from the mills could meet the commission agents who handled the sale of the grain cargoes which were brought to the city. In order to provide such a grain exchange several meetings of the grain dealers of Buffalo were held in the early months of 1844 under the leadership of Russell H. Heywood, the owner of the Venice Flour Mills near Buffalo.[23] From these meetings there emerged the organization of the Buffalo Board of Trade. The members of this association agreed on a set of by-laws and adopted machinery for the arbitration of disputes, and Heywood, who was elected the first president of the organization, provided a rent-free hall in the Merchant's Exchange Building which he erected in Buffalo in the winter of 1844-45. In this hall the members of the association met together to buy and sell grain.[24]

Meanwhile Oswego was also developing as a milling and grain marketing center, and the grain dealers of that city formally organized a grain exchange on October 5, 1849, under the auspices of the Oswego Board of Trade.[25]

---

[23]Lloyd Graham and Frank H. Severance, The First Hundred Years of the Buffalo Chamber of Commerce, 17, 26.

[24]Ibid.

[25]U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1889, 886.

When the grain markets in Buffalo and Oswego were first developed they served primarily the millers in the vicinity of those cities, but the disappearance of the Erie canal-boat Lines in the decade of the 1840's thrust upon the grain dealers of Buffalo and Oswego the position of middlemen between the West and East in the grain and flour trade.

The older system of marketing via the Erie canal-boat Lines gradually broke down in the course of the decade of the 1840's when these Lines lost their business to the transportation companies which were then formed on the Great Lakes and Erie Canal. These transportation companies developed from consolidations of several of the larger Erie canal-boat Lines. They specialized in carrying freight and did not engage in the marketing of agricultural commodities.[26]

The disappearance of the Erie canal-boat Lines resulted in a breakdown of the well-established marketing connections between the Western grain merchants and the grain merchants in the markets east of Buffalo and Oswego on the Erie Canal. To fill this void the Western grain merchants made marketing

---

[26]The companies formed by the consolidations of some of the Lines drove the remaining Lines out of business. By 1841 there were thirty-four canal-boat Lines competing for business on the Erie Canal. Consolidations of these Lines into companies had begun by 1842. The Telegraph, Commercial, and Transportation Lines formed the Western Transportation Company. The Pilot, Traders', Erie and Ohio Lines formed the American Transportation Company. Crary's Directory for the City of Buffalo, 1841, 22; H. N. Walker's Buffalo City Directory, 1842, 63. Note the differentiation in function between forwarding and commission agents in the advertisements in The Commercial Advertiser Directory for the City of Buffalo, 1848-1849.

arrangements with the grain merchants in Buffalo and Oswego, and as a consequence in the late 1840's most of the grain and flour shipped on the Great Lakes began to be sold in those cities. By 1850 Buffalo had become the largest grain and flour market in the United States.[27] The Oswego grain market was about half the size of the Buffalo market.[28]

The system of marketing grain and flour by selling it in Buffalo and Oswego, however, constituted only a modification of the marketing system which had first been organized by the Erie canal-boat Lines. Many of the features of the earlier system of marketing persisted. The canal-boat Lines on the Western canals continued to engage in the marketing of agricultural commodities in the 1840's and early 1850's.[29]

Under both the Erie canal-boat Line system of marketing and under the system of marketing which replaced it, the grain merchants in the Western Lake ports received flour and grain directly from nearby farmers and millers and, indirectly, from more distant farmers and millers through the agency of inland commission merchants. Generally neither the Lake port agent nor the inland agent actually purchased

---

[27] Buffalo Board of Trade, Annual Statement of the Trade and Commerce of Buffalo for the Year 1855, 10; David Wentworth, Annual Review of the Trade Commerce, and Manufactures of Buffalo, for the Year 1854, 7; New York Senate Document No. 164 (1851), 11.

[28] New York Senate Document, No. 164 (1851), 12; John C. Churchill, Landmarks of Oswego County, New York, 362-369; L. H. Everts & Co. (publishers), History of Oswego County, New York, 171-172.

[29] See the advertising section in Charles Cist, Sketches and Statistics of Cincinnati in 1851; Leola Hockett, "The Wabash and Erie Canal in Wabash County," Indiana Magazine of History, XXIV (1928), 299-300.

grain and flour from the farmers and millers. They merely received it, and charged a commission for marketing it--this mode of doing business was customary under both the earlier and the later systems of marketing. Until the latter years of the decade of the 1840's only minor local sales of grain and flour were made in the Western Lake ports.[30]

Under both the Erie canal-boat Line system of marketing and its successor it was the common practice of merchants to give farmers and millers advances in cash on their consignments. In 1833 at Maumee, Ohio, the agents of the Erie canal-boat Lines gave advances of three-fourths of the value of the produce they received.[31] The amount of the advances which were made to farmers and millers, however, varied in accordance with the conditions of competition because these advances were made as an inducement to attract business. Hunt & Roby, two partners who operated a commission business in Detroit in the late 1840's, regularly gave advances of two-thirds the value of the produce they received and charged 1% interest on these advances.[32] The advances which were provided by the commission merchants were an important feature of the marketing system of the Great Lakes because

---

[30]See pp. 77-79.

[31]"Circular of Comptroller to Persons in Western States in Relation to Western Trade, September 10, 1833," Commissioners of the Canal Fund, Annual Report, New York Senate Document, No. 35 (1837), 72.

[32]Hunt & Roby to E. J. Mott, November 18, 1847, Thomas Palmer Papers.

these payments gave farmers and millers the immediate cash which they generally needed.[33]

The commissions which the Western produce dealers charged their farmer and miller customers also varied in accordance with the conditions of competition, but a 2-1/2% selling commission was the general rule.[34] The 2-1/2% commission included all selling charges by the Lake port and Eastern dealer; but when grain also passed through the hands of an inland produce dealer the charges were higher because of the inclusion of the commission of that agent. Sometimes the selling charge was a flat per bushel rate. For example, Charles L. Bissell & Co., a commission house which operated in Chicago in the 1850's and served about twenty-five inland produce dealers, charged their inland correspondents a flat two-cent-per-bushel selling commission on wheat and a one-cent-per-bushel commission on corn and other grain.[35] The

---

[33]This factor was not an advantage peculiar to the Great Lakes-Erie Canal route except in the early period before the Mississippi River commercial system was well organized. Merchants in the West regularly gave advances on consignments and both New Orleans and Buffalo merchants were equally able to obtain capital in New York City.

[34]This was the standard rate of commission adopted by the New York Chamber of Commerce, March 2, 1819. Disturnell (publisher), New York as It Is, In 1835, 166.

[35]W. A. Sanborn to Charles L. Bissell & Co., August 14, 1856, Charles L. Bissell Papers, Burton Historical Collection, Detroit Public Library. "Flat-rate" commissions of this type were more common than percentage commissions by 1860. See, Toledo Blade's Seventh Annual Statement of the Trade and Commerce of Toledo for 1864, 4.

Bissell Company made their Buffalo sales through Cutter & Coye, and this Buffalo firm charged its Lake port correspondents a 1-1/4% commission on sales.[36]

Under the later marketing system on the Great Lakes it was necessary for the commission agents in the Western Lake ports to have business connections with a Buffalo or Oswego commission agent who would act as their agent in the sale of grain and flour in those markets. These business relationships frequently took on the aspect of informal affiliations because the Lake port commission agents generally sold through the same Buffalo or Oswego house year after year. Interestingly, the business relationship was sometimes also a family relationship. For example, Charles Walker, of Chicago, who was the largest produce dealer on the Lakes in the late 1840's, established his brother-in-law, Cyrus Clark, in business in Buffalo to represent him there.[37] The ten Hollister brothers of Ohio afford another example of this type of family cooperation. Three of the ten brothers in the 1840's became commission merchants in Buffalo and served as selling agents for other members of the family who remained behind in various cities in Ohio.[38]

The Buffalo and Oswego commission houses, in addition to serving their Western Lake port correspondents as selling

---

[36]Cutter & Coye to Charles L. Bissell & Co., August 11, 1856, Charles L. Bissell Papers.

[37]Zebuia Eastman, "Biographies: Charles W. Walker," Chicago Magazine, I (1857), 51-55; Andreas, History of Chicago, I, 555, 586-587.

[38]Waggoner, History of the City of Toledo, 470.

agents, also served them in a financial capacity. The Buffalo dealers regularly provided their fellow produce dealers in the Western ports with advances on the consignments of grain and flour which were sent to them for sale. This made it possible, in turn, for the Western Lake port dealers to offer advances on consignments to the farmers and millers and inland commission merchants with whom they did business. These advances all along the chain of sale to Buffalo and Oswego were discharged after the grain and flour on which the advances were made were sold in those markets.[39]

The advances made by the Buffalo or Oswego commission houses to the Lake port dealers, and the advances made in turn by the Lake port dealers to their inland colleagues, were accomplished generally by means of bank drafts. For example, an inland commission agent when he received grain and flour to be marketed, gave cash advances on these consignments. These advances, if he made very many of them, depleted his capital. To replenish his funds he notified

---

[39]The advertisements of Buffalo commission merchants in the Buffalo city directories generally specified that they gave "advances on consignments." The letter-books and correspondence of Hunt & Roby, of Detroit, 1846-1852, also show the system in operation. See particularly, Hunt & Roby to Willis & Kirby, September 15, 1847; Hunt & Roby to Coats & Folger, September 21, 1847, Thomas Palmer Papers. The letters received from country dealers by Charles L. Bissell & Co., of Chicago, 1854-1861, numbering several thousand, also show the same system in operation. See particularly, Richey & Thompson to Charles L. Bissell & Co., January 18, 1856; George W. Bissell to Charles L. Bissell, August 16, 1855, Charles L. Bissell Papers.

his Lake port representatives that he was sending a shipment forward and on the basis of the security of the value of this shipment he executed an interest-bearing draft at his local bank for which his bank gave him banknotes. The draft which he executed was drawn on his Lake port representatives and was payable by them. The local bank merely sent the draft forward for collection by a bank in the Lake port. These drafts were generally time drafts payable in thirty or sixty days rather than sight drafts.[40]

In turn, the Lake port dealers replenished their funds in a similar manner by executing drafts on their Buffalo or Oswego representatives. These drafts were also generally time drafts. Time drafts were preferred because they gave the dealers sufficient time to complete the chain of sale and discharge their indebtedness.[41] This system was also used in reverse: to transmit to the West the money which was made from the sale of the grain and flour.[42]

---

[40]Charles Bissell, of Chicago, permitted country dealers with whose honesty he was familiar to draw, but he preferred to send currency to other dealers. See, George W. Bissell to Charles L. Bissell, August 16, 1855, Charles L. Bissell Papers.

[41]Cutter & Coye to Charles L. Bissell & Co., June 18, 1856, Charles L. Bissell Papers. George Bissell, of Detroit, wrote his brother in Chicago, "Advise me at what price one or two cargoes of wheat could be bought for and could you get money on Buffalo on time enough to allow the wheat to arrive there." George W. Bissell to Charles L. Bissell, February 29, 1856, Charles L. Bissell Papers.

[42]See, for example, George W. Bissell to Charles L. Bissell, May 19, 1854, Charles L. Bissell Papers. George Bissell of Detroit, established his younger brother Charles in Chicago and thereafter wrote him on business matters and chided him on his mistakes. These letters are revealing of the details of trade at this time.

There were several safeguards which materially reduced the chances for dishonesty in this type of financing. Generally, banks would not discount drafts drawn on commission houses unknown to them.[43] In addition, the drawer of the draft was required to have a general authorization signed by the commission house on whom he wished to draw.[44] Furthermore the commission merchants on whom the draft was drawn would not sign the draft (which would indicate they intended to pay it) unless they had already received a bill of lading or assurance of some kind that a shipment was enroute which when sold would cover the amount of the draft.[45]

Despite these safeguards, however, some dishonesty still persisted and occasionally drafts were not accepted for payment. In such cases the drafts which were not accepted were known as "protested drafts" and the banks were forced to demand payment from the drawer of the draft. Because of this danger the Western banks generally refused to discount, i. e.

---

[43]Note the action of Chicago banks in refusing to discount time drafts drawn on Cutter & Coye, of Buffalo, because the firm was not then well known in Chicago. Cutter & Coye to Charles L. Bissell, September 23, 1854, Charles L. Bissell Papers.

[44]George W. Bissell to Charles L. Bissell, March 1, 1854; Cutter & Coye to Charles L. Bissell & Co., May 16, 1855, Charles L. Bissell Papers.

[45]See, for example, the instructions of Cutter & Coye, of Buffalo, to Charles L. Bissell & Co., of Chicago. Cutter & Coye to Charles L. Bissell & Co., September 1, 1856. Charles L. Bissell Papers. "We cannot accept your dft. as advised. . . . We are sorry to let it go back, but we are pledged not to accept paper under such circumstances -- that is -- without the property." Cutter & Coye to Charles L. Bissell & Co., May 26, 1857, Charles L. Bissell Papers.

cash, drafts when money was "tight" in the West.[46] At these times the banks would only deal in fully secured paper, and the system of using drafts in the financing of the produce trade broke down. This did not happen very often, however, and generally the system worked quite well.[47] On the occasions when it did occur, the Western Lake port dealers were not too much inconvenienced. At such times they sent their drafts forward to be discounted in Buffalo or Oswego and used Eastern banknotes to carry on their business.[48]

The system of financing the grain trade of the Great Lakes prior to the development of the Buffalo grain market was somewhat similar to the later system. However, when the earlier system developed there was a lack of banking facilities in the West and the banks of upstate New York at Utica, Albany, Canandaigua, and Buffalo discounted the produce drafts,

---

46". . . currency can not be had, sight drafts on Buffalo go a begging. We are obliged to send forward drafts for collection -- as the [local] banks will not discount. The scarcity of money is without doubt [the cause of the low price of flour]." Hunt & Roby to T. S. Forsey, October 29, 1846, Thomas Palmer Papers.

47Judging from the correspondence of Hunt & Roby and Charles L. Bissell such periods occurred in 1846-1847, 1854, 1857, 1860. Hunt & Roby to B. J. Redfield, April 19, 1847, Thomas Palmer Papers; George W. Bissell to Charles L. Bissell, March 14, 1854; Cather & Payne to Charles L. Bissell & Co., May 26, 1857, Charles L. Bissell Papers. For the situation in 1860 see, Toledo Blade's Annual Statement of the Trade and Commerce of Toledo for the Year 1860, 5.

48Hunt & Roby to T. S. Forsey, October 29, 1846, Thomas Palmer Papers; Cutter & Coye to Charles L. Bissell & Co., October 31, 1856, Charles L. Bissell Papers. See also, Waggoner, History of the City of Toledo, 472.

and the banknotes received from these banks were sent to the West to finance the purchases there.[49]

The general system of financing through the use of drafts was an important feature of the grain trade of the Great Lakes because it enabled the produce dealers on that route to handle a large volume of business with a small amount of capital. It was not a system, however, which was unique to the Great Lakes. The origins of the general system of bank drafts are obscure, but drafts were used (and still are used) in foreign trade and in interregional trade, the domestic equivalent of foreign trade.[50] This system, however, functioned particularly well on the Great Lakes because of the close business affiliations between the produce dealers in the Western Lake ports and the dealers in Buffalo.

The drafts used in the produce trade served not only in the financing of that trade but also as a means by which the West was able to discharge its indebtedness to the East.

---

[49]"These drafts are made at the pleasure of the drawer and the internal banks, mostly at Rochester, Buffalo, Canandaigua, Utica and Albany discount these drafts. Their bank-notes are received, with which the purchases of wheat are made by agents [of the Erie canal-boat Lines] at different points in New York, Ohio, Pennsylvania, and Michigan." Maryland Pocket Annual for 1840, 75-77; Kuhlman, The Development of the Flour-Milling Industry in the United States, 70. For details see, "Report of the Committee on the Incorporation and Alteration of the Charters of Banking and Insurance Companies Relative to the Practices Pursued by Certain Banks. . . ," New York Assembly Document No. 229 (1835), 6, 44, 109, 132, 148, 155.

[50]See, Joseph J. Klein, "The Development of Mercantile Instruments of Credit in the United States, Parts I-IV," Journal of Accountancy, XII (1911), 594 ff.

This was due to the fact that the produce drafts executed by the Western Lake port dealers were payable at the specie-paying banks in Buffalo. Therefore, merchants in the West who had purchased goods in the East and owed money there were ready customers for the purchase of these drafts from the Western banks which discounted them. By purchasing these drafts the Western business men were able to substitute their Eastern creditors as the payees of the draft in the place of the Western banks which ordinarily were the payees. This was a boon to Western merchants because their Eastern creditors would not accept Western banknotes or credits on non-specie-paying Western banks, but they would accept credits on the specie-paying Buffalo banks.[51]

An example, perhaps, will make more clear the workings of this system by which the West discharged its indebtedness to the East. When a Western merchant purchased a produce draft and substituted his Eastern creditor as the payee, the Buffalo bank which collected on the draft for the Western bank, did not credit the Western bank but instead credited

---

[51]The practice was very similar to that in foreign trade. See the following pages in which this similarity is developed. On the need and importance of Eastern exchange in the West see, Gerhard, Illinois As It Is, 67. On banking in Buffalo see, Buffalo Board of Trade, Annual Statement of the Trade and Commerce of Buffalo for the Year 1855, II-14. On the general practice see, Toledo Blade's Annual Statement of the Trade and Commerce of Toledo for the Year 1860, 5. For further information on this system in operation see, Cutter & Coye to Charles L. Bissell & Co., August 24, 1855; George W. Bissell to Charles L. Bissell, December 12, 1854, Charles L. Bissell Papers. Hunt & Roby to Coats & Folger, March 24, 1848, Thomas Palmer Papers.

the payee whose name had been substituted. This mode of payment was highly satisfactory to Eastern creditors because credits in the Buffalo banks were readily transferable to other specie-paying banks in the East.[52]

Drafts which were used in this manner in the West to discharge indebtedness were referred to as "exchange," or more particularly as "domestic exchange"--to distinguish them from foreign exchange which were drafts payable in foreign countries to substituted payees.[53]

In the West in the period before the Civil War there were several occasions when domestic exchange was sold at premiums above face value. Ordinarily the banks in the Western Lake ports and the brokers, who also discounted produce paper, discounted the Buffalo drafts of produce dealers free of interest charges--these charges were borne by the Western debtors who purchased the drafts from the banks. When the demand for exchange on the East was particularly strong, however, drafts were sold at a premium.[54]

---

[52]Andrew J. Aiken, Annual Report of the Commerce, Manufactures, Banking Business, and Railroad System of Milwaukee for the Year 1855, 12.

[53]Domestic exchange served the same function as foreign exchange; it was a way of discharging indebtedness in lieu of the physical transfer of specie. On this similarity see, Stephen Colwell, The Ways and Means of Payment: A Full Analysis of the Credit System and its Various Modes of Adjustment (1859), 188-200, 444-453. As a businessman and political economist, Colwell was intimately acquainted with these techniques.

[54]Taylor, History of the Board of Trade of the City of Chicago, I, 265.

The importance of the grain trade to the West as a means of discharging Eastern indebtedness was graphically demonstrated in Chicago at the time of the Panic of 1857. At that time the premium on specie or exchange on specie-paying banks in the East rose to over 5%, and the wholesale merchants of Chicago were so hard pressed to pay these extra charges that they formed the Merchant's Grain Forwarding Association and began to trade in grain.[55] Their purpose in doing this was to obtain exchange on the Eastern banks themselves and thus avoid purchasing exchange from the Chicago banks. The historian of the Chicago Board of Trade recorded the purpose and success of this association as follows:

> The merchants disavowed any intention of interfering with the regular grain business of the city [the merely local buying and selling of grain], asserting that their only object was to escape an exorbitant charge for Eastern exchange. As might have been expected, the organization was too unwieldly to act effectively, but considerable business was done by individual merchants with their country correspondents and with farmers.[56]

In the post-Civil War period bank drafts continued to be used in the grain trade between the East and West. However, the necessity of using drafts in their capacity as domestic exchange in order to discharge Western indebtedness in the East came to an end in the early months of the year 1861 when the New York state banks, followed by other Eastern banks, suspended specie payments. Soon thereafter the

---

[55] Ibid., 231.

[56] Ibid.

Federal government also suspended specie payments and until these payments were resumed on January 1, 1879, the internal trade of the United States was conducted on a non-specie basis.[57]

During this period of specie suspension there was no difference between Eastern and Western banks as to the payment of specie and Western bank deposits were consequently of equal value to Eastern bank deposits. Hence domestic exchange was no longer required in the trade between the two sections--bank credits in the West could be transferred directly to Eastern banks. Nor was domestic exchange required in the trade between the two sections after specie payments were again resumed; in the interim the position of Western banks had improved and the National Banking Act of 1863 had provided the nation with a uniform currency.

During the Civil War period the grain trade between the East and West also underwent certain changes. These changes, brought about by the telegraph and railroad, altered the characteristic features of the buying and selling of grain between the two sections.

---

[57]Davis R. Dewey, Financial History of the United States (1915), 281, 375.

CHAPTER IV

THE EFFECT OF THE TELEGRAPH AND THE RAILROAD ON THE MARKETING SYSTEM OF THE GREAT LAKES, 1853-1873

The American grain trade of the Great Lakes in the course of its development up to about 1873 reflected the commercial revolution in the internal trade of the United States which was brought about by the telegraph and the railroad. These modern means of communication and transportation shifted the centers of grain and flour marketing and distribution from the East to the West.

The telegraph resulted in the development of grain and flour markets in the West and therefore made possible the direct purchase of grain and flour there by Eastern purchasers. The railroad supplied a network of transportation by means of which the products purchased in the West could be distributed directly from the Western markets to the points of consumption in the East.

This new system of direct purchasing in the West marked a change from the older system under which Western grain and flour were shipped to Eastern markets--mainly Buffalo--and sold there for distribution throughout the East. The change to the new system of distribution began in the decade of the 1850's, but it did not largely replace the older system until toward the end of the following decade.

In the era before the West was placed in telegraph communication with the East, there were no large grain and flour markets in any of the Western ports. Small sales of grain and flour were made in those centers in the pre-telegraph era in order to supply purely local needs, but most of the grain and flour which was brought in was merely received on a commission basis for shipment to the East. This situation was to be radically altered with the construction of telegraph lines westward from Buffalo, a project initiated by the Erie and Michigan Telegraph Company in 1847.[1]

The reason why the buying and selling of grain and flour in the local markets in the Western ports was of such small volume in the pre-telegraph era was that those markets were out of touch with the price fluctuations in the Buffalo market.[2] Information on the price changes in the Buffalo market was regularly received, but, in the words of a Chicago grain merchant, "The long intervals between advices by steamer . . . compelled grain merchants to do business on wide margins."[3] The price for a bushel of wheat in the local market in Chicago, for example, followed the price fluctuations of the Buffalo market, but at a wider margin than was justified by the mere cost of transportation per

---

[1]William F. Raney, Wisconsin: A Story of Progress, 111-112.

[2]Taylor, History of the Board of Trade of the City of Chicago, 147.

[3]Ibid.

bushel from Chicago to Buffalo.[4] This extra-wide price margin served to protect the Western grain dealers from price fluctuations of which they could not be aware, but it resulted in low cash prices in the West for grain and flour. Because of these low prices most of the grain and flour received in the Western ports was merely received on a commission basis for shipment to the East.

The completion of telegraph lines to the West, however, put the local grain markets in the Western ports in constant touch with the price fluctuations in the Buffalo market. As a consequence the grain and flour dealers in the West were no longer forced to buy and sell as cautiously as they had before, and they began to pay prices which more closely approximated Buffalo prices. Because of these better prices more grain and flour began to be offered for sale in these local markets.[5]

Another reason why the extension of the telegraph to the Western ports resulted in more grain being sold in local centers was that the daily information received from Buffalo encouraged the speculative buying and selling of grain. Speculators sought to "cash in" on price changes.[6]

---

[4]On Chicago - New York prices, see the appendix to the present study. See also Bidwell and Falconer, History of Agriculture in the Northern United States, 1620-1860, 312-314.

[5]Taylor, History of the Board of Trade of the City of Chicago, 147.

[6]Weston A. Goodspeed, and Daniel D. Healy, History of Cook County, Illinois, I, 189.

The Chicago Democrat, in September, 1847, commented on this situation as follows:

> There is now a smart chance of a man's making his "lasting fortune," by trying his luck on a cargo of Illinois wheat and pocketing a cool thousand with very little trouble if only he watches the telegraph close enough to get half an hour ahead of his contemporaries in the field. . . . A lucky dog who happened to receive a slip by telegraph last week and who had been watching his turn of the wheat, started for the docks, like a fresh hound from the leash, seeking among the holders of Illinois wheat whom he might make a meal of. He soon came across his man and immediately struck a bargain for a cargo at 80 cents per bushel, the seller chuckling over his trade. In less than fifteen minutes, however, the market rose to 85 cents, and the fortunate possessor of the news by the last flash pocketed the cool five hundred.[7]

For several years after the introduction of the telegraph the local grain and flour markets in the Western ports continued to be conducted in an informal fashion: there were no organized grain exchanges where grain was bought and sold, but instead the dealers customarily met at a particular street corner or at the railroad depot or some other location to transact their business.[8] The organization of Boards of Trade in the Western ports, however, attracted the grain merchants to the club rooms of those organizations and in the course of a few years the transactions in grain and flour began to be conducted under the auspices of those associations.

---

[7] Chicago Democrat, September 12, 1847.

[8] Elmer E. Barton, Industrial History of Milwaukee, The Commercial, Manufacturing, and Railway Metropolis of the West, 45; Taylor, History of the Board of Trade of the City of Chicago, 155.

Boards of Trade were established in Detroit in 1847, in Cleveland and Chicago in 1848, and in Milwaukee and Toledo in 1849.[9]

Large grain and flour markets were developed only in the more important Lake ports: in Cleveland, Toledo, Detroit, Chicago, and Milwaukee. This resulted in a diminution in the grain and flour receipts of the smaller Lake cities because farmers and millers preferred to send their grain and flour to the more active markets in the larger centers.[10]

The development of grain markets in the larger Western ports also had the effect of introducing specialization in the ranks of the commission merchants in those ports. In the course of the decade of the 1850's the grain merchants in Chicago, Milwaukee, and Toledo began to specialize either in receiving grain and flour from farmers, millers, and country dealers and selling these products for them in the local markets, or in buying grain and flour on Eastern orders and shipping them eastward to be sold in Buffalo or Oswego.[11]

---

[9]Bayrd Still, "Patterns of Mid-Nineteenth Century Urbanization in the Middle West," Mississippi Valley Historical Review, XXVIII (1941), 199. These associations when first organized served a social function.

[10]Compare statistics of Lake Michigan port receipts in Senate Executive Document, No. 112, 32 Congress, 1 session, 213, and Eighth Census of the United States, Agriculture, cl.

[11]Daily Democrat, Annual Review of the Commerce of Chicago for 1856, advertising section, 14. The receivers were known as "city dealers," the buyers were known as "shippers." This specialization was well established by 1872. Senate Reports, No. 307, 43 Congress, 1 session, II, 294.

In the late 1850's these latter grain merchants also made arrangements for the sale of grain and flour directly to the more distant Eastern grain and flour markets: Albany, New York City, Boston, Philadelphia, and Baltimore.[12]

The increased volume in the buying and selling of grain and flour in the larger Western ports was a decidedly important development because it opened up the possibility of Eastern purchasers buying grain and flour on a large scale directly in the Western markets. By purchasing directly in the West, Eastern purchasers had only to pay the commission charged by the Western grain merchants, and they were thus able to avoid the commission charged by the Buffalo or other Eastern commission house through whom they had previously made their purchases. The commission paid ordinarily by an Eastern purchaser was about 2-1/2%, but if he purchased directly in the West he paid a commission of but 1-1/4% and sometimes even less than that. Joseph W. Wright, a Chicago dealer in the early 1860's who specialized in making purchases in the Chicago market for Oswego millers, charged

---

[12]This process can be followed through the correspondence of Charles L. Bissell, of Chicago. Bissell's selling arrangements were with Cutter & Coye, a Buffalo commission house. In 1855 and 1856, however, Bissell received letters from Oswego, Boston, and New York City commission merchants who wanted to do business with the Chicago firm. Bissell cautiously sold one cargo through an Oswego house but turned down offers to do business with distant Boston and New York. I. P. Townsend & Co. to Charles L. Bissell & Co., September 6, 1856; J. & I. Lewis to Charles L. Bissell & Co., November 1, 1855; George W. Bissell to Charles L. Bissell, May 31, 1855, Charles L. Bissell Papers.

his customers a commission of only 1/4%.[13] Charles L. Bissell & Co., of Chicago, made purchases in the late 1850's in the local Chicago market and charged only a 1% commission for this service.[14]

In order for direct purchases to be made in the West on a large scale, however, it was necessary that a system of distribution from those markets directly to the various points of consumption in the East be made available. Shipments of flour and grain by way of the Erie Canal could be made from the Western markets on through bills of lading to any point on that canal or on the lateral branches of the canal system of New York state; but the network of the New York state canal system was not very extensive. Consequently the limitations of the canal system restricted the volume of the direct distribution of grain and flour from the Western markets to the East.

The railroad network, however, which was constructed in New York state and throughout the East in the decade of the 1850's was much more extensive than the network of transportation provided by the canals. The reason for this difference was that the extension of railroad trackage was

---

[13]Joseph C. Wright to Delos De Wolf, April 10, 1862, Letter-book of Joseph C. Wright, Chicago Historical Society, Chicago, Illinois. Wright specialized as a "shipper."

[14]George W. Bissell to Charles L. Bissell & Co., August 26, 1856, Charles L. Bissell Papers. Direct purchases in the Chicago market were made by France and Great Britain in 1855. Daily Democrat, Fourth Annual Review of the Commerce, Railroads and Manufactures of Chicago for the Year 1855, 6.

confronted with fewer problems and was less expensive than the excavation of canal routes.[15] The extensive network of transportation provided by the railroads afforded a means by which grain and flour could be distributed on a large scale from the Western markets directly to the various points of consumption in the East. The network of railroad transportation in the East, however, had to be connected with the West before direct shipments of grain and flour could be made from the West to the East.

The connection of the Eastern railroad networks with the West took place in two separate stages. The first stage occurred during the decade of the 1850's and involved the three major northeastern railroad systems: the Vermont Central, the New York and Erie, and the New York Central.[16] The second stage occurred in the late 1860's and involved the two major central eastern railroad systems: the Pennsylvania Railroad and the Baltimore and Ohio Railroad.[17]

---

[15]Railroad investments yielded returns throughout the year, whereas the canals were closed to navigation in the winter. Railroads could be built over slight grades, whereas canal routes required expensive locks. See Senate Executive Document, No. 112, 32 Congress, 1 session, 388-390.

[16]The most useful treatment of the northeastern railroads is, William J. Wilgus, The Railway Interrelations of the United States and Canada (1937). It should be understood that in the following discussion the railroads are treated only in their capacity as carriers of grain and flour.

[17]See, James W. Livingood, The Philadelphia - Baltimore Trade Rivalry 1780-1860 (1947).

The three major northeastern railroad systems formed the first connections to be made with the West early in the decade of the 1850's. These connections were made by vessels on the Great Lakes. Each of the northeastern railroads stationed freight agents in the more important Western ports who arranged for the transportation of grain and flour from those ports by way of Lake vessels to the Lake termini of the railroads in the East. From these termini the shipments were carried by railroad directly to their destinations.[18] Toward the end of the decade of the 1850's these railroads established their own propeller lines on the Great Lakes in order to improve their connections with the West.[19]

The Northern Railroad, completed in the fall of 1850, was the first of the northeastern railroads to reach a terminus on the eastern shores of the Great Lakes. This railroad, later a part of the Central Vermont system,was the final link in the rail route from Ogdensburg, New York, a port at the easternmost end of Lake Ontrio, to Boston, and was Boston's first rail connection with the Great Lakes.[20]

The New York and Erie Railroad was completed from Dunkirk, New York, a port on Lake Erie about ninety miles

---

[18] Eighth Census of the United States, Agriculture, cli-clii.

[19] See pp. 88.

[20] Account of the Celebration Commemorative of the Opening of Railroad Communication between Boston and Canada, September 17th, 18th, 19th, 1851, 248; Senate Executive Documents, No. 112, 32 Congress, 1 session, 299.

west of Buffalo, to the Hudson River in 1851. The main line of this railroad ran through the hilly terrain of the southern part of New York state. The New York and Erie Railroad also opened a branch terminus at Buffalo.[21]

The New York Central Railroad was formed in 1853 by the consolidation of several pre-existing lines. The main line of this railroad ran from Buffalo to Albany and paralleled the Erie Canal. Within a few years the New York Central system also added branch routes to Oswego, and to Cape Vincent, a port on Lake Ontario east of Oswego.[22]

These three railroad systems in the seven years from 1854 to 1860, inclusive, received at their termini on the eastern shores of the Great Lakes an average each year of about 40% of the flour barrels shipped eastward on the Great Lakes. The remaining 60% continued to be distributed by way of the Erie Canal and coastwise shipping.[23] Similarly, in the five years from 1856 to 1860, inclusive, these railroads also received about 20% of the bulk grain shipped eastward on the Great Lakes. The remaining 80% continued to be distributed over the Erie Canal route.[24]

These percentages indicate the inroads which direct purchases in the Western grain and flour markets were making

---

[21] Senate Executive Documents, No. 112, 32 Congress, 1 session, 291-292.

[22] Ibid., 290-291; David M. Ellis, "Rivalry between the New York Central and the Erie Canal," New York History, XXIX (1948), 268 ff.

[23] Eighth Census of the United States, Agriculture, cli-clii.

[24] Ibid.

on the older system of marketing and distribution. The direct purchases of flour exceeded the direct purchases of grain because flour was inspected and graded in the Western markets and consequently its purchase in the West was not handicapped by the question of the quality of the product which was offered for sale.[25] Direct purchases of grain in the West, however, were handicapped because the quality of grain in most grain transactions had to be determined by the personal inspection of the purchaser. In the words of a Great Lakes grain dealer:

> The early grain trade of the United States was conducted entirely by personal inspection of the grain by the purchaser, or by the exhibition of samples by the producer or dealer. . . . In cases where it was impossible to submit samples or make personal inspection the grain dealer made a statement or form of certificate as to the general quality or condition of a particular quantity of grain he was offering for sale. As the volume of business increased, the use of these statements or certificates became more necessary, and it was found that the practice of individual dealers issuing their own certificates was not satisfactory.[26]

The adoption of standard grades of grain by the Boards of Trade in Chicago, Milwaukee, and Toledo in the late 1850's and early 1860's, however, made it possible to buy standard grades of grain in those centers and therefore helped to increase the number of direct grain purchases made in the West.[27]

---

[25] Taylor, History of the Board of Trade of the City of Chicago, I, 138.

[26] Senate Executive Documents, No. 116, 60 Congress, 1 session, 1.

[27] See p. 49.

In the late 1850's, as indicated, the northeastern railroads improved their freight service between East and West by establishing their own propeller lines on the Great Lakes. The New York Central Railroad in 1857 established a line of eight propellers to run between Chicago, Milwaukee, Toledo and Detroit and its eastern termini on the Great Lakes.[28] The following year the New York and Erie Railroad also established a line of propellers on the Great Lakes; and in 1860 the Central Vermont Railroad bought control of the Northern Transportation Company's line of propellers.[29] These propeller lines were organized by the railroads to meet the competition of the transportation companies which operated over the Great Lakes and the Erie Canal with their own fleets of propellers and canal-boats.[30]

At the time when the northeastern railroads established their propeller lines on the Great Lakes each of them already had all-rail connections as far west as Chicago. The New York

---

[28]Smith, History of the City of Buffalo, II, biographical section, 75.

[29]Senate Reports, No. 307, 43 Congress, 1 session, II, 220; Toledo Blade's Annual Statement of the Trade and Commerce of Toledo for the Year 1860, 11. Information on these propeller lines is very much scattered. The following, however, which includes some historical material, will be found useful: U. S. Commissioner of Corporations, Transportation by Water in the United States, IV (1912), 29 ff.

[30]See p. 43. In 1864 the Pennsylvania Railroad formed a line of propellers known as the Anchor Line to run to Erie, Pennsylvania, a port on Lake Erie, in conjunction with the Philadelphia and Erie Railroad. This latter railroad was completed in 1864 as a subsidiary of the Pennsylvania system. Transportation by Water in the United States, IV, 29; Henry V. Poor, Manual of the Railroads of the United States, 1880, 362.

and Erie's all-rail connection to Chicago, which was the earliest to be completed, was opened in 1852 by way of the Lake Shore Railroad to Toledo and from there to Chicago by way of the Michigan Southern Railroad.[31] Subsequently the New York Central Railroad formed its all-rail connection to Chicago via the Great Western Railway of Canada to Windsor, Canada, opposite Detroit, and from Detroit to Chicago via the Michigan Central Railroad.[32] The tracks of the Great Western and the New York Central were connected by the suspension bridge across the Niagara River gorge which was completed in 1855. By the end of the decade of the 1850's the Central Vermont Railroad had formed a western connection to Chicago via the Grand Trunk Railway of Canada (through Montreal to Sarnia, Canada), from Sarnia to Detroit, and from Detroit via the Michigan Central Railroad to Chicago.[33]

These all-rail routes, however, were only of minor importance in the grain and flour freight traffic of the northeastern railroads. In the season of navigation on the Great Lakes--the season when most of the grain and flour was moved--the all-rail routes were unable to compete over long distances with the Lake-rail routes. As a result the all-rail routes were only used during the wintertime to carry

---

[31] New York Chamber of Commerce, Tenth Annual Report, 75; Wilgus, The Railway Inter-relations of the United States and Canada, 81.

[32] Ibid.

[33] Ibid.

flour.[34] All-rail wintertime grain shipments, however, were not made because the interruptions in gauge over these routes made it necessary to transfer the grain from one car to another and these transfers were too expensive. Flour barrels, however, could be transferred from one railroad car to another at a relatively small cost, and as a consequence wintertime flour shipments were not handicapped by the cost of transfer.

The first all-rail shipments of grain from Chicago to the East were made in the winter of 1867 when the third rail over the Great Western Railway was completed, adapting that line to narrower-gauge cars, and the railroad-car ferry service was established between Detroit and Windsor.[35] Until these improvements were made it had not been possible to make all-rail shipments between Chicago and New York in the same railroad car. Shipments over the eastward route of the New York and Erie Railroad required transhipment to the wider gauge cars of that railroad until a third rail was added in 1878.[36]

In the decade of the 1850's at the same time that the three northeastern railroads were constructing their rail

---

[34]New York Pro Rata Select Committee, Proceedings before the Committee, January, 1860, 63.

[35]U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1876, appendix, 91; Senate Reports, No. 307, 43 Congress, 1 session, II, 269.

[36]Edward H. Mott, Between the Ocean and Lakes, The Story of Erie, 483.

lines in the northern part of the East, the Pennsylvania and the Baltimore and Ohio Railroads were in the process of constructing their rail routes in the central part of the East. Both the Pennsylvania Railroad and the Baltimore and Ohio Railroad were successful in providing a cheap transportation service to the West although the Pennsylvania Main Line and the Chesapeake and Ohio Canal built in an earlier period over much the same routes as these railroads had failed.[37] The Baltimore and Ohio Railroad reached Wheeling on the Ohio River in 1853.[38] The Pennsylvania Railroad, which bore the same relationship to the Pennsylvania Main Line which the New York Central Railroad bore to the Erie Canal, began to offer a through service between Pittsburg and Philadelphia in 1854.[39] The Pennsylvania Main Line, unable to withstand the competition of the railroad paralleling its route, was sold by the state of Pennsylvania on June 25, 1857, to the Pennsylvania Railroad Company. The following year the Main Line was closed.[40]

---

[37] p. 36.

[38] Poor, Manual of the Railroads of the United States, 1880, 409.

[39] Ibid., 334.

[40] Avard L. Bishop, "The State Works of Pennsylvania," Connecticut Academy of Arts and Sciences, Transactions, XIII (1907), 256-257. By contrast the Erie Canal, despite railroad competition, was never abandoned by New York state. In the period from 1905 to 1918 the Erie Canal was enlarged, and it is in use at the present day though it is now known as the New York State Barge Canal. Noble E. Whitford, "The New York State Barge Canal," in A. H. McDannald (ed.), The Encyclopedia Americana (1946), III, 247-248.

Unlike the Main Line and the Chesapeake and Ohio Canal the Pennsylvania Railroad and the Baltimore and Ohio Railroad were able to carry heavy freight economically over the mountains. This was because of the cheap fuel which was available to them: both roads ran through areas where coal was abundant and inexpensive and the cheapness of their fuel compensated them for the high grades on their routes. In effect, cheap fuel leveled the mountains.[41]

The ability of these two railroads to carry freight economically produced another diversion of the grain and flour trade of the East North Central area. The diversion of trade by way of the railroad routes over the Allegheny and Appalachian mountain ranges overlay the diversion which had already been accomplished by way of the Great Lakes route. Throughout the decade of the 1850's, however, the volume of the grain and flour trade which was diverted by these two railroad routes was equal to only about one-fifth of the volume of trade which took the Great Lakes route.[42] In that decade neither of these railroads had through freight

---

[41]"We have, heretofore, considered the mountain range, as an embarrassment to its capacity, but it is found that its cheap fuel fully compensates for the high grades. . . . Steam lifts the tonnage over the mountains, and when the coal for fuel costs but a dollar per ton, as theirs is supplied at, there is no longer any difficulty or cost in crossing the mountains." Committee on Canals, Minority Report on Petitions for Tolls on Railroads, New York Senate Document, No. 99 (1858), 11.

[42]Eighth Census of the United States, Agriculture, cli-clii.

arrangements nor uniform gauge connections with the Western railroads with which they connected. As a consequence the expense of breaking bulk when grain and flour were transferred from one railroad car to another limited the diversion of trade which these two railroads were able to accomplish.

During the Civil War, however, the Western facilities of these railroads were improved. Both the Pennsylvania Railroad and the Baltimore and Ohio Railroad were called upon in the course of the war to handle an extremely heavy movement of foodstuffs from the West for the use of the Union army.[43] In order to handle this traffic the Pennsylvania and Baltimore and Ohio systems entered into cooperative through-freight arrangements with various Western railroads and rushed forward the completion of uniform gauge routes.[44] After the Civil War these freight arrangements were continued in force. The facilities for through shipment from the West which these arrangements provided ended the necessity of breaking bulk and consequently cheapened freight costs. Similarly, in the post-Civil War period, the introduction of steel rails made it possible to handle heavier trainloads and this also cheapened freight costs.[45]

---

[43]Booklet of Newspaper Clippings in University of Michigan Transportation Library, filed: Pennsylvania Railroad, Miscellaneous, 1846-1869, 3 (clipping unidentified); Festus P. Summers, The Baltimore and Ohio in the Civil War, 42 ff.

[44]Ibid.; John L. Ringwalt, Development of Transportation Systems in the United States, 192-193.

[45]Ringwalt, Development of Transportation Systems in the United States, 192-193; Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 1962.

Because of the reduction in freight costs in the post-Civil War period, the all-rail routes of the Pennsylvania and Baltimore and Ohio Railroads began to divert the grain and flour trade of the East North Central area as far west as Illinois. The diversion accomplished in the post-Civil War period by these two railroad systems, however, was limited to the more southern part of the East North Central area. In this section it was cheaper to ship grain and flour directly by the all-rail routes to the East, rather than to ship it indirectly to the nearest port on the Great Lakes for shipment by way of the Lake-rail routes.[46]

The Vermont Central, the New York and Erie, and the New York Central system also formed a number of through-freight arrangements with Western railroads in the post-Civil War period. The through-freight arrangements over these northern lines were of two types: all-rail, which were used in the wintertime shipment of grain and flour; and Lake-rail, which were used for the shipment of grain and flour in the season of navigation on the Great Lakes.[47]

The through-freight line arrangements made in the post-Civil War period provided the means by which through shipments

---

[46] Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 1962-1963.

[47] Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1876, 15-18, appendix, 49-50; Senate Reports, No. 307, 43 Congress, 1 session, I, 77-78; New York Produce Exchange, Annual Report of the Board of Managers, 1876, 217-224; Special Committee on Railroads, Report, New York Assembly Document, No. 38 (1880), 2961-2966.

could be made from interior points in the West to seaboard points or interior points in the East as a matter of regular business. Before these arrangements were made each through shipment of flour or grain from interior points in the West had to be arranged separately by the freight agents of the railroads over which the through shipment was to be made. The through-freight agreements, however, provided regular procedures which simplified the routing of shipments and the division of freight charges between the Eastern and Western railroads. These arrangements also made provision for through railroad cars to be used over the cooperating lines.[48]

A number of types of through-freight arrangements were developed in the post-Civil War period in order to facilitate through shipments. These were described in the first Report on the Internal Commerce of the United States as follows:

> The through-freight lines have been formed mainly for the purpose of obtaining for the eastern trunk lines traffic in all parts of the Western States. . . . Besides the private fast-freight lines owned and operated by companies or individuals not connected with the management of roads, and the co-operative freight-lines managed by independent organizations established by the railroads entering into the arrangement, there is another form of combination by means of which the advantages of direct transportation are also secured. This consists simply in setting apart certain cars for through traffic, which are distinguished by distinctive marks or colors. Each company, however, retains the entire control of the traffic over its own road. The use of cars is paid for at an agreed rate, the various companies employ their own soliciting agents at such points as they may deem proper, and settlement as to receipts, losses, and car-service are adjusted by the managers of the various roads.[49]

---

[48] Monthly Summary of Commerce and Finance, New Series, VII (January, 1900) 1962.

[49] Report on the Internal Commerce of the United States, 1876, 18-19.

These through freight arrangements were the final element which was needed to complete the modern distributive system of the grain and flour trade of the East North Central area. These arrangements, in conjunction with the telegraph, made it possible for the commission merchants in the Western grain markets to route grain and flour from the interior points of production in the West directly to the interior points of consumption in the East. The shipments were made over the least-expensive through route available at the Western point of shipment, and as a consequence there was no need for the shipments of grain and flour to pass through the terminal market in the West where the sale had been made.[50]

The Secretary of the Chicago Board of Trade summed up the changes in the grain and flour trade which occurred in the post-Civil War period as follows:

> Since about the year named (1867) the local dealers at the East have been increasing their orders direct to western points, until now probably three-quarters of that trade is carried on by orders direct to the West . . . so that the trade in Western products at Albany is abandoned, that at Buffalo reduced to insignificant proportions, and that at other prominent eastern points, has been very greatly diminished. Shipments of grain and flour on account of this trade are made largely by rail in through-line cars, and a large amount of it is drawn directly from interior points, thus saving the handling charges at the lake cities. A large amount, however, is shipped by lake to Buffalo or Erie, and from thence distributed by rail. . . . A very large proportion of the grain shipped for this local trade is either purchased on orders by or shipped for account of Chicago merchants, even though the property itself does not come within a hundred or more miles of this city.[51]

---

[50] Chicago Board of Trade, Sixteenth Annual Report of the Trade and Commerce of Chicago, 1873, 10.

[51] Report on the Internal Commerce of the United States, 1876, appendix, 82.

In the modern era after the Civil War the Great Lakes route did not lose its importance as a route for the grain and flour trade between the East and West, but due to the direct distribution of grain and flour by railroad, it was forced to share that importance with the railroad system of the United States. The Pennsylvania Railroad and the Baltimore and Ohio Railroad competed directly with the Great Lakes, but the northeastern railroads utilized the Great Lakes in carrying Western products to the East.

CHAPTER V

THE INTEREST OF GRAIN DEALERS AND OTHER COMMERCIAL GROUPS OF THE GREAT LAKES IN NATIONAL POLITICS PRIOR TO THE CIVIL WAR

Having studied the economic development of the grain trade of the Great Lakes one may well ask what influence this trade had on political developments in the United States. The diversion of trade to the Great Lakes route which occurred in the period before the Civil War was fraught with political meaning due to its weakening of the transappalachian solidarity of the West and South and the consequent strengthening of the economic bonds between the West and East. This partial realignment of sectional economic connections should be taken into account along with anti-slavery agitation in explaining Northern unity in 1861.[1]

The trade on the Great Lakes also influenced political developments in another respect. The continued existence of

---

[1]The realignment was only partial because the West continued to depend for its markets upon both the South and the East. These economic factors, according to Professor Carl R. Fish, were influential in the decision of the Ohio Valley to side with the East in opposing the secession of the South. Carl R. Fish, "The Decision of the Ohio Valley," American Historical Association, Annual Report for the Year 1910, 155-164. Further discussion of this point would require entering into the differing antecedents of the population components of the West--a subject not germane to the present investigation.

the grain trade depended on the maintenance of the navigation of the Great Lakes, and in the pre-Civil War period there were certain obstacles to shipping on those Lakes which threatened to hamper that trade seriously. These obstructions to navigation existed at practically all of the harbors on the Great Lakes and also in the narrow channel between Lake Huron and Lake Erie, comprised of the St. Clair River, Lake St. Clair, and the Detroit River. The commercial interests of the Great Lakes wished to have the Federal government take action to remove these obstructions; but the Democratic party, which was in power during most of the two decades prior to the Civil War, was, for various reasons, opposed to a program of federally-financed internal improvements. The demands for the improvement of the navigation of the Great Lakes thus went largely unheeded, and led by the grain dealers, the commercial interests of the Great Lakes were therefore forced to attempt to maintain the navigation of the Great Lakes by their own efforts and by the efforts of local government. Finding these efforts, however, to be an unsatisfactory substitute for Federal action, the grain dealers and shipowners of the Great Lakes were prepared to support any political party which would promise federal appropriations for internal improvements.

The failure of the national administration to consider the interests of the commerce on the Great Lakes was one of the factors which explains the support given the Republican party by the East and the West in the crucial presidential

election year of 1860.[2] The Republican party was an avowedly anti-slavery organization, but its program was given a much wider appeal by the promises (as recorded in its platform of 1860) of federal appropriations for river and harbor improvements, free homestead laws, and easy naturalization laws.[3] Each of these promises was directed to a specific group in the West. The promise of federal appropriations for rivers and harbors was directed to the commercial men of the West, both on the Great Lakes and on the Mississippi River system; the promise of free homesteads was directed to Western farmers and to the aspirations of Eastern workingmen; and the promise of easy naturalization laws held a very strong appeal to the large foreign-born element in the population of the West in 1860. This latter promise also appealed to the large immigrant group in the population of the eastern United States. In addition the Republican party in its platform of 1860 mollified Eastern manufacturing interests and Western wool producers by the promise of a protective tariff.[4]

---

[2]See the election results by counties shown in map form in Charles O. Paullin and John K. Wright, Atlas of the Historical Geography of the United States, plate 105.

[3]Kirk H. Porter, comp., National Party Platforms, 57-58.

[4]Ibid.,58. For further information on the use of these issues by the Republican party, see William E. Dodd, "The Fight for the Northwest, 1860," American Historical Review, XVI (1911), 774-788; Richard Hofstader, "The Tariff Issue in the Civil War," American Historical Review, XLIV (1938), 50-55; Thomas M. Pitkin, "Western Republicans and the Tariff in 1860," Mississippi Valley Historical Review, XXVII (1940), 401-420; Donnal V. Smith, "The Influence of the Foreign-Born of the Northwest in the Election of 1860," Mississippi Valley Historical Review, XIX (1932), 192-204; Andreas Dorpalen,

A detailed examination of the grievances which brought the grain dealers and the commercial men of the Great Lakes to support the Republican party in 1860 entails an investigation of the following subjects: the obstructions to navigation on the Great Lakes, the action by federal, state, and local government, and by commercial groups to remove those obstructions, and the political capital which the Whig and the successive anti-slavery parties (the Liberty party of 1840, the Free Soil party of 1848, and the Republican party of 1854) made of the failure of the Federal government to deal successfully with the problems of navigation on the Great Lakes.

In the period before the Civil War the obstructions to navigation which hampered the use of the Great Lakes as an artery of trade between the East and West were of both a local and a regional nature. The local problems were to be found at every important harbor on the Great Lakes. All of the harbors on the Great Lakes are at the mouth of rivers (except for the natural harbor at Erie, Pennsylvania), and at the entrances to these harbors, where the river current meets the Lake shore current, sandbars are constantly in the process of formation.[5] Consequently, in the period before the Civil War regular dredging was required in order to keep

---

"The German Element and the Issues of the Civil War," Mississippi Valley Historical Review, XXIX (1942), 55-71.

[5]House Reports, No. 314, 34 Congress, 1 session, 15-16.

the harbor entrances open to shipping, and if this dredging was not done the commercial interests of the port were apt to suffer.

In addition to the purely local harbor problems which existed at each port on the Great Lakes a regional problem which affected all the commercial men of the Great Lakes existed in the navigation of the narrow channel between Lake Huron and Lake Erie. This channel, was obstructed by a low depth of water at two points. The more serious obstruction to navigation in this waterway existed at the mouth of the St. Clair River at the point where that river flows into Lake St. Clair. At that point the St. Clair River divides into a number of channels which meander through the St. Clair delta, the so-called "St. Clair Flats."[6] The north channel through this delta, as it was the deepest, was used for shipping until 1858 when the Federal government dredged the more direct south channel and opened it to shipping.[7]

Until 1858 the draught of vessels built on the Great Lakes was determined by the depth of water in the north channel of the St. Clair River.[8] Usually this depth was about

---

[6]Pamphlet in University of Michigan Transportation Library, unsigned, A Link in the Chain, A Ship Canal between Lake St. Clair and Lake Erie (Detroit, n. d.), 26.

[7]House Documents, No. 66. 27 Congress, 3 session, 5; William L. Bancroft, "Memoir of Capt. Samuel Ward, with a Sketch of the Commerce of the Upper Lakes," Michigan Pioneer and Historical Society, Collections, XXI (1892), 360.

[8]Canadian Sessional Papers, No. 54 (1871), 37.

nine feet, but because of fluctuations in the level of the Great Lakes, it occasionally dropped as much as three feet below that level.[9] At such times it was necessary to lighter the cargoes of vessels through the channel, and it was not uncommon for vessels to get "stuck in the flats." The north channel was so narrow that when one vessel went aground all the vessels behind it were held up. This problem became particularly serious during the low stages of water in 1846 and in 1854. In the latter year the number of vessel days lost at the Flats amounted to 5,566, and the sum of $660,126.56 was paid for lighterage and damages by collision.[10] During the season of navigation in that year vessels sometimes had to wait one and often two weeks in order to pass through the Flats. The problem became particularly severe toward the close of navigation when the produce movement was at its height.[11]

Although these occasional interruptions to navigation at the Flats were serious enough in themselves, an even more serious effect of the obstruction at the Flats was the permanent limitation which it placed on the size of the vessels which could be built and operated on the Great Lakes.

---

[9]Thomas E. Blackwell, Descriptive Statement of the Great Water Highways of the Dominion of Canada, 22.

[10]Lloyd Graham and Frank H. Severance, The First Hundred Years of the Buffalo Chamber of Commerce, 44.

[11]David Wentworth, Annual Review of the Trade, Commerce and Manufactures of Buffalo for the Year 1854, 7.

This limitation restricted the amount of cargo which could be carried and therefore increased freight costs. After the opening of the twelve-foot lane through the south channel of the Flats in 1858, freight rates on grain on the Great Lakes dropped sharply because as a consequence of this improvement vessels could carry larger cargoes.[12]

Another obstruction to shipping on the Great Lakes was also located in the channel between Lake Huron and Lake Erie: at the Lime-Kiln crossing in the Detroit River. The Detroit River is choked with islands, and the deepest channel down the river varies from one side of the islands to the other. Therefore, at certain points vessels must cross over from one channel to the other. The Lime-Kiln crossing, so named from a lime-kiln which was formerly operated on the Canadian shore at that point, was particularly hazardous because of the swift current and the danger from a rocky ledge known as Ballard's Reef. Several suggestions for the improvement of the narrow shipping lane at this point were made in the period before the Civil War, but since the depth of water at the Lime-Kiln crossing was not so shallow as at the St. Clair Flats action to improve the channel at this point was not taken until after the Civil War.[13]

---

[12]Robert C. Douglas, Report . . . on the Necessity of Deepening the Welland Canal and on Transportation, Commerce and Canal Tolls, Affecting the St. Lawrence Water-Route to the Sea-Board (1884), 8; Senate Reports, No. 307, 43 Congress, I session, II, 185.

[13]"Statement of Each Annual Appropriation and Allotment for the Improvement of Rivers and Harbors from August 11,

This limitation restricted the amount of cargo which could be carried and therefore increased freight costs. After the opening of the twelve-foot lane through the south channel of the Flats in 1858, freight rates on grain on the Great Lakes dropped sharply because as a consequence of this improvement vessels could carry larger cargoes.[12]

Another obstruction to shipping on the Great Lakes was also located in the channel between Lake Huron and Lake Erie: at the Lime-Kiln crossing in the Detroit River. The Detroit River is choked with islands, and the deepest channel down the river varies from one side of the islands to the other. Therefore, at certain points vessels must cross over from one channel to the other. The Lime-Kiln crossing, so named from a lime-kiln which was formerly operated on the Canadian shore at that point, was particularly hazardous because of the swift current and the danger from a rocky ledge known as Ballard's Reef. Several suggestions for the improvement of the narrow shipping lane at this point were made in the period before the Civil War, but since the depth of water at the Lime-Kiln crossing was not so shallow as at the St. Clair Flats action to improve the channel at this point was not taken until after the Civil War.[13]

---

[12]Robert C. Douglas, Report . . . on the Necessity of Deepening the Welland Canal and on Transportation, Commerce and Canal Tolls, Affecting the St. Lawrence Water-Route to the Sea-Board (1884), 8; Senate Reports, No. 307, 43 Congress, I session, II, 185.

[13]"Statement of Each Annual Appropriation and Allotment for the Improvement of Rivers and Harbors from August 11,

Another regional problem was the need for harbors of refuge. Navigators on the Great Lakes, unlike their counterparts on the oceans, were faced with a "dangerous proximity of coast, upon which vessels must be thrown in a long-continued gale, whilst on the ocean there is generally room to drift until the storm is over."[14] This problem was particularly acute on Lake Michigan because of the absence of projecting head-lands or islands behind which vessels might find safety when a storm threatened. Furthermore the potential harbors of refuge along the coast, all of them at the mouths of rivers, were blocked by sandbars. When federal appropriations for harbors of refuge were sought, Lake interests discovered, however, that Congress was often skeptical of the wisdom of creating a harbor where there was little or no commerce. Consequently, vessel losses on the Great Lakes, and on Lake Michigan in particular, were unnecessarily heavy, and insurance costs both on vessels and cargoes were unnecessarily high.[15] This led a Milwaukee merchant in 1840 to express the following bitter words: "The steamboat Champlain, the brig Queen Charlotte, and four or five schooners, are ashore, and some of them total wrecks, and what a pity it is that they were not all loaded with Senators and members of Congress."[16]

1790, to March 3, 1887, Arranged by States so Far as Practicable," Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session, 450.

[14] House Executive Documents, No. 66, 27 Congress, 3 session, 3.

[15] Senate Miscellaneous Documents, No. 234, 27 Congress, 3 session, 17-34.

[16] House Miscellaneous Documents, No. 236, 26 Congress, 1 session, 6.

In the period from 1825 to 1838 the policy of the Federal government toward appropriations for the Great Lakes was very generous. Regular, almost yearly appropriations were made for the various harbors on Lake Ontario and Lake Erie, and work was also begun at various harbor sites on Lake Michigan. There were no appropriations in this period for the improvement of the St. Clair Flats, but because of the size of the vessels in use at the time there was no pressing need for such action.[17]

However, the policy of the Federal government toward appropriations for the Great Lakes underwent a marked change in the period from 1838 to 1860. During that period there were eight major appropriations bills for the Great Lakes passed by Congress. Seven of these bills met with a presidential veto. Three of the latter, however, were passed over the veto: the general harbor appropriation bill of June 11, 1844, the special St. Clair Flats appropriation of July 8, 1856, and the special appropriation of July 7, 1856, for the improvement of St. Mary's River between Lake Superior and Lake Michigan. The general harbor appropriation bill of August 30, 1852, was approved by the Whig president, Millard Fillmore.[18]

---

[17] Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session, 451.

[18] "Veto Messages of the Presidents of the United States, with the Action of Congress thereon," Senate Miscellaneous Documents, No. 53, 49 Congress, 2 session, 181, 221, 255, 256.

The four appropriations which failed to pass over the presidential veto were the two general harbor appropriation bills vetoed by Polk on August 3, 1846, and December 15, 1847, the general harbor appropriation bill vetoed by Pierce on December 30, 1854, and a special St. Clair Flats appropriation vetoed by Buchanan on February 1, 1860.[19] Polk's vetoes coincided with a period of low water on the Great Lakes and resulted in the calling of an impressive Harbor and River convention of the commercial men of the Great Lakes which met in Chicago on July 5, 1847. Buchanan's veto of the St. Clair Flats appropriation in 1860 well suited Republican campaign strategy in the presidential election of that year. As a part of this strategy Buchanan was also presented with bills for land grants for agricultural colleges, for the improvement of the mouth of the Mississippi River, and for free homesteads, each of which he vetoed.[20] Aside from the appropriation measures which have been mentioned, there were no further appropriations for the harbors on the Great Lakes until the Buffalo harbor appropriation

---

[19] Ibid. 186, 194, 266; E. C. Nelson, "Presidential Influence on the Policy of Internal Improvements," Iowa Journal of History and Politics, IV (1906), 67.

[20] Land grants for agricultural colleges, vetoed February 24, 1859; improvement of the mouth of the Mississippi River, vetoed February 6, 1860; free homesteads, vetoed June 22, 1860. Senate Miscellaneous Documents, No. 53, 49 Congress, 2 session, 259, 274, 281.

of July 6, 1864, and the huge general harbor appropriations of June 23, 1866.[21]

There were several reasons for the marked change in the policy of the Federal government toward appropriations for the Great Lakes (and the Mississippi River system) following the year 1838. One reason was that the appropriations for the improvement of the navigation of the Great Lakes had begun in the period of enthusiasm for internal improvements which had been engendered by the successful completion of the Erie Canal. This enthusiasm was brought up short by the Panic of 1837 and the years of depression which succeeded that panic. The Federal government during the depression years after 1837 found it necessary to limit its expenses because of the reduction in Federal revenues.

Even before 1837, however, doubts as to the constitutionality of a program of federally-financed internal improvements were being expressed by those who wished to restrict the powers of the general government wherever possible. In order to allay these constitutional objections, Henry Clay, the tactician of the Whig party, first suggested in April, 1832, a plan for the distribution of the federal

---

[21] Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session, 456, 482-487. Emergency appropriations for the repair of the piers at Chicago ($87,000) and at Oswego ($30,000) were made in June, 1860. These appropriations were intended ostensibly for light-house maintainence, to which Buchanan had no objections, and were approved by the president. The money was expended on the harbor piers. "Report of the Chief Topographical Engineer, 1860," Senate Executive Documents, No. 1, 36 Congress, 2 session, II, 551-552.

surplus revenues to the states. Such a plan was enacted into law in June, 1836; but the disappearance of the federal surplus in the following year ended the payments to the states. Again in 1841, however, Clay was able to secure the passage of a distribution measure by the inclusion of an amendment which stipulated that the distribution should cease whenever it became necessary to levy import duties higher than the 20% maximum provided for by the tariff of 1833. The Tariff Act of 1842, however, exceeded this maximum, and as a consequence payments to the states under the Distribution Act of 1841 were ended within a short time after they had begun. There were no other distribution acts passed in the period before the Civil War.[22]

Another objection to federal appropriations for internal improvements was the charge that these appropriations were liable to grave abuses which often resulted in the wasteful expenditure of public moneys. It was this view as well as the constitutional point of view that John C. Calhoun, the spokesman for the Southern Democrats, expressed to the delegates of the South-Western Convention of Mississippi River commercial interests which met in Memphis, Tennessee in November, 1845.

> It is the genius of our government [Calhoun declared] to leave to individuals what can be done by individuals, and to individuals and States, what can

---

[22]Erik M. Eriksson, "Distribution of Surplus Revenue," in James T. Adams (ed.), Dictionary of American History, V, 209; E. G. Bourne, The History of the Surplus Revenue of 1837, 28-34. The Democratic party formally asserted its opposition to distribution measures in its platform of 1848. Porter, National Party Platforms, 19.

> be done by them, and to restrict the power of the General Government to that which can only be effected through its agency and the powers specifically granted. Indeed, setting all constitutional objections aside, it would be improper as a mere matter of expediency to invoke the aid of the General Government in the execution of any one object which could be effected by the agency of individuals or States. In a country of such vast extent as ours, local expenditures are liable to grave abuses. They are sure to lead to a system, to use an undignified phrase, of "log rolling" and to terminate in useless and wasteful expenditures of public money.[23]

The abuse of "log rolling" in federal appropriations for internal improvements referred to by Calhoun had first been struck at by President Andrew Jackson in his Maysville Road veto of May, 1830. Jackson's policy of carefully scrutinizing appropriations for internal improvements was also followed by his successor in office, Martin Van Buren. Several years after Van Buren left the presidential office he recalled this policy in these words:

> Among the difficult subjects that occupied the attention of my illustrious predecessor, whilst I was a member of his cabinet, and of myself whilst President, that of river and harbor improvements by the aid of the federal government, occupied a prominent position. Whilst the conviction was general with ourselves and others, that a large class of them was deserving of aid from that quarter, and that it could be extended to them without exceeding the prescribed powers of the government, all were strongly impressed with a deep sense of the liabilities to abuse, to which the legislation of Congress upon the subject was unavoidably exposed. The matter was one of frequent and earnest conference between President Jackson and myself, during the first two years and the whole of his last term. The result was a conviction that no better course could be adopted than to approve such bills as we were satisfied came within the class referred to, and to do

---

[23] Journal of the Proceedings of the South-Western Convention, began and Held at the City of Memphis, on the 12th November, 1845, 11-12.

> all that could be rightfully done by the Executive, to prevent abuses by appropriations for objects that were not entitled to the aid of the Federal government.[24]

In furtherance of this policy of carefully examining the proposals for internal improvements on the Great Lakes, Congress on March 3, 1841, made an appropriation of $15,000 for the "Hydrographical Survey of Northern and Northwestern Lakes." This survey was authorized for the double purpose of furnishing charts to Lake navigators and of determining the works of improvement on the Great Lakes which were really necessary.[25]

Despite this attempt to determine the need for improvements on the Great Lakes, a wide difference of opinion with respect to the problem continued to be evident in Congress. As noted above, this difference of opinion was particularly apparent with respect to the need for harbors of refuge on the Great Lakes--a problem which was unique to the Great Lakes and not well understood by those who were unacquainted with the hazards faced by Lake navigators.[26]

---

[24]Cited in O. C. Gardiner, The Great Issue: or, the Three Presidential Candidates; being a Brief Historical Sketch of the Free Soil Question in the United States, from the Congress of 1774 and '87 to the Present Time, 148-149.

[25]Annual appropriations were made for this study in the years after 1841, and the United States Lake Survey continues today as an agency of the Corps of Engineers of the United States Army. Corps of Engineers, United States Army, The United States Lake Survey (1939), 34-35.

[26]The danger of snags and other obstructions to navigation in the Mississippi River could be understood more easily than the danger of the lack of harbors of refuge on the Lakes. Senator W. S. Archer, of Virginia, for example, could see nothing but political jobbery in the requests to create

Further complicating the question of the real need for internal improvements on the Great Lakes were the irresponsible political tactics employed by the Whig party. Members of the Democratic party justly charged that the Whigs, by including unnecessary improvements in requests for river and harbor appropriations, sought to appeal to the local economic interests of Congressmen and thereby to cut across party lines and destroy the unity of the Democratic majority in Congress.[27] The members of the Democratic party, because of this technique of log rolling employed by their opponents, were forced to oppose appropriations for rivers and harbors in order to preserve party unity. The Whigs, in turn, branded this necessary opposition to log-rolling techniques as a complete disavowal by the Democratic party of the need for internal improvements.[28]

---

harbors on the Lakes where no commerce existed. Archer wrote the executive committee of the Chicago Harbor and River Convention as follows: "I have whilst a member of the Senate of the United States, given my vote for the improvement of the Mississippi and its tributaries. I have withheld my vote at the same time, from the [Lake] Harbor bills presented because I had, on every occasion, cause to entertain the belief, that subjects had found insertion in the Bills, by what is denominated log-rolling and jobbing, which had no just title to their place from their intrinsic utility. . . ." W. S. Archer to Messrs. Judd and others, July 26, 1847, Proceedings of the Harbor and River Convention Held at Chicago, July Fifth, 1847, 79.

[27]River and Harbor Improvements. Whig Pretensions Exposed. The Best Policy of Our Party is to Refute Whig Falsehoods with Democratic Truths (1852), 6.

[28]See Webster's letter to the Chicago Harbor and River Convention, below, p. 126.

Although the Democratic party was not entirely opposed to a program of federally-financed internal improvements, its stand on that issue had the practical effect of preventing effective federal action in coping with the obstructions to navigation on the Great Lakes. As a consequence the commercial men of the Great Lakes were forced to turn to their state and local governments in order to maintain the harbor works on the Great Lakes.

In his veto of an appropriation for the Great Lakes, President Polk on December 15, 1847, outlined his objections to the unnecessary improvements included in that measure and recommended that the state governments levy tonnage duties (which could be applied with the consent of Congress) and use the proceeds to maintain the harbors on the Great Lakes.[29] This proposal, however, led Samuel Ruggles, a former New York Canal Commissioner who through his business connections was personally interested in the grain trade, to reply that the problem of the Lake Harbors was one for federal action. The state governments were unable to use their general revenues to improve the harbors, said Ruggles, because of clauses in their constitutions, adopted after the debacle of 1837, which prevented the states from expending money on public works.[30] Moreover, he argued, tonnage duties imposed by the states were an impractical solution:

---

[29]Senate Miscellaneous Documents, No. 53, 49 Congress, 2 session, 199.

[30]Samuel B. Ruggles, Defence of the Right and Duty of the American Union to Improve its Navigable Waters, in a

> . . . if the wit of man [said Ruggles] were taxed to devise a scheme utterly destructive of all trade, commerce and navigation upon our waters, a better one than this, of artificially obstructing them by hosts of collectors of tonnage duties imposed by local legislation could not be framed.[31]

Polk's suggestion for state-imposed tonnage duties was not followed, and the only action taken by a state government to improve the harbor facilities on the Great Lakes was that initiated by New York state in 1851, when Buffalo harbor was enlarged and improved. The state kept a careful account of the expenditures hoping in vain for reimbursement by the Federal government.[32] Elsewhere the maintenance of the Lake harbors became the task primarily of local governments, with the federal appropriations obtained in 1844 and 1852 furnishing some aid.

The harbor works at Milwaukee were improved in 1852 with the aid of the federal appropriation of that year; but owing to the inadequacy of the appropriation it was necessary to raise money locally to complete the project.[33] In Chicago

---

Speech at Constitution Hall, in the City of New York, October 6, 1852, 16. For a partial listing of the business connections of Ruggles in railroad and other enterprises see D. G. Briton Thompson, Ruggles of New York, 39-40; 101-102.

[31]Ruggles, Defence of the Right and Duty of the American Union to Improve its Navigable Waters, 21.

[32]Memorial of the Canal Board and Canal Commissioners of the State of New York, Asking for the Improvement of the Lake Harbors by the General Government (1858), 7.

[33]Ralph G. Plumb, "Early Harbor History of Milwaukee," Wisconsin Academy of Sciences, Arts, and Letters, Transactions, XVII (1914), 187 ff.

where, as in Milwaukee, the problem of the formation of a sandbar at the entrance to the harbor required constant attention, the common council raised funds in 1849, 1854, and 1855 for dredging the harbor, with the Board of Trade directing the expenditure of the funds.[34] Dredging, however, required the use of the government steam dredge at Chicago; and in the summer of 1854 when the Board of Trade applied for the use of the dredge, the War Department rejected the request. Undaunted, the Board of Trade seized the government dredge, whereupon the War Department graciously permitted its use.[35] In 1858 with the harbor piers at Chicago badly in need of repairs, the government topographical engineer at that port adopted the expedient of using the government dredge to raise sand and then sold the sand and used the proceeds to make the necessary repairs.[36]

At other ports on the Great Lakes the harbors were also maintained by the local governments and the commercial men of the ports. All of these local efforts to maintain the harbors, however, depended on the use of the government-owned steam dredges. In 1856 the federal government maintained five steam dredges on the Great Lakes, but by 1860, because of the lack of appropriations to keep the machinery in repair,

---

[34]Taylor, History of the Board of Trade of the City of Chicago, 155, 188, 203.

[35]Ibid., 188.

[36]Senate Executive Documents, No. 1, 35 Congress, 2 session, II, 1001-1002.

all of these dredges had been sold.[37] As a consequence, on the eve of the Civil War, local efforts to maintain the harbors seemed to be on the point of collapse.

The regional problem posed by the St. Clair Flats as an obstruction to navigation on the Great Lakes had also, by 1860, assumed alarming proportions. Since 1840 the size of vessels in use on the Lakes had been keeping pace with the increase in trade, but by 1860, despite the earlier deepening of the channel, the depth of water in the St. Clair Flats served as an effective limit to the further increase in vessel capacity on the Great Lakes.[38]

As early as the spring of 1842 a commercial association of the vessel owners on the Great Lakes had begun the practice of marking the shipping channel through the Flats with buoys and staking out the channel in the Detroit River through the islands below Detroit.[39] Already by that year there were occasions when lightering was necessary at the Flats, and the channel was so narrow that the sides of vessels when they

---

[37] "Report of the Chief Topographical Engineer, 1856," Senate Executive Documents, No. 5, 34 Congress, 3 session, II, 361; "Report of the Chief Topographical Engineer, 1861," Senate Executive Documents, No. 1, 37 Congress, 2 session, 119.

[38] New York Produce Exchange, Report of the New York Produce Exchange, 1877, 239.

[39] "Report from the Secretary of War . . . on the Impediments to Navigation in Lake St. Clair. . . ," Senate Documents, No. 393, 27 Congress, 2 session, 3, 4.

passed through were swept by rushes.[40] The problem of the navigation of the Flats, however, first became particularly serious during the season of navigation in 1846. In that year and during the season of navigation the following year the water in all the Lakes reached an extremely low stage. James Barton, a Buffalo grain dealer, stated that this period of low water was due to a succession of two or three very dry and hot summers during which there was a deficient rainfall and great evaporation. Barton reported that in 1846 large vessels which were fully loaded found it dangerous to enter the harbors on Lake Erie, while at the St. Clair Flats two and sometimes four steamboats and other lighters were employed throughout the season in order that vessels might pass through that channel.[41]

During the season of navigation in 1846 the first attempt was made to deepen the St. Clair Flats channel. This attempt was initiated by several grain dealers in Buffalo who obtained the use of the government-owned steam dredge at Erie, Pennsylvania, and had it towed to the Flats. At that point, however, the entire project was abandoned because the financial aid which had been promised by other commercial interests in Buffalo was not forthcoming.[42]

---

[40] Ibid., 3.

[41] James L. Barton, Commerce of the Lakes. A Brief Sketch of the Commerce of the Great Northern and Western Lakes for a Series of Years (1847), 53. "The highest observed level of the lakes occurred in the summer of 1838, and the lowest in 1847, the difference in the two stages being about 4-1/2 feet. "U. S. Treasury Department, Bureau of Statistics, Report on the Internal Commerce of the United States, 1891, appendix no. I, 10.

[42] Barton, Commerce of the Lakes, 53.

In the general harbor appropriations of August 30, 1852, $20,000 was appropriated by the Federal government for improvement work at the Flats, the first federal appropriation to be made for the Flats.[43] This money, however, was exhausted in the purchase of a steam dredge to be stationed at Detroit, and no funds remained for the operation of the dredge.[44] The commercial men of the Great Lakes held a convention in Detroit on March 1, 1854, in order to devise plans to raise money for dredging work at the Flats. The delegates to this convention elected a president and a secretary, and after the appointment of committees they adjourned to meet in Chicago on the eighth day of March. This movement, however, failed to raise the needed funds.[45]

The season of navigation which followed the deliberations of the Detroit-Chicago convention was again a period of low water, and over $500,000 was lost by the commercial men of the Great Lakes in paying for lighterage and for damages by collision at the Flats.[46] With this disastrous season of navigation fresh in their minds, the Buffalo Board of Trade at a meeting in the Corn Exchange on March 28, 1855, initiated plans for a St. Clair Flats Convention to be held in Buffalo.

---

[43] Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session, 451.

[44] Senate Executive Documents, No. 73, 34 Congress, 1 session, 25.

[45] Taylor, History of the Board of Trade of the City of Chicago, I, 187-188.

[46] Graham and Severance, The First Hundred Years of the Buffalo Chamber of Commerce, 44.

This convention met on April 19, 1855, with grain dealers and shipowners from most of the Western Lake ports present. The cost of improving the navigation at the Flats was estimated at $35,000, but the convention was able to raise only $18,000. With this amount, however, and with assurances from the Canadian government that Canada would assume at least one-third of the cost, not to exceed $15,000, the convention determined to go ahead with the work of dredging.[47]

Permission was granted by the War Department for the use of the steam dredge stationed at Detroit but the Department would not permit the transfer and use of the dredges at Erie, Pennsylvania, and Chicago.[48] The government dredge at Detroit, however, had been sunk, and it was therefore necessary for the executive committee of the St. Clair Flats Convention to pay for raising the dredge and for the repair of the rusty machinery.[49] The committee also obtained the use of a smaller privately-owned dredge. Improvement operations were commenced at the south channel of the Flats in July, 1855, and extended until October 29 of that year. The project was supervised by an Army engineer.[50]

---

[47] Ibid., 44-55. For additional details of this convention and operations at the Flats, see "Report of the Chief Topographical Engineer, 1856," Senate Executive Documents, No. 73, 34 Congress, 1 session, 3, 4, 17-18, 28-30, 41.

[48] Senate Executive Documents, No. 73, 34 Congress, 1 session, 28.

[49] Ibid., 17 ff.

[50] Ibid., 4, 41.

Plans had been made to continue dredging operations the following year, but the funds available were exhausted by the operations during 1855. A contribution of $20,000 which the Canadian government voted for the project could not be used because that contribution was conditional on the completion of a channel of larger dimensions than was actually completed. The dredging operations in 1856 opened a channel of 13 feet in depth, 1,700 feet in length, and 50 feet in width. Within one year, however, this channel had filled so as to give a depth of only 10 feet.[51]

On May 5, 1856, Congress passed an appropriation of $45,000 for the continuance of the work at the Flats. President Pierce quickly vetoed this appropriation, but his veto was overriden and the measure became law on July 7, 1856. Dredging operations, however, were not resumed until 1857.

During 1857 and 1858 the $45,000 appropriated by the United States government and the $20,000 appropriated by the Canadian government were used to open a channel through the Flats 12 feet in depth, 6,000 feet in length, and 275 feet in width.[52] The topographical engineer recommended in his report for 1858, however, that the St. Clair channel be

---

[51] "Report of the Chief Topographical Engineer, 1857," Senate Executive Documents, No. 46, 34 Congress, 3 session, 10; Senate Miscellaneous Documents, No. 53, 49 Congress, 2 session, 255-256.

[52] Senate Executive Documents, No. 1, 35 Congress, 2 session, II, 1231.

given an additional depth of 4-1/2 feet in order to secure a depth of 12 feet during periods of low water.[53] A bill providing funds for the continuance of the work at the Flats was passed by Congress late in 1859, but President Buchanan vetoed this measure asserting that the work had already been satisfactorily completed and that it was "not too much to expect that it should be kept in repair by that portion of the commercial and navigating interests which enjoys its peculiar benefits."[54]

President Buchanan's attitude toward the improvement of the St. Clair Flats was typical of the position of the Democratic party with respect to internal improvements on the Great Lakes prior to the Civil War. The reasons for this position have already been indicated; what remains to be noted is the propaganda use made of it by the Whig party and the various anti-slavery parties. Spokesmen for the Whig party were much more temperate in their use of this issue than were the spokesmen of an anti-slavery persuasion; the Whigs were content to argue merely that the stand of the Democratic party with respect to internal improvements was inimical to the economic interests of the West, whereas anti-slavery agitators sought to show an identity between the Democratic party and the slave-holders of the South and

---

[53] Senate Executive Documents, No. 1, 37 Congress, 2 session, 121.

[54] Senate Executive Documents, No. 6, 36 Congress, 1 session, 3.

claimed that the latter were the real power which opposed internal improvements in the West.

The Harbor and River Convention held in Chicago on July 5, 1847 as a protest to Polk's vetoes of appropriations for the Great Lakes, affords an excellent example of the uses which the Whig party made of the Democratic party's position with respect to internal improvements. The original movement for the convention was initiated by William M. Hall, a loyal Democrat and the St. Louis agent for the Lake Steamboat Association, which ran passenger steamers between Chicago and Buffalo.[55]

Near the close of navigation in 1846, Hall started out from St. Louis for his winter home in Buffalo. He had already conceived the idea of a Chicago convention of Lake commercial interests which would rival the Southwestern River Convention held in Memphis in November of the preceding year.[56] The commercial men to whom Hall broached his idea in Chicago were delighted with the proposition, and thus encouraged, Hall made known his plan in Detroit, Cleveland, and Buffalo

---

[55]William M. Hall to Robert Fergus, November 17, 1881, Robert Fergus (comp.), Chicago River and Harbor Convention, July 5th, 6th and 7th, 1847, Origin, Proceedings, and Statistics (Fergus Historical Series, No. 18), 10. This compilation includes several letters from William M. Hall written to Fergus, a wide selection of newspaper material bearing on the convention, and a revised reprint of the proceedings of the convention. See also Mentor L. Williams, "The Chicago River and Harbor Convention, 1847," Mississippi Valley Historical Review, XXXV (1949), 607-626.

[56]Fergus, Chicago River and Harbor Convention, 10-11.

and began to develop newspaper support. Similar backing was given him when he explained his ideas in the East.[57] A meeting of Western men to organize the movement was held at Rathbun's Hotel in New York City on September 28, 1846. At this meeting James L. Barton, a Buffalo grain dealer, was elected chairman pro tem and placed in charge of arrangements for the convention.[58]

In its origins the Chicago Harbor and River convention was a genuine non-partisan movement of protest by the commercial men of the Great Lakes; the widespread support which it elicited is sufficiently explained by the concurrence of President Polk's veto with a period of extremely low water on the Great Lakes. When the convention assembled in Chicago, however, the leadership was taken over by the stalwarts of the Whig party who used the convention to influence the commercial interests of the Great Lakes to support the Whig party. Self-appointed delegates from nineteen states were present, and though the roster included all the leading commercial men of the Great Lakes, it also included a large number of the important leaders of the Whig party. The Whig newspaper editors, Thurlow Weed, of the Albany Evening Journal, and Horace Greeley of the New York Tribune, were present and sent daily reports to their newspapers from

---

[57] Ibid.

[58] New York Herald, September 29, 1847; Fergus, Chicago River and Harbor Convention, 18-22.

Chicago. Other Whig notables in attendance at the convention were Thomas Butler King, of Georgia; Governor William Bebb, of Ohio; Thomas Corwin, of Ohio; William Woodridge, of Michigan; Schuyler Colfax, of Indiana; John A. Rockwell, of Connecticut; Joseph R. Ingersoll, of Pennsylvania; and Abraham Lincoln, then an Illinois congressman. Horace Greeley estimated that two-thirds of the delegates present at the convention were Whigs.[59]

The general committee which had made the arrangements for the convention was composed entirely of bona fide commercial men of the Great Lakes.[60] In selecting the convention's presiding officers, however, each state represented at the convention chose one delegate, and the officers selected by these delegates were all prominent members of the Whig party. Edward Bates, of Missouri, was chosen president of the convention, and the list of vice-presidents and secretaries which was selected did not include a single member who was representative of the Great Lakes commercial interests.[61]

---

[59] New York Semi-Weekly Tribune, July 17, 1847; Fergus, Chicago River and Harbor Convention, 52-68, 142.

[60] Proceedings of the Harbor and River Convention held at Chicago, July Fifth, 1847, 3. These men were James L. Barton, of Buffalo; John W. Allen, of Cleveland; Augustus S. Porter, of Detroit; William D. Wilson and Byron Kilbourn, of Milwaukee; William Ogden, S. Lisle Smith, and George W. Dole, of Chicago; and A. B. Chambers, of St. Louis.

[61] Ibid., 6-7. In 1860 Schuyler Colfax and Horace Greeley urged the nomination of Bates as the Republican presidential candidate. Aside from his chairmanship of the Chicago convention in 1847 Bates was not well known. See Reinhard H. Luthin, The First Lincoln Campaign, 62-63.

Nevertheless, the convention maintained a semblance of political neutrality and William Hall, the originator of the convention, was convinced that the meeting was non-partisan.[62]

Despite Hall's views, however, an attempt was made to convince those present that Lewis Cass, then Democratic senator from Michigan, was opposed to internal improvements. In contrast to those persons who sent long letters to the convention espousing the cause of internal improvements, Cass sent but a very brief letter in which he merely explained his inability to be present.[63] Thurlow Weed characteristically reported that

> If Gen. Cass had any hold upon the confidence of the people of the West, his cold, formal, and almost disrespectful letter to this Convention, has forever blasted his hopes. Its first reading occasioned a general, broad laugh. The second reading changed the expression to one of withering scorn. And this was the scorn of men who wield the political power of Michigan, Illinois, Wisconsin, and, to a good degree of Ohio.[64]

Cass' letter was given wide publicity in the Whig press, and when in the following year, Cass was nominated as the Democratic candidate for president, the letter was widely printed in diminutive booklet form as a Whig campaign document.[65]

---

[62] Fergus, Chicago River and Harbor Convention, 12.

[63] Proceedings of the Harbor and River Convention held at Chicago, July Fifth, 1847, 34.

[64] Albany Evening Journal, July 14, 1847; Fergus, Chicago River and Harbor Convention, 153.

[65] Madison Kuhn, "Economic Issues and the Rise of the Republican Party in the Northwest" (Ph. D. thesis, University of Chicago, 1940), 75.

The attitude of the Democratic party toward internal improvements also came in for its share of abuse at the convention. Daniel Webster, in his letter to the convention, remarked:

> The truth is, that of the two great parties which have divided the country, one has been for internal improvements, and one against them; but in this latter party, individuals have been found, principally, I believe, from the Western and North Western States, who have voted for such Improvements . . . against the general voice of their party, and against the wishes and vetoes of the Executive Government. . . . This conduct is patriotic and honorable, and I hope will be imitated by others.[66]

Thurlow Weed reported from Chicago that the reading of Webster's remarks elicited "three hearty cheers."[67]

The speeches at the convention, as reported in summary form by Weed, were all directed toward various aspects of the constitutional bearings of the question of internal improvements. Thomas Corwin, in the keynote address to the convention, satirized the constitutional distinction which Polk, in his veto messages, had attempted to draw between foreign and coastal commerce and trade between the states:

> Congress has power to regulate commerce [said Corwin] between the several states. If you send a cargo of wheat from Chicago to Buffalo, a distance

---

[66]Daniel Webster to Messrs. Judd and others, committee, June 26, 1847, Proceedings of the Harbor and River Convention Held at Chicago, July Fifth, 1847, 63.

[67]Albany Evening Journal, July 14, 1847; Fergus, Chicago River and Harbor Convention, 153.

> of 1000 miles, crossing lake after lake, stretching away in their magnificent extent, would not one naturally think that this might be called commerce? But no, that is a mistake we are told. What is it then, my brother? Why that is trade (a laugh). But if you send the same cargo from New York to New Orleans, what is it then? Well, then it is commerce. Why is it not in the first instance as well as in the last? Oh! it is not on salt water (a laugh).[68]

The Whig leadership of the convention carefully refrained from expressions suggestive of sectional animosity between the North and South. It was for this reason that a letter from the Virginia congressman, John M. Botts, was not read to the convention. Horace Greeley reported that this letter was "spicy" and that it was withheld from the convention because it might have given "offence to some portion of the Delegates present."[69] Though the letter was not read to the convention it was published in the proceedings; what Greeley found "spicy" was apparently Botts' denunciation of the wasteful expenditures in the Mexican War, then in progress. Botts asserted that the Mexican War was "unnecessary and iniquitous," and that the money it required could much better be spent on internal improvements. Botts did not go so far as to charge, however, that the sole purpose of the war was to advance the interests of the South.[70]

The delicacy apparent in the manner in which the Whig leadership of the Chicago convention dealt with the sectional

---

[68] Ibid., 155.

[69] New York Semi-Weekly Tribune, July 17, 1847; Fergus, Chicago River and Harbor Convention, 140-141.

[70] Proceedings of the Harbor and River Convention Held at Chicago, July Fifth, 1847, 50-51.

overtones of the issue of internal improvements was not evident in the approach of anti-slavery interests to that issue.[71] Their approach was well expressed by the Chicago Daily Journal of August 12, 1846:

> 'It would seem the dictate of wisdom under such circumstances to husband our means and not waste them on comparatively unimportant objects.' Thus discourses James K. Polk in his veto message on the Harbor Bill, and the sentiment is an insult to the country. 'Husband our means' forsooth. Are not millions being squandered by this same James K. Polk for the invasion of Mexico and the extension of slavery? . . . . Are not the Treasury doors unbarred whenever the 'open seseme' is whispered by the slave-driver? And yet Mr. Polk outrages the intelligence of the people, his masters, by claiming, when a pittance is asked for a great Northern interest, that we must 'husband our means!' That the object for which we ask them is comparatively UNIMPORTANT![72]

This direct and forceful denunciation was in keeping with the transfer of the indignation of abolitionists from a mere moral reprobation of the institution of slavery to charges that the "slavocracy" of the South was aggressive and bent on thwarting the economic and legislative needs of the North. This "secularization," as one historian has described the change

---

[71] Four prominent anti-slavery leaders were present at the Chicago convention: Zebina Eastman, a Chicago publisher, who was a member of the local Chicago committee on arrangements; Dr. Charles V. Dyer, a leading anti-slavery advocate of Illinois; and Charles Durkee and Edward D. Holton, both of Wisconsin. The anti-slavery leaders present at the convention, however, did not address the delegates, and there were no outward manifestations of sectional animosity in the proceedings of the meeting. Theodore C. Smith, The Liberty and Free-Soil Parties in the Northwest, 341, 343, 64, 62, 63; Fergus, Chicago River and Harbor Convention, 66, 67, 25, 46, 54.

[72] Chicago Daily Journal, August 12, 1846; Fergus, Chicago River and Harbor Convention, 14.

in the anti-slavery movement, had already become apparent by the time of the formation of the Liberty party in 1840.[73] At that time it was impossible to substantiate the charge that the Democratic party was opposed to internal improvements; but another charge was freely made--that the diplomatic representatives of the national administration (particularly the representatives in Great Britain) displayed a partiality toward the economic interests of southern products and did not strive to open foreign markets to American wheat. Indeed, a statement to this effect was incorporated in the Liberty party platform of 1844.[74] Two years later this accusation lost its usefulness because the effect of several unusual crop years in Great Britain resulted in the repeal of the British Corn Laws (1846). Polk's veto of the harbor appropriation measure, however, which followed within two months after the repeal of the British Corn Laws, opened a fresh field for abolitionist propaganda.

On August 9, 1848, the former elements of the Liberty party plus the Barnburner element of the Democratic party of New York state, met in convention at Buffalo and formed

---

[73]Julian P. Bretz, "The Economic Background of the American Liberty Party," American Historical Review, XXXIV (1929), 30. See also Chauncey S. Boucher, "IN RE That Aggressive Slavocracy," Mississippi Valley Historical Review, VIII (1921), 30.

[74]Bretz, "The Economic Background of the American Liberty Party," American Historical Review, XXXIV, 257; Porter, National Party Platforms, 11. This charge was without foundation. See Reid B. Duncan, "Papers Relating to American Agricultural Exports: 1830-1850" (Ph. D. thesis, Cornell University, 1938), 116.

the Free Soil party. This party nominated Martin Van Buren for president, and although unsuccessful at the polls, split the New York state Democratic vote and gave the election to Zachary Taylor, the Whig presidential candidate in that year.[75]

The party platform of the Free Soil party in 1848 bears a number of similarities to the Republican platforms of 1856 and 1860. The Free Soilers, like the later Republicans, attempted to exploit the internal improvements question for its political value. However, the Free Soilers in their platform of 1848 not only declared for federally-financed internal improvements, but they also placed themselves on record as favoring free homesteads, higher tariff rates, cheaper postage, economy in government, and an extension of the popular election of federal officials.[76] The Republican platforms of 1856 and 1860 repeated several of these declarations of national policy, added others, and prefaced these promises, as did the Free Soil platform of 1848, with a lengthy denunciation of slavery and of the slave-owning South.[77]

The Whigs in their platform of 1856 (the last presidential election year in which that party offered a candidate) pointed to the dangers of disunity inherent in the

---

[75]Herbert D. A. Donovan, The Barnburners, 98 ff.

[76]Porter, National Party Platforms, 22-25.

[77]Ibid., 47-50, 56-59.

principles of the Republican party. But in the following year the nation was struck by a panic and the commercial men of the Great Lakes, who had watched their harbors fall into disrepair, were more immediately concerned with the economic disaster which threatened them rather than with the danger which the Whigs claimed faced the nation.[78]

> During the years 1857, 1858 and 1859 [reported a Buffalo grain dealer] the crops in these North-Western states were so very meager as to afford but a partial employment, and at very low rates of freight, for vessels upon the Lakes and boats upon the canals; affecting many other interests in the State, and especially in this city, largely dependent on this commerce for support.[79]

During this period of depression, the grain trade on the Great Lakes was seriously handicapped by the stringency in the money market in the East as well as in the West.[80] In 1857 several Chicago commission houses, with grain en-route to the East on the Erie Canal, were unable to raise money to pay the transportation costs; the canal-boats cleared from one local point to another while the commission houses raised money to make possible a move of another few miles.[81]

The Chief Topographical Engineer in his report on the Lake harbors in 1858 described all of the harbors on the

---

[78] Ibid., 50.

[79] E. S. Prosser, The Enlargement of the Locks of the Erie Canal (1869), 4.

[80] Taylor, History of the Board of Trade of the City of Chicago, I, 232.

[81] Ibid.

Great Lakes as being in a state of serious disrepair.[82] The Republican party in 1859, however, concentrated its legislative efforts on the passage of an appropriation for the further improvement of the St. Clair Flats, instead of on a comprehensive harbor bill. The problem of navigation at the Flats was a focus of dissatisfaction for all the commercial men of the Great Lakes. The agitation for a St. Clair Flats measure began on January 26, 1859, when the Republican-dominated legislature of Michigan sent to the chief executives of each of the northern states copies of a joint resolution calling for improvement of the St. Clair Flats.[83] The outcome of this agitation has already been indicated; late in 1859 a federal appropriation for the Flats was passed, only to be vetoed by President Buchanan on February 1, 1860.[84]

Only the Republican party in the election of 1860 promised federal appropriations for internal improvements.[85] The issue had become a sectional one, and the only way by which the commercial interests of the Great Lakes could gain what they wanted was to vote for a sectional party--the Republican party. The victory of the Republican party gave

---

[82]"Report of the Chief Topographical Engineer, 1858," Senate Executive Documents, No. 1, 35 Congress, 2 session, II, 1135, 1170, 1173, 1183, 1101.

[83]Michigan Senate Journal, 1859, 760; printed in full in New York Assembly Documents, No. 71 (1859).

[84]Senate Miscellaneous Documents, No. 53, 49 Congress, 2 session, 266-274.

[85]Porter, National Party Platforms, 51 ff.

grain dealers and shipowners of the Great Lakes the federal appropriations they wanted. For example, in the nine years from 1864 to 1873, $711, 085 was appropriated for the improvement of the harbor at Buffalo whereas in the thirty-four years from 1826 to 1860 only $262,895.37 had been appropriated for that purpose. The appropriations for other improvement work on the Great Lakes in the post-Civil War period show a similar increase.[86]

---

[86] Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session, 456.

CONCLUSION

The year 1873 serves as a convenient point of demarcation in terms of both the emergence of a new pattern of commerce in the grain trade and of the beginning of changes which were to end the predominance of grain-growing in the East North Central area. The changes in the grain trade brought about by the telegraph and railroad were gradual in their development, but the new pattern of commerce had clearly emerged by 1873. In addition this same year serves as a convenient point to mark the beginning of another gradual development: the westward movement of the center of grain production into the trans-Mississippi River area.

In 1873 the agricultural potentialities of the United States had only begun to be realized. West of the Mississippi River lay a vast region relatively unexploited by the American farmer. But before the frontier of wheat production could advance into this area new varieties of wheat, adapted to the climatic conditions of the region, were required. Winter wheat could not survive in the northern section of this area, in Minnesota and in the Dakotas; yet the hard red spring wheats which were well adapted to a cold climate and were introduced after 1860 yielded a low-quality flour. The red-colored bran of this type of wheat shattered in the course of the milling process and flecked the flour giving

it an orange cast.[1] The farmer in the far north therefore found that his wheat sold at a discount. In the early 1870's, however, the millers in Minneapolis, by adopting new milling techniques (which first had been developed in Europe), were able to eliminate the fine specks of bran and at the same time preserve the high gluten content of the hard red spring wheat.[2] This "new process" flour was a better bread-making flour than had yet been produced in the United States, and on the basis of the new value given to hard red spring wheat the frontier of wheat production advanced into the northern plains region. The wheat and flour of this area were shipped to market via the Lake Superior ports of Duluth and Superior, and the statistics of the grain movement through the St. Mary's Falls Canal, between Lake Superior and Lake Huron, serve as a measure of the development of this trade. In 1870 there were only 32,007 barrels of flour and 49,700 bushels of wheat shipped eastward

---

[1]With white wheats (white bran), the dominant sort before the 1870's, this problem did not arise. The white wheat berry was not so hard as the red spring wheat berry and the bran did not shatter in the course of the milling process. Hard red spring wheat was introduced in the United States via Canada from varieties grown near the port of Danzig. Carleton R. Ball, "The History of Wheat Improvement," Agricultural History, IV (1930), 55-67. See also George D. Rogers, "History of Flour Manufacture in Minnesota," Minnesota Historical Society, Collections, X, 35-55.

[2]The new milling technique consisted of high grinding in order to crack the bran whereupon the bran was removed by a "middlings purifier." The essential principle of the purifier was the use of an air blast. The middlings were then ground into flour. Knight Neftel, "Report on Flour Milling Processes," Tenth Census of the United States, III, 564-569.

through the canal, but the grain movement steadily increased in the following years. In 1873 there were 136,411 barrels of flour and 2,119,997 bushels of wheat shipped eastward.[3]

Meanwhile in the central Great Plains area hard red winter wheats were introduced in 1873 by a group of German Mennonites who had emigrated from southern Russia and settled in Kansas. These wheats were well adapted to the dry summers and rather dry winters of the central Great Plains and provided the basis for a further advance of the wheat frontier. The wheat and flour of this area were shipped to market through Kansas City and via the trunk-line railroads to the East.[4]

These new wheat varieties thus made possible a further westward movement of the center of grain production in the United States. The grain crop which had provided the sinews for the development of the East North Central area began after about 1873 to afford a cash crop for the more western

---

[3]The statistics of grain movement through the St. Mary's Fall's Canal (completed by the State of Michigan in 1855) are given in U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, new series, VII (January, 1900), 1990. For the development of the wheat economy in the northern region, see Edward Van D. Robinson, Early Economic Conditions and the Development of Agriculture in Minnesota; Merrill E. Jarchow, "King Wheat," Minnesota History, XXIX (1948), 1-28. The development of the wheat economy in the plains area of Canada receives attention in Edward Porritt, "Canada's National Grain Route," Political Science Quarterly, XXXIII (1918), 344-377.

[4]Ball, "The History of Wheat Improvement," Agricultural History, IV (1930), 63-68; Mark A. Carleton, "Hard Wheats Winning their Way," U. S. Department of Agriculture, Yearbook, 1914, 21-34. For a study of the development of the wheat economy in this area see William D. Bracke, Wheat Country.

regions of the United States.

The year 1873 thus provides a convenient vantage point from which we may look back on the development of the grain trade of the Great Lakes. By 1873 the annual receipts of grain and flour at Buffalo by Lake had passed the 70,000,000-bushel mark; yet there were men living in Buffalo then who could remember when the grain trade of the Great Lakes had been numbered in mere thousands of bushels.[5]

The changes in marketing which occurred in the course of the development of the Great Lakes grain trade were compressed into the space of a lifetime and therefore followed one on the other with an unparalleled swiftness. Despite the rapidity of change, however, certain stages of development may be recognized. The grain trade began in the era of canals; the Erie Canal and the Western canals which connected with the Great Lakes were, in effect, extensions of the transportation system that nature had already provided in the form of the Great Lakes. Over this improved transportation system--by canal-boats and vessels on the Lakes--the grain trade between the western and eastern United States was developed, and the characteristic features of the trade were evolved. Buffalo and Oswego, the two western termini of the New York canal system, developed as grain markets and became the entrepots of the trade in this early period. Almost as soon as this pattern of commerce was

---

[5]The statistics of the receipts at Buffalo are given in the appendix. The total figure includes flour reduced to its equivalent in wheat.

established, however, new forces--the telegraph and the railroad--had begun to alter it, and in the latter years of the 1850's the western grain markets began to replace Buffalo and Oswego as the entrepots of the trade.[6] By 1873 the modern pattern of the marketing system of the grain trade of the Great Lakes was well established.

The importance of such seaboard cities as New York, Boston, Baltimore, and Philadelphia may be explained by their transportation and port facilities and their communications with the interior. Similarly, the formative forces responsible for the prominence of such centers as Cleveland, Toledo, Chicago, and Milwaukee may be ascribed to a like set of factors. Chicago was an outlet for the vast prairie region of the United States, but it owed its early prominence (as did Cleveland, Toledo, and Milwaukee) not to the agricultural richness and fertility of its immediate hinterland, but to the geographic relationship of its port to the then more heavily populated southern part of the East North Central

---

[6]The world leadership of the Chicago grain market beginning after 1880 was due to the facilities for "hedging" which that market provided. The development of hedging was made possible by the development of future trading (the purchase or sale of grain for future delivery) which, in turn, was made possible by the adoption of standard grades of grain. Until about 1880 future trading served mainly speculative purposes. Hedging is a technique by means of which non-speculative buyers and sellers of grain are able to protect themselves from price fluctuations. A hedging sale or purchase consists of executing either a future sale or purchase at the same time that the commodity is either bought or sold in the cash market for delivery. The gain or loss in the two transactions approximately cancel out the effect of price changes during the period in which the commodity is processed or prepared for the consuming market. For the historical development of this technique, see George W. Hoffman, Hedging by Dealing in Grain Futures, 25 ff.

area, and to the transportation facilities which were built to these more distant hinterlands. A diversion of trade from the Mississippi River system to the Great Lakes was accomplished through the ports of Cleveland, Toledo, Chicago, and Milwaukee. The Great Lakes afforded a competitive route by which the agricultural produce of the East North Central area could be shipped to the New England-Middle Atlantic states market. The Mississippi River route continued to be used as a route to the Southern market for agricultural produce, but that route failed to hold on to the trade which had formerly gone down the river to New Orleans for shipment by coastwise vessels to the North Atlantic ports of the United States. The reasons for the failure of the Mississippi River route to retain this trade stemmed largely from the inadequacies of the commercial system available on that route, particularly in the early period when the competition and diversionary effect of the new route were first felt.

The major Lake port cities were thus outposts of the Great Lakes-Erie Canal route to the East and were within the commercial orbit of Buffalo, New York City, and Boston. Pittsburg, Louisville, Cincinnati, and St. Louis on the other hand were within the commercial orbit of Baltimore, Philadelphia, and New Orleans. The eastward transportation facilities of this latter commercial system across the Allegheny and Appalachian mountain ranges (which the Pennsylvania Main Line and the Chesapeake and Ohio Canal had failed to provide successfully) were made available in

the decade of the 1850's by the Pennsylvania and the Baltimore and Ohio Railroads. These two railroads traversed areas where coal was abundant and inexpensive, and this cheap fuel, in effect, leveled the mountains. However, these two railroads, owing to their lack of uniform gauge connections and through-freight arrangements with the Western railroads, were not able to divert even a portion of the grain and flour trade of the more westerly section of the East North Central area until their western connections were improved in the decade after the Civil War. The grain and flour freight traffic which the Pennsylvania and the Baltimore and Ohio Railroads carried directly to the East in the post-Civil War years originated at points which were distant from the Great Lakes and where the cost of shipment directly by rail was consequently less than the cost of shipment by the indirect route via the Great Lakes.

The effect of railroads was also felt on the Great Lakes grain route even though the all-rail routes paralleling the Great Lakes did not play an important part (except for the small wintertime shipment of breadstuffs) in the grain trade between the West and East. Because the all-rail routes could not compete over long distances with the vessels on the Great Lakes, the northeastern railroad systems--the New York Central, New York and Erie, and Vermont Central--depended on Lake vessels in making their connections with the Western railroads. By 1860 these railroad systems had organized their own propeller lines on the Great Lakes in order to

improve the facilities for heavy freight shipments between the West and East. The railroads in the eastern United States were able to compete successfully with the Erie Canal-coastwise system of distribution of grain and flour owing to the much wider system for distribution which these railroad networks provided.

In two respects the grain trade of the Great Lakes had an influence on political developments in the period before the Civil War. The growth of trade on the Great Lakes-Erie Canal route brought an economic rapprochment between the West and the East. This economic interdependence was of political importance when the South seceded from the Union. But the support which Easterners and Westerners gave the Republican party on the eve of the Civil War was based on more than the economic ties which had grown up between the two sections. The Republican party made its anti-slavery principles more attractive by promising a program of legislative action which various groups in both the East and West wanted, a program which offered higher tariff rates, free homesteads, easier naturalization laws and appropriations for internal improvements. The commercial interests of the Great Lakes, associated together in the grain trade, were particularly interested in the latter promise. On the basis of these legislative wants a political rapprochment between the East and West became possible which paralleled the economic rapprochment which had developed between the two sections.

A merely descriptive account of the grain trade of the Great Lakes, however, fails to indicate the importance of that trade in the development of the interior of the North American continent. Grain supplied the West with purchasing power, and the West was able therefore to buy the manufactured goods of the East. This interchange of products (and the division of labor underlying it) was made possible by the cheap transportation which the Great Lakes afforded. The development of the interior of the North American continent displayed, in effect, a certain similarity to the earlier development of the American colonies on the seaboard: the exchange of products via the Great Lakes aided in the incorporation of the West as a part of the American economy just as the exchange of products via the Atlantic Ocean had facilitated the extension of Western civilization to the shores of the New World.

APPENDIX

I. Receipts of Flour and Grain at Buffalo by Lake, 1836-1898.

II. Eastward Shipments of Wheat From the Western Termini of the Erie Canal, 1835-1873.

III. Eastward Shipments of Flour From the Western Termini of the Erie Canal, 1835-1873.

IV. The Movement of Wheat and Corn on the Ohio and Erie Canal, 1833-1860.

V. The Movement of Wheat and Corn on the Miami and Erie Canal, 1842-1860.

VI. Shipments of Flour, Wheat, and Corn From Chicago, 1838-1873.

VII. Shipments of Flour, Wheat, and Corn From Milwaukee, 1845-1873.

VIII. Receipts of Flour and Grain at New Orleans, 1832-1862.

IX. Quantities of Flour and Grain Received at and Shipped From Montreal, 1846-1898.

X. Tonnage Carried by the New York Central Railroad, New York and Erie Railroad, and the New York Canals, 1853-1875.

XI. Chicago and New York Spring Wheat Prices, 1840-1889.

XII. Exports of Wheat and Wheat Flour From the United States, 1821-1893.

XIII. Exports of Corn and Corn Meal From the United States, 1821-1893.

Receipts of Flour and Grain at Buffalo, by Lake, 1836–1898.[1]

BUFFALO.

CALENDAR YEAR.	Flour.	Wheat.	Corn.	Oats.	Total flour and grain.	CALENDAR YEAR.	Flour.	Wheat.	Corn.	Oats.	Total flour and grain.(a)
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*		*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1836	199,178	304,000	204,355	28,040	1,220,531	1868	1,502,731	12,556,215	16,804,007	11,492,472	49,949,896
1837	126,805	450,350	94,490	2,553	1,184,635	1869	1,568,487	19,228,548	11,549,008	5,450,867	45,007,188
1838	277,620	926,117	34,148	6,577	2,567,887	1870	1,470,391	20,556,722	9,410,128	8,846,983	48,613,096
1839	294,125	1,117,262	.....	.....	2,362,851	1871	1,278,077	23,606,217	26,110,709	9,006,409	67,155,762
1840	397,142	1,004,561	71,337	.....	4,061,598	1872	762,502	14,304,942	34,643,187	6,050,045	62,280,332
1841	736,049	1,635,009	201,031	14,144	5,592,526	1873	1,259,205	30,618,372	28,850,626	5,972,246	73,636,536
1842	734,408	1,856,420	454,530	.....	5,687,468	1874	1,093,585	20,778,572	24,974,548	5,206,781	70,039,553
1843	917,517	1,827,941	223,906	2,489	6,642,619	1875	1,810,402	32,967,656	22,583,891	8,494,126	74,246,736
1844	915,000	2,174,500	127,978	18,017	6,910,718	1876	807,210	19,324,612	29,930,853	3,397,257	59,074,648
1845	746,750	1,770,740	54,200	23,309	5,581,790	1877	693,044	23,284,405	33,962,896	4,279,229	65,199,291
1846	1,376,529	4,744,180	1,455,258	218,300	13,386,167	1878	911,980	35,419,136	33,133,853	5,122,972	81,646,952
1847	1,837,000	6,489,100	2,862,800	446,000	19,153,187	1879	897,105	37,788,501	32,990,998	1,104,783	78,885,354
1848	1,249,000	4,520,117	2,298,000	560,000	14,640,012	1880	1,317,811	49,510,229	62,214,417	649,350	113,942,927
1849	1,207,435	4,943,978	3,321,651	362,384	14,665,188	1881	1,051,250	18,495,230	31,434,830	3,585,737	62,068,895
1850	1,103,039	3,681,847	2,533,378	357,580	12,059,559	1882	1,199,350	26,050,030	21,694,530	1,650,170	56,830,240
1851	1,258,294	4,167,121	5,988,775	1,140,340	17,740,781	1883	2,071,570	24,105,420	31,975,040	3,226,900	76,079,930
1852	1,299,213	5,549,778	5,136,740	2,596,231	20,390,504	1884	2,615,510	32,469,710	18,538,240	3,174,730	70,041,530
1853	975,587	5,420,043	8,005,793	1,580,655	15,956,526	1885	2,903,280	27,130,400	21,028,230	767,580	64,329,230
1854	739,756	3,510,782	10,108,933	4,401,739	22,252,235	1886	4,582,190	41,430,440	29,155,370	1,014,670	95,425,780
1855	936,761	8,022,126	9,711,430	2,693,222	24,472,278	1887	4,001,360	48,111,180	30,199,490	4,650,280	104,737,710
1856	1,126,048	8,465,671	9,633,277	1,733,382	25,753,967	1888	5,244,030	27,518,110	36,422,270	7,897,310	93,448,150
1857	845,953	8,334,179	5,713,611	1,214,760	19,578,695	1889	5,480,710	26,051,600	47,127,150	14,309,800	118,273,430
1858	1,536,109	10,671,550	6,621,668	2,275,231	26,812,980	1890	6,245,580	24,868,630	44,136,060	13,860,780	120,540,700
1859	1,420,333	9,234,032	3,113,653	394,502	21,530,722	1891	7,093,340	76,945,960	29,616,390	12,454,150	161,459,720
1860	1,122,535	18,502,649	11,886,217	1,269,594	37,053,115	1892	9,746,120	78,243,560	32,377,780	16,500,250	181,769,690
1861	2,159,591	27,105,219	21,024,657	1,797,905	61,460,601	1893	10,502,080	66,243,750	40,339,970	20,700,150	188,730,370
1862	2,846,022	30,455,831	24,388,627	2,624,932	72,872,454	1894	11,428,530	50,194,130	29,078,520	15,560,230	161,401,815
1863	2,978,089	21,240,348	20,086,962	7,322,187	64,735,510	1895	8,971,710	47,256,005	37,579,311	22,231,271	163,755,128
1864	2,048,530	17,677,549	13,478,681	11,682,637	51,177,140	1896	10,284,184	54,411,207	47,811,010	40,107,490	215,352,734
1865	1,788,393	12,437,888	13,840,031	8,494,799	51,415,188	1897	12,440,617	56,565,610	56,932,625	64,140,618	261,603,688
1866	1,213,543	10,479,684	27,894,798	10,227,472	58,389,687	1898	10,971,653	83,872,837	67,866,073	45,501,233	267,395,434
1867	1,449,056	11,879,685	17,673,638	10,963,166	50,700,060	1899	9,068,873	48,608,014	53,843,227	26,469,401	191,136,644

a Including barley and rye, as well as flour, wheat, corn, and oats.

Note.—For several years prior to 1877 the receipts from Canada by rail were included. The totals are based upon the assumption that a barrel of flour is equivalent to five (5) bushels of wheat. The usual ratio is at present 1 to 4½.

[illegible] Treasury Department Bureau of Statistics Monthly Summary of Commerce and [illegible], New Series, VII (January, 1900), 1459.

EASTWARD SHIPMENTS OF WHEAT FROM THE WESTERN TERMINI OF THE ERIE CANAL, 1835-1873[1]

	Buffalo Wheat Bushels 60 lbs.	Black Rock[2] Wheat Bushels 60 lbs.	Oswego Wheat Bushels 60 lbs.
1835	168,012		51,962
1836	304,090		112,224
1837	450,350		10,025
1838	933,117		59,710
1839	965,000	7,156	106,210
1840	883,100	31,534	83,838
1841	1,207,135	182,783	94,779
1842	1,228,120	39,672	53,022
1843	1,699,724	28,620	108,564
1844	1,786,104	62,558	160,699
1845	1,354,996	18,790	119,572
1846	3,613,569	23,797	433,446
1847	5,816,362	20,368	713,531
1848	3,973,440	92,201	800,295
1849	3,940,350	86,242	1,003,462
1850	3,304,697	131,916	1,552,012
1851	3,669,005	75,827	1,676,213
1852	4,759,281	254,857	2,907,199
1853	4,958,818	232,176	4,513,513
1854	2,811,687	26,822	1,329,885
1855	6,455,641	43,982	2,698,377
1856	7,497,999	26,291	5,994,209
1857	6,673,827		2,572,429
1858	8,294,690		4,071,391
1859	6,168,068		2,198,882
1860	13,951,453		6,786,606
1861	23,713,714		7,695,262
1862	27,751,786		7,408,513
1863	19,404,308		6,061,611
1864	16,138,386		3,129,648
1865	10,202,141		2,678,667
1866	7,772,217		2,190,335
1867	10,109,718		2,511,131
1868	10,369,030		3,558,231
1869	16,463,480		4,711,984
1870	16,738,613		3,857,727
1871	19,028,316		4,105,784
1872	11,001,069		1,928,850
1873	24,569,088		1,775,398

[1]Auditor of the Canal Department, Annual Report on the Tolls, Trade, and Tonnage of the Canals of the State for the Year 1875, New York Assembly Documents, No. 133 (1876), table no. 26.

[2]After 1856 Black Rock statistics were included in Buffalo statistics.

EASTWARD SHIPMENTS OF FLOUR FROM THE WESTERN TERMINI OF THE ERIE CANAL, 1835-1873[1]

	Buffalo Flour bbls. 216 lbs.	Black Rock[2] Flour bbls. 216 lbs.	Oswego Flour bbls. 216 lbs.
1835	100,883		123,421
1836	139,178		94,667
1837	126,815		66,002
1838	277,620		76,098
1839	288,168	69,278	110,390
1840	639,633	109,987	116,300
1841	648,686	179,268	128,094
1842	654,429	109,673	118,027
1843	880,868	111,327	209,269
1844	851,180	127,702	346,959
1845	721,891	153,795	379,383
1846	1,291,233	146,761	471,318
1847	1,903,351	165,335	610,494
1848	1,241,870	153,794	614,837
1849	1,034,938	181,565	808,307
1850	984,430	187,958	804,746
1851	1,106,352	214,647	888,131
1852	959,114	237,866	881,645
1853	658,364	247,587	853,956
1854	288,124	112,135	306,277
1855	235,578	99,017	398,657
1856	76,476	30,675	395,523
1857	88,092		254,621
1858	771,602		467,886
1859	220,486		253,510
1860	180,853		421,032
1861	306,236		433,546
1862	451,814		499,825
1863	469,792		374,593
1864	126,820		263,672
1865	142,018		277,814
1866	52,325		156,791
1867	15,468		74,761
1868	5,774		46,741
1869	51,928		68,161
1870	76,471		105,925
1871	47,731		92,997
1872	5,172		44,202
1873	13,616		37,241

[1] Auditor of the Canal Department, Annual Report on the Tolls, Trade, and Tonnage of the Canals of the State for the Year 1875, New York Assembly Documents, No. 133 (1876), table no. 26.

[2] After 1856 Black Rock statistics were included in Buffalo statistics.

THE MOVEMENT OF WHEAT AND CORN ON THE OHIO AND ERIE CANAL, 1833-1860[1]

	Cleveland		Portsmouth	
	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.
1833	386,760	74,913	-------	-------
1834	333,868	2,653	-------	-------
1835	387,232	53,373	-------	-------
1836	464,756	392,281	3,399	43,117
1837	549,141	280,234	735	3,197
1838	1,229,012	107,514	2,386	8,768
1839	1,515,320	65,272	1,100	6,444
1840	2,155,407	72,569	-------	30,530
1841	1,564,421	245,018	-------	128,191
1842	1,311,665	218,756	-------	56,748
1843	813,536	227,694	605	28,758
1844	976,551	263,508	487	100,388
1845	229,105	146,272	635	146,438
1846	1,597,597	557,872	8,004	134,032
1847	2,195,581	1,382,219	8,782	348,155
1848	1,573,427	615,094	4,002	106,206
1849	862,810	527,464	1,834	197,875
1850	1,192,559	831,704	16,372-1/2	476,482
1851	2,529,699	998,059	70,430	403,094
1852	2,920,534	861,897	46,338	360,446
1853	1,817,677	168,713	13,618	278,822
1854	657,267	428,823	3,561-1/2	413,764-1/2
1855	---------	196,345	305	403,704
1856	384,007	222,125	20,244	192,488
1857	289,446	164,873	13,053	470,598
1858	353,895	239,755	10,752	128,476
1859	29,433	29,762	3,489	219,051
1860	211,674	78,495	17,986-1/2	380,985

[1] C. P. McClelland and C. C. Huntington, History of the Ohio Canals, 175-181.

THE MOVEMENT OF WHEAT AND CORN ON THE MIAMI AND ERIE CANAL, 1842-1860[1]

	Toledo		Cincinnati	
	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.
1842	12,976	--------	5,283	84,523
1843	98,220	116,143	5,983	80,802
1844	211,698	32,659	13,272	82,863
1845	565,711	30,037	6,404	45,950
1846	664,314	1,105,909	14,896	112,195
1847	962,170	1,275,410	105,605	547,903
1848	1,121,491	1,309,911	22,451	290,486
1849	714,703	2,052,071	22,203	239,530
1850	935,936	1,581,130	81,331	615,864
1851	1,250,355	2,562,961	130,292	270,147
1852	1,954,718	3,878,047	103,825	320,283
1853	1,699,441	2,369,606	5,145-1/2	327,382
1854	396,951	4,067,676	88	445,907
1855	722,896	2,805,652	1,736	333,162
1856	986,732	2,258,069	6,033	499,929
1857	727,223	1,005,351	9,026	3,421,788
1858	1,347,158	993,366	5,354	225,602
1859	765,993	120,505	3,599	110,757
1860	1,161,809	1,798,671	33,618	170,257

[1]C. P. McClelland and C. C. Huntington, History of the Ohio Canals, 175-181.

SHIPMENTS OF FLOUR, WHEAT, AND CORN FROM CHICAGO
1838-1873

	Flour bbls. 216 lbs.	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.
1838	--------	78	--------
1839	--------	3,678	--------
1840	--------	10,000	--------
1841	--------	40,000	--------
1842	--------	586,907	--------
1843	--------	688,967	--------
1844	6,320	891,894	--------
1845	13,752	956,860	--------
1846	28,045	1,459,594	--------
1847	32,538	1,974,304	67,135
1848	45,200	2,160,000	550,460
1849	51,309	1,936,264	644,848
1850	100,871	883,644	262,013
1851	72,406	437,660	3,221,317
1852	61,196	635,996	2,757,011
1853	70,984	1,206,163	2,780,228
1854	111,627	2,306,925	6,837,890
1855	163,419	6,298,155	7,517,625
1856	216,389	8,364,420	11,129,688
1857	259,648	9,846,052	6,814,615
1858	470,402	8,850,257	7,726,264
1859	686,351	7,166,696	4,349,360
1860	698,132	12,402,197	13,700,113
1861	1,603,920	15,835,953	24,372,725
1862	1,739,849	13,808,898	29,452,610
1863	1,522,085	10,793,295	25,051,450
1864	1,285,343	10,250,026	12,235,452
1865	1,293,428	7,614,887	25,437,241
1866	1,981,525	10,118,907	32,753,181
1867	2,015,455	10,557,123	21,267,205
1868	2,399,619	10,374,683	24,770,626
1869	2,339,063	13,244,249	21,586,808
1870	1,705,977	16,432,585	17,777,377
1871	1,287,574	12,905,449	36,716,030
1872	1,361,328	12,160,046	47,013,552
1873	2,303,490	24,455,657	36,754,943

[1] Tenth Census of the United States, 1880, III, 158.

SHIPMENTS OF FLOUR, WHEAT AND CORN FROM MILWAUKEE, 1845-1873[1]

	Flour bbls. 216 lbs.	Wheat Bushels 60 lbs.	Corn Bushels 56 lbs.
1845	7,550	95,510	--------
1846	15,756	213,448	--------
1847	34,840	598,411	--------
1848	92,732	602,474	--------
1849	136,657	1,136,023	2,500
1850	100,017	297,570	5,000
1851	51,889	317,285	13,828
1852	92,995	564,404	2,220
1853	104,055	956,703	270
1854	145,032	1,809,452	164,908
1855	181,568	2,641,746	112,132
1856	188,455	2,761,976	218
1857	228,442	2,581,311	472
1858	298,668	3,904,213	43,958
1859	282,956	4,732,957	41,364
1860	457,343	7,568,608	37,204
1861	674,474	13,300,495	1,485
1862	711,405	14,915,680	9,489
1863	603,525	12,837,620	88,989
1864	414,833	8,992,479	140,786
1865	567,576	10,479,777	71,203
1866	720,365	11,634,749	480,408
1867	921,663	9,598,452	266,249
1868	1,017,598	9,867,029	342,717
1869	1,220,058	14,272,799	93,806
1870	1,225,941	16,127,838	103,173
1871	1,211,427	13,409,467	419,133
1872	1,232,036	11,570,565	1,557,953
1873	1,805,200	24,994,266	197,920

[1]Tenth Census of the United States, 1880, III, 160.

RECEIPTS OF FLOUR AND GRAIN AT NEW ORLEANS FROM 1832 TO 1862.[1]

[Compiled from statistics of New Orleans Price Current.]

YEAR.	Wheat.	Flour.	CORN.		Oats.
			Shelled.	In ear.	
	Bbls. and sacks.	*Barrels.*	*Sacks.*	*Barrels.*	*Bbls. and sacks.*
1832	.....	221,283	7,490	71,322	1,784
1833	.....	233,742	65,620	91,473	9,029
1834	.....	345,831	62,137	97,774	18,623
1835	10,038	286,514	162,346	262,410	14,264
1836	1,090	267,232	287,182	235,975	18,132
1837	6,422	253,500	309,020	194,013	32,180
1838	2,027	321,208	177,751	270,924	25,514
1839	17,280	439,981	318,795	161,918	38,708
1840	63,015	462,523	274,358	152,065	42,885
1841	2,621	496,194	264,557	168,050	54,250
1842	138,886	439,628	338,709	240,675	63,281
1843	118,248	521,175	427,552	255,056	120,430
1844	86,014	502,507	360,052	165,354	120,432
1845	64,750	533,312	400,964	129,686	144,262
1846	403,786	837,925	1,165,120	258,573	269,386
1847	833,619	1,617,675	2,386,510	619,576	588,337
1848	149,181	706,958	1,063,465	509,583	467,219
1849	238,911	1,013,177	1,705,133	295,711	266,560
1850	97,508	591,986	1,114,807	42,719	325,795
1851	89,797	941,106	1,298,912	42,526	479,741
1852	64,918	927,212	1,397,132	163,908	463,273
1853	47,238	864,672	1,225,031	17,620	446,956
1854	184,943	874,256	1,740,267	48,404	586,451
1855	31,283	673,111	1,110,446	10,701	439,078
1856	869,524	1,120,974	1,980,905	41,924	587,180
1857	775,962	1,290,597	1,417,651	14,719	393,171
1858	401,275	1,538,742	1,289,665	62,405	566,649
1859	29,585	1,084,978	759,438	5,000	219,736
1860	13,116	965,860	1,722,039	86,092	659,560
1861	71,678	1,009,201	3,873,911	122,644	552,728
1862	36,411	281,645	315,652	22,216	35,348

[1] U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 1978.

The following table of the grain trade of Montreal from 1846 to 1898 shows that, with the exception of corn and oats, the receipts have not increased abnormally during the last quarter of a century:

GRAIN TRADE OF MONTREAL.

QUANTITIES OF FLOUR AND GRAIN RECEIVED AT AND SHIPPED FROM MONTREAL FROM 1846 TO 1898.[1]

[From the annual reports of the commerce of Montreal.]

YEAR.	FLOUR.		WHEAT.		CORN.		PEAS.		BARLEY.		OATS.	
	Receipts.	Shipments.	Receipts.	Shipments.	Receipts.	Shipments.	Receipts.	Shipments.	Receipts.	Shipments.	Receipts.	Shipments.
	Barrels.	*Barrels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1846	582,922	202,521	420,177	376,852	.....	.....	1,350	94,360	489	.....	.....	30,992
1847	627,187	271,559	540,857	509,858	.....	.....	50,184	86,089	10,213	24,120	15,505	155,074
1848	546,292	154,908	482,645	130,187	44,150	.....	59,625	64,678	7,291	200	12,001	.....
1849	485,901	535,503	257,900	481,766	50,514	.....	48,637	6,985	2,911	357	18,213	12,001
1850	483,683	182,968	815,277	71,259	51,965	5,719	21,256	98,006	512	250	3,677	1,061
1851	510,738	255,546	443,477	129,114	96,930	26,912	22,770	59,921	2,372	.....	29,189	.....
1852	575,938	215,524	724,056	207,656	92,190	200	90,592	96,514	4,239	734	21,873	7,494
1853	595,658	244,400	906,989	485,000	83,421	.....	75,654	175,847	7,415	37,770	38,894	.....
1854	484,664	97,724	431,785	122,636	651,140	146,748	10,000	67,264	21,457	.....	11,197	.....
1855	433,011	53,583	634,217	45,707	622,208	28,629	33,856	105,215	17,938	1,700	49,728	9,366
1856	589,737	196,731	1,340,705	774,167	427,154	156,234	52,932	218,116	24,194	2,075	43,063	8,643
1857	573,445	220,301	1,067,724	850,912	230,694	28,631	16,773	198,142	19,410	4	15,007	120
1858	669,064	197,742	1,774,464	962,241	105,087	14,967	177,906	423,018	23,881	300	113,560	32,160
1859	575,810	105,973	635,424	58,005	71,420	3,015	113,186	314,189	27,925	29,068	63,093	12,600
1860	577,196	277,567	2,622,062	1,645,209	138,214	24,387	776,129	1,208,845	27,483	252	37,637	206,752
1861	1,085,339	605,042	7,738,084	5,584,727	1,555,477	1,477,114	1,409,879	1,529,156	132,749	Incom-	122,399	1,040,085
1862	1,174,602	597,477	8,534,172	6,500,796	2,661,261	1,774,516	534,679	711,192	236,930	plete.	196,782	979,620
1863	1,193,286	616,621	5,509,143	3,741,146	862,534	638,281	668,253	745,414	307,261	709,259	403,972	3,696,825
1864	956,795	688,671	4,194,217	2,406,531	156,564	21,974	357,207	493,029	371,055	854,770	292,616	3,437,810
1865	782,216	697,691	2,648,674	787,938	935,421	734,849	436,751	661,910	317,668	1,810,302	163,694	3,251,568
1866	704,276	595,198	773,206	83,278	1,117,208	1,870,223	1,036,315	1,141,733	296,951	427,322	2,122,305	3,363,536
1867	726,518	569,621	2,899,295	1,576,528	891,695	661,706	1,302,306	1,761,960	413,239	991,697	309,289	1,425,950
1868	799,311	693,612	2,426,699	1,661,956	1,099,152	693,497	520,295	693,545	267,416	451,309	215,675	903,694
1869	975,295	968,657	7,462,653	5,565,393	141,962	108,618	556,984	576,984	68,238	161,372	84,696	230,726
1870	1,061,273	975,513	6,598,315	5,972,648	83,656	6,643	892,909	1,767,729	49,465	253,609	172,449	635,829
1871	951,709	908,844	8,284,985	7,699,534	3,171,797	2,579,906	292,309	796,143	83,256	57,601	122,946	86,818
1872	921,973	832,981	4,695,314	3,818,459	7,696,449	7,546,290	652,649	1,175,026	129,084	118,496	211,664	426,446
1873	1,139,696	963,569	9,796,729	8,225,649	3,544,514	3,599,918	455,799	917,761	194,872	153,362	163,669	231,439
1874	1,075,353	899,256	7,693,284	7,556,599	2,893,284	2,861,875	1,144,729	1,763,306	178,652	45,426	283,694	261,377
1875	1,082,551	840,699	8,615,226	7,117,159	1,804,619	1,726,229	1,197,649	1,544,698	181,995	176,999	258,699	343,598
1876	915,331	842,595	6,326,139	5,697,694	3,932,631	3,934,698	1,696,943	1,962,731	278,677	291,796	2,616,174	3,622,874
1877	828,673	749,247	7,215,662	5,848,993	4,617,915	4,226,296	816,991	1,127,245	1,230,486	1,691,473	328,975	466,143
1878	916,379	716,793	7,390,695	6,892,822	6,117,226	5,664,635	1,611,453	2,226,792	439,416	5,846	723,103	967,876
1879	771,396	725,169	11,313,634	10,461,221	4,388,291	4,052,307	2,626,979	2,621,592	365,789	9,375	499,541	643,485
1880	736,896	789,697	9,637,124	9,094,296	7,772,549	7,622,161	2,617,686	3,661,674	267,176	298,623	1,191,531	1,853,939
1881	826,167	682,821	7,589,635	6,554,622	3,817,666	3,750,664	2,615,544	3,133,263	264,212	133,634	1,647,813	1,211,221
1882	866,666	775,962	8,273,678	6,913,290	706,279	672,850	2,666,607	3,204,674	247,532	128,451	926,666	545,962
1883	1,012,706	776,242	6,699,911	5,666,167	4,868,151	4,530,731	1,685,266	1,666,334	239,189	142,254	495,742	155,431
1884	1,152,789	844,689	5,301,127	3,967,457	3,590,535	3,316,053	1,971,271	1,943,103	226,664	96,227	844,166	250,667
1885	899,788	679,426	5,566,247	4,221,283	2,419,561	2,278,827	2,449,646	2,562,329	155,227	79,767	1,560,897	1,469,916
1886	866,712	726,966	7,445,413	7,035,122	4,858,667	4,545,563	2,632,933	2,600,312	181,150	14,581	1,970,464	2,077,034
1887	949,682	922,565	10,678,714	9,168,893	1,264,921	1,208,678	2,343,198	2,603,758	136,621	59,792	1,197,292	814,273
1888	833,121	785,638	5,646,999	2,171,584	2,885,934	2,808,276	1,035,454	1,016,681	189,566	14,186	649,699	78,806
1889	988,876	874,667	3,826,166	2,786,494	6,966,467	6,729,830	1,274,353	1,016,491	262,963	12,829	924,907	95,709
1890	978,843	824,792	4,155,970	2,223,666	5,862,697	4,979,236	1,483,942	1,458,191	167,966	10,867	1,648,193	298,245
1891	1,153,421	795,482	8,269,687	6,239,224	2,139,699	2,092,683	2,024,199	2,075,391	1,352,985	814,262	1,732,926	817,675
1892	966,866	1,036,187	11,174,939	8,663,379	1,812,694	1,813,943	2,509,963	2,986,337	692,333	607,040	6,357,544	5,062,286
1893	899,567	984,386	8,257,087	7,096,157	2,311,756	2,679,774	1,734,918	1,885,613	209,178	60,356	4,227,654	3,218,951
1894	857,571	1,085,867	7,108,293	5,511,160	2,183,364	2,053,598	1,228,680	1,291,250	96,748	4,428	1,596,184	137,695
1895	1,613,544	1,646,788	4,441,512	3,651,311	2,582,631	2,613,536	812,242	751,189	177,698	2,054	1,672,703	13,719
1896	1,393,160	1,630,316	9,472,697	7,652,385	6,652,998	6,795,164	2,093,674	1,878,124	279,461	263,046	4,031,749	2,882,522
1897	1,344,247	1,397,163	11,856,611	9,924,029	9,338,236	9,224,364	1,967,007	1,794,721	274,262	201,782	6,123,680	5,231,993
1898	1,516,237	1,609,145	10,906,788	9,132,771	19,490,316	19,252,536	1,843,550	1,673,237	467,366	343,601	7,269,867	6,796,817

[1] U. S. Treasury Department, Bureau of Statistics, Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), 2015.

TONNAGE CARRIED BY THE NEW YORK CENTRAL RAILROAD, THE NEW YORK AND ERIE RAILROAD, AND THE NEW YORK CANALS, 1853-1875[1]

	N. Y. C.	N. Y. & E.	N. Y. Canals
1853	360,000	631,039	4,247,853
1854	549,804	743,250	4,165,862
1855	670,073	842,048	4,022,617
1856	776,112	943,215	4,116,084
1857	838,791	978,066	3,334,061
1858	765,407	816,954	3,665,192
1859	834,319	869,073	3,781,684
1860	1,028,183	1,139,554	4,650,214
1861	1,167,302	1,253,418	4,507,635
1862	1,387,433	1,632,955	5,598,785
1863	1,449,604	1,815,096	5,557,692
1864	1,557,148	2,170,798	4,852,941
1865	1,275,299	2,234,350	4,729,654
1866	1,602,197	3,242,792	5,775,220
1867	1,667,926	3,484,546	5,688,325
1868	1,846,599	3,908,243	6,442,225
1869	2,281,885	4,312,209	5,859,080
1870	4,122,000	4,852,505	6,173,769
1871	4,532,956	4,844,208	6,467,888
1872	4,393,965	5,564,274	6,673,370
1873	5,522,724	6,312,702	6,364,782
1874	6,114,678	6,364,276	5,804,588
1875	6,001,954	6,239,946	4,859,858

[1]Noble E. Whitford, History of the Canal System of the State of New York, II, 911.

CHICAGO AND NEW YORK SPRING WHEAT PRICES, 1840-1889[1]

WHEAT: No. 2, spring.

[The prices are for Chicago.]

Apr.	1840	.38	@	.50	per bushel.	Jan.	1860	.97			per bushel.	Oct.	1874	.94½	per bushel.
July	1840	.38	@	.50	" "	Apr.	1860	1.02			" "	Jan.	1875	.90½	" "
Jan.	1841	.38	@	.50	" "	July	1860	1.06½			" "	Apr.	1875	.96½	" "
Apr.	1841	.37	@	.44	" "	Oct.	1860	.88½			" "	July	1875	1.04	" "
July	1841	.50	@	.56	" "	Jan.	1861	.90			" "	Oct.	1875	1.13	" "
Jan.	1842	.30	@	.35	" "	Apr.	1861	.78½			" "	Jan.	1876	.96	" "
Apr.	1842	.40	@	.44	" "	July	1861	.85½			" "	Apr.	1876	1.03	" "
July	1842	.70	@	.75	" "	Oct.	1861	.72			" "	July	1876	1.04½	" "
Apr.	1844	.50	@	.62	" "	Jan.	1862	.68			" "	Oct.	1876	1.07½	" "
July	1844	.50	@	.56	" "	Apr.	1862	.72			" "	Jan.	1877	1.25½	" "
	1845	.52			" "	July	1862	.73½			" "	Apr.	1877	1.26½	" "
	1846	.40			" "	Oct.	1862	.81			" "	July	1877	1.45	" "
July	1847	.40	@	.55	" "	Jan.	1863	.84			" "	Oct.	1877	1.10½	" "
Oct.	1847	.50	@	.66	" "	Apr.	1863	1.07			" "	Jan.	1878	1.00	" "
Jan.	1848	.65	@	.70	" "	July	1863	.95			" "	Apr.	1878	1.12	" "
Apr.	1848	.75	@	.82	" "	Oct.	1863	1.01			" "	July	1878	.89½	" "
July	1848	.85	@	.90	" "	Jan.	1864	1.11½			" "	Oct.	1878	.87½	" "
Oct.	1848	.50	@	.56	" "	Apr.	1864	1.11½			" "	Jan.	1879	.81½	" "
Jan.	1849	.55	@	.58	" "	July	1864	1.04			" "	Apr.	1879	.89	" "
July	1849	.36	@	.65	" "	Oct.	1864	1.45			" "	July	1879	1.05	" "
Oct.	1849	.50	@	.90	" "	Jan.	1865	1.56			" "	Oct.	1879	1.05	" "
Jan.	1850	.45	@	.55	" "	Apr.	1865	.98			" "	Jan.	1880	1.31½	" "
Apr.	1850	.55	@	.62	" "	July	1865	.90			" "	Apr.	1880	1.14	" "
July	1850	.90	@	1.00	" "	Oct.	1865	1.23			" "	July	1880	.85	" "
Oct.	1850	.46	@	.52	" "	Jan.	1866	.98	@	.98	" "	Oct.	1880	.92½	" "
Jan.	1851	.50	@	.60	" "	Apr.	1866	.98	@	.98	" "	Jan.	1881	.97½	" "
Apr.	1851	.50	@	.58	" "	July	1866	1.07	@	1.25	" "	Apr.	1881	1.02	" "
Jan.	1852	.31	@	.42	" "	Oct.	1866	1.82	@	1.96	" "	July	1881	1.11	" "
Apr.	1852	.34	@	.40	" "	Jan.	1867	1.89½	@	1.92	" "	Oct.	1881	1.40	" "
July	1852	.37	@	.39	" "	Apr.	1867	2.19½	@	2.24	" "	Jan.	1882	1.26	" "
Oct.	1852	.48	@	.56	" "	July	1867	1.72½			" "	Apr.	1882	1.25½	" "
Jan.	1853	.70	@	.76	" "	Oct.	1867	1.67½			" "	July	1882	1.24	" "
Apr.	1853	.55	@	.65	" "	Jan.	1868	1.93	@	1.96	" "	Oct.	1882	.94	" "
July	1853	.68	@	.75	" "	Apr.	1868	1.91½			" "	Jan.	1883	.89½	" "
Oct.	1853	.94	@	1.00	" "	July	1868	1.79½			" "	Apr.	1883	1.07½	" "
Jan.	1854	.92	@	.95	" "	Oct.	1868	1.38½			" "	July	1883	1.09	" "
Apr.	1854	1.00			" "	Jan.	1869	1.14	@	1.15½	" "	Oct.	1883	.96½	" "
July	1854	.95	@	1.00	" "	Apr.	1869	1.09½			" "	Jan.	1884	.88½	" "
Oct.	1854	.90	@	1.05	" "	July	1869	1.24	@	1.25	" "	Apr.	1884	.85½	" "
Jan.	1855	1.08	@	1.20	" "	Oct.	1869	1.07½			" "	July	1884	.83½	" "
Apr.	1855	1.35	@	1.45	" "	Jan.	1870	.77			" "	Oct.	1884	.78½	" "
July	1855	1.50	@	1.55	" "	Apr.	1870	.76½			" "	Jan.	1885	.76½	" "
Oct.	1855	1.20	@	1.30	" "	July	1870	1.03			" "	Apr.	1885	.77½	" "
Jan.	1856	1.30	@	1.35	" "	Oct.	1870	1.11			" "	July	1885	.86	" "
Apr.	1856	1.15	@	1.20	" "	Jan.	1871	1.10			" "	Oct.	1885	.86	" "
July	1856	1.00			" "	Apr.	1871	1.26½			" "	Jan.	1886	.84	" "
Oct.	1856	1.02	@	1.08	" "	July	1871	1.22½			" "	Apr.	1886	.76½	" "
Jan.	1857	.85	@	.87	" "	Oct.	1871	1.22½			" "	July	1886	.73½	" "
Apr.	1857	.84	@	.88	" "	Jan.	1872	1.21½			" "	Oct.	1886	.75½	" "
July	1857	1.26	@	1.27	" "	Apr.	1872	1.20½			" "	Jan.	1887	.79½	" "
Oct.	1857	.73	@	.77	" "	July	1872	1.21			" "	Apr.	1887	.80	" "
Jan.	1858	.53½	@	.55	" "	Oct.	1872	1.18½			" "	July	1887	.89½	" "
Apr.	1858	.61½	@	.63	" "	Jan.	1873	1.20½			" "	Oct.	1887	.71	" "
July	1858	.61½	@	.62½	" "	Apr.	1873	1.16½			" "	Jan.	1888	.78½	" "
Oct.	1858	.70	@	.71	" "	July	1873	1.16½			" "	Apr.	1888	.75½	" "
Jan.	1859	.69	@	.70	" "	Oct.	1873	1.01			" "	July	1888	.79	" "
Apr.	1859	.84	@	.86	" "	Jan.	1874	1.19			" "	Oct.	1888	1.04½	" "
July	1859	.90			" "	Apr.	1874	1.21½			" "	Jan.	1889	.89½	" "
Oct.	1859	.74	@	.78	" "	July	1874	1.16			" "	Apr.	1889	1.01	" "

WHEAT: spring.

[The prices are for New York city.]

Jan.	1840	1.08	@	1.10	per bush.	Jan.	1856	1.77			per bush.	Apr.	1873	$1.67			per bush.
Apr.	1840	1.07	@	1.08	" "	Apr.	1856	1.65	@	1.76	" "	July	1873	1.50			" "
July	1840	.98			" "	July	1856	1.45			" "	Oct.	1873	1.44			" "
Oct.	1840	1.00			" "	Oct.	1856	1.40	@	1.45	" "	Jan.	1874	1.60	@	1.61	" "
Jan.	1841	.98	@	1.00	" "	Jan.	1857	1.70			" "	Apr.	1874	1.53	@	1.57	" "
Apr.	1841	.99	@	1.00	" "	Apr.	1857	1.58			" "	July	1874	1.38	@	1.39	" "
July	1841	1.17			" "	July	1857	1.57			" "	Oct.	1874	1.15	@	1.16	" "
Oct.	1841	1.40			" "	Oct.	1857	1.05	@	1.12	" "	Jan.	1875	1.12	@	1.17	" "
Jan.	1842	1.25			" "	Jan.	1858	1.10	@	1.15	" "	Apr.	1875	1.17	@	1.22	" "
Apr.	1842	1.25			" "	Apr.	1858	1.15			" "	July	1875	1.19			" "
July	1842	1.28			" "	July	1858	.89	@	.90	" "	Oct.	1875	1.30			" "
Oct.	1842	.75	@	.85	" "	Oct.	1858	1.08			" "	Jan.	1876	1.22			" "
Jan.	1843	.87½	@	.89	" "	Jan.	1859	1.20			" "	Apr.	1876	1.28	@	1.29	" "
Apr.	1843	.90	@	.95	" "	Apr.	1859	1.36			" "	July	1876	1.17			" "
July	1843	1.02	@	1.08	" "	July	1859	1.09			" "	Oct.	1876	1.24	@	1.26	" "
Oct.	1843	.90	@	.93	" "	Oct.	1859	1.26			" "	Jan.	1877	1.45	a	1.50	" "
Jan.	1844	.96			" "	Jan.	1860	1.30			" "	Apr.	1877	1.49			" "
Apr.	1844	1.01			" "	Apr.	1860	1.22			" "	July	1877	1.60	@	1.65	" "
July	1844	.97	@	1.00	" "	July	1860	1.28			" "	Oct.	1877	1.36	@	1.38	" "
Oct.	1844	.87	@	.90	" "	Oct.	1860	1.15	@	1.18	" "	Jan.	1878	1.15	a	1.36	" "
Jan.	1845	.95	@	.96	" "	Jan.	1861	1.18	@	1.22½	" "	Apr.	1878	1.29			" "
Apr.	1845	.97	@	1.00	" "	Apr.	1861	1.25	@	1.27½	" "	July	1878	1.00			" "
July	1845	1.00	@	1.05	" "	July	1861	72	@	.89	" "	Jan.	1879	1.05			" "
Oct.	1845	.90	@	.96	" "	Oct.	1861	1.15	@	1.19	" "	Apr.	1879	1.14½			" "
Jan.	1846	1.24			" "	Jan.	1862	1.27	@	1.28	" "	July	1879	1.16½	@	1.17	" "
Apr.	1846	1.10	@	1.15	" "	Apr.	1862	1.26			" "	Oct.	1879	1.28	@	1.28½	" "
July	1846	.95	@	.95	" "	July	1862	1.01	@	1.10½	" "	Jan.	1880	1.47	@	1.48	" "
Oct.	1846	.95	@	.99	" "	Oct.	1862	1.19	@	1.19	" "	Apr.	1880	1.28			" "
Jan.	1847	1.15			" "	Jan.	1863	1.23	@	1.23	" "	July	1880	1.08	@	1.09	" "
Apr.	1847	1.35	@	1.40	" "	Apr.	1863	1.20	@	1.26	" "	Oct.	1880	1.08			" "
July	1847	1.09	@	1.09	" "	July	1863	1.18	@	1.26	" "	Jan.	1881	1.16	@	1.17	" "
Oct.	1847	1.14	@	1.19	" "	Oct.	1863	1.27	@	1.28	" "	Apr.	1881	1.23			" "
Jan.	1848	1.20	@	1.30	per bush.	Jan.	1864	$1.45	@	1.48	per bush.	July	1881	1.20½	@	1.20½	" "
Apr.	1848	1.25	@	1.29	" "	Apr.	1864	1.62			" "	Oct.	1881	1.38	@	1.40	" "
July	1848	1.15	@	1.20	" "	July	1864	2.35	@	2.45	" "	Jan.	1882	1.38	@	1.40	" "
Oct.	1848	1.12	@	1.15	" "	Oct.	1864	1.85	@	1.86	" "	Apr.	1882	1.39	@	1.40	" "
Jan.	1849	1.08	@	1.12	" "	Jan.	1865	2.28	@	2.30	" "	July	1882	1.31			" "
Apr.	1849	1.00	@	1.02	" "	Apr.	1865	1.70½			" "	Oct.	1882	$1.06			per bush.
July	1849	1.00	@	1.02	" "	July	1865	1.25	@	1.30	" "	Jan.	1883	1.10			" "
Oct.	1849	.95	@	1.12	" "	Oct.	1865	1.73	@	1.78	" "	Apr.	1883	1.02	@	1.03	" "
Jan.	1850	.95	@	1.12	" "	Jan.	1866	1.69	@	1.85	" "	July	1883	1.08			" "
Apr.	1850	1.00	@	1.12	" "	Apr.	1866	1.12	a	1.65	" "	Oct.	1883	1.04			" "
July	1850	1.15	@	1.20	" "	July	1866	1.60	a	2.25	" "	Jan.	1884	1.07			" "
Oct.	1850	.88	@	1.05	" "	Oct.	1866	1.80	a	2.60	" "	Apr.	1884	.96½			" "
Jan.	1851	1.05	@	1.08	" "	Jan.	1867	2.00	a	2.50	" "	July	1884	.90	@	.90½	" "
Apr.	1851	.95	@	1.00	" "	Apr.	1867	2.20	a	2.75	" "	Oct.	1884	.85½			" "
July	1851	.93	@	.97½	" "	July	1867	1.65	a	2.25	" "	Jan.	1885	.86			" "
Oct.	1851	.78	@	.85	" "	Oct.	1867	2.30	a	2.50	" "	Apr.	1885	.90½			" "
Jan.	1852	1.09	@	1.05	" "	Jan.	1868	2.30	@	2.50	" "	July	1885	.91½	@	.95	" "
Apr.	1852	1.06	@	1.10	" "	Apr.	1868	2.35	@	2.53	" "	Oct.	1885	.90	@	.91	" "
July	1852	.97	@	1.00	" "	July	1868	1.90	a	2.12	" "	Jan.	1886	.92½			" "
Oct.	1852	1.04	@	1.05½	" "	Oct.	1868	1.50	a	1.85	" "	Apr.	1886	.91½			" "
Jan.	1853	1.22			" "	Jan.	1869	1.45	a	1.70	" "	July	1886	.81½			" "
Apr.	1853	1.20	@	1.21	" "	Apr.	1869	1.38	@	1.52	" "	Oct.	1886	.83½			" "
July	1853	1.20	@	1.22	" "	July	1869	1.40	@	1.52	" "	Jan.	1887	.91	@	.93	" "
Oct.	1853	1.46	@	1.50	" "	Oct.	1869	1.20	@	1.48	" "	Apr.	1887	.91½	@	.93½	" "
Jan.	1854	1.27½	@	1.28	" "	Jan.	1870	1.17	@	1.33	" "	July	1887	.93½	@	.93½	" "
Apr.	1854	1.20	@	1.25	" "	Apr.	1870	.95	@	1.20	" "	Oct.	1887	.80	@	.81	" "
July	1854	1.75	@	2.10	" "	July	1870	1.05	@	1.38	" "	Jan.	1888	.87½	@	.92½	" "
Oct.	1854	1.60	@	1.70	" "	Oct.	1870	1.07	@	1.30	" "	Apr.	1888	.84½	@	.84½	" "
Jan.	1855	2.20	@	2.37½	" "	Jan.	1871	1.34			" "	July	1888	.89½	@	.89½	" "
Apr.	1855	2.25	@	2.30	" "	Apr.	1871	1.45	@	1.61	" "	Oct.	1888	1.05	@	1.07½	" "
July	1855	2.00	@	2.10	" "	July	1871	1.44	@	1.46	" "	Jan.	1889	1.08	@	1.10½	" "
Oct.	1855	1.68	@	1.77	" "	Oct.	1871	1.57	@	1.61	" "	Apr.	1889	.95	@	1.00	" "
						Jan.	1872	1.53	@	1.55	" "	July	1889	.89½	@	.90	" "
						Apr.	1872	1.50	@	1.55½	" "	Oct.	1889	.77	@	.89	" "
						July	1872	1.53	@	1.55	" "						
						Oct.	1872	1.60	@	1.62	" "						
						Jan.	1873	1.65			" "						

[1] Senate Reports, No. 1394, 52 Congress, 2 session, II, 60-63.

EXPORTS OF WHEAT AND WHEAT FLOUR FROM THE UNITED STATES, 1821-1893[1]

DOMESTIC EXPORTS, BY YEARS AND DECADES

Fiscal year ended Sept. 30 until 1843, and June 30 since.	Wheat.			Wheat flour.		
	Bushels.	Values.	Value per bushel.	Barrels.	Values.	Value per barrel.
1821	25,821	20,925	.81	1,056,119	4,298,043	4.07
1822	4,418	3,080	.70	827,865	5,103,280	6.16
1823	4,272	5,663	1.32	756,702	4,962,373	6.56
1824	20,373	20,740	1.02	996,792	5,759,176	5.77
1825	17,980	18,570	1.03	818,906	4,212,127	5.17
1826	45,166	38,676	.86	857,820	4,121,466	4.80
1827	22,182	14,800	.67	868,492	4,420,081	5.09
1828	8,906	6,730	.76	860,809	4,286,939	4.98
1829	4,007	6,372	1.59	837,585	5,793,651	6.91
1830	45,249	46,176	1.02	1,227,434	6,085,953	4.95
Total for decade	198,424	181,732	.92	9,103,824	49,043,089	5.39
1831	408,910	523,270	1.30	1,806,529	9,938,458	5.50
1832	88,304	93,500	1.06	864,919	4,880,623	5.64
1833	32,221	29,592	.92	955,768	5,613,010	5.87
1834	36,948	39,598	1.07	835,352	4,520,781	5.41
1835	47,762	51,405	1.08	779,396	4,394,777	5.64
1836	2,062	2,062	1.00	505,400	3,572,599	7.06
1837	17,303	27,206	1.57	318,719	2,987,269	9.37
1838	6,291	8,125	1.29	448,161	3,603,299	8.04
1839	96,325	144,191	1.50	923,151	6,925,170	7.50
1840	1,720,860	1,635,483	.95	1,897,501	10,143,615	5.35
Total for decade	2,456,986	2,554,432	1.04	9,334,896	56,579,601	6.06
1841	868,585	822,881	.95	1,515,817	7,759,646	5.12
1842	817,958	916,616	1.12	1,283,802	7,375,356	5.75
1843, 9 months	311,685	264,109	.85	841,474	3,763,073	4.47
1844	558,917	500,400	.90	1,438,574	6,759,488	4.70
1845	389,716	336,779	.86	1,195,230	5,398,593	4.52
1846	1,613,795	1,681,975	1.04	2,289,476	11,668,669	5.09
1847	4,399,951	6,049,350	1.37	4,382,490	26,133,811	5.96
1848	2,034,704	2,669,175	1.31	2,119,393	13,194,109	6.22
1849	1,527,534	1,756,848	1.14	2,108,013	11,280,582	5.35
1850	608,661	643,745	1.06	1,385,448	7,098,570	5.12
Total for decade	13,131,508	15,641,878	1.19	18,559,523	100,431,897	5.41

[1] Senate Reports, No. 259, 53 Congress, 2 session, II, 15-16.

QUANTITIES AND VALUES, YEARS 1851-1893—Continued.

Fiscal year ended June 30—	Bread and breadstuffs—Continued.					
	Wheat flour.			Wheat.		
	Barrels.	Values.	Average values.	Bushels.	Values.	Average values.
1851	2,202,835	$10,524,331	$4.78	1,026,726	$1,025,732	$1.00
1852	2,799,329	11,860,143	4.24	2,694,540	2,556,209	.95
1853	2,920,918	14,783,394	5.06	3,890,141	4,354,403	1.12
1854	4,022,386	27,701,444	6.89	8,036,655	12,420,172	1.55
1855	1,204,540	10,886,906	9.04	798,884	1,329,246	1.66
1856	3,510,626	20,275,148	5.34	8,154,877	15,115,661	1.85
1857	3,712,053	25,882,316	6.97	14,570,331	22,240,857	1.53
1858	3,512,169	19,328,884	5.50	8,926,196	9,061,504	1.02
1859	2,431,824	14,433,561	5.93	3,002,016	2,849,192	.95
1860	2,611,596	15,448,507	5.92	4,155,153	4,076,704	.98
Total	28,927,786	180,143,666	6.23	55,255,536	75,038,680	1.36
1861	4,323,756	24,645,849	5.70	31,238,057	38,313,624	1.23
1862	4,862,083	27,534,677	5.64	37,289,572	42,573,295	1.14
1863	4,380,055	26,366,069	6.46	36,160,414	46,754,195	1.29
1864	3,557,347	25,588,249	7.19	23,681,712	31,432,138	1.33
1865	2,641,286	27,507,664	10.41	9,937,876	19,396,028	1.95
1866	2,183,050	18,396,698	8.43	5,579,103	7,842,749	1.41
1867	1,360,106	12,602,775	9.26	6,146,411	7,822,535	1.27
1868	2,076,428	20,687,798	10.06	15,940,899	20,247,602	1.90
1869	2,431,873	18,813,965	7.73	17,557,836	24,383,259	1.39
1870	3,462,333	21,169,598	6.11	36,584,115	47,171,229	1.29
Total	31,249,374	226,713,645	7.22	220,115,995	286,938,699	1.34
1871	3,653,841	24,093,184	6.59	34,310,906	45,143,424	1.32
1872	2,514,535	17,956,684	7.14	28,423,060	38,915,060	1.47
1873	2,562,066	19,381,984	7.56	39,204,285	51,452,254	1.31
1874	4,094,094	29,258,094	7.15	71,039,928	101,421,459	1.43
1875	3,973,128	23,712,440	5.97	53,047,177	59,697,863	1.12
1876	3,935,512	24,433,470	6.21	55,073,122	68,382,899	1.24
1877	3,743,665	21,963,947	6.48	40,325,611	47,135,582	1.17
1878	3,947,333	25,095,721	6.36	72,404,961	96,572,016	1.34
1879	5,629,714	29,567,713	5.25	123,353,936	130,701,079	1.07
1880	6,011,419	35,339,197	5.88	153,262,796	190,546,305	1.24
Total	39,665,227	250,495,114	6.32	667,435,801	830,177,921	1.24
1881	7,945,786	45,047,257	5.67	150,565,477	167,666,485	1.11
1882	5,915,686	36,375,055	6.15	95,271,802	112,929,718	1.18
1883	9,205,664	54,824,459	5.96	106,385,828	119,879,241	1.13
1884	9,182,260	51,130,696	5.56	70,349,013	75,026,678	1.07
1885	10,648,145	52,146,236	4.90	84,653,714	72,933,097	.86
1886	8,179,241	38,442,955	4.70	87,759,209	80,262,715	.87
1887	11,418,449	51,980,062	4.51	101,971,949	90,716,481	.89
1888	11,963,574	54,777,710	4.58	85,789,261	56,241,466	.85
1889	9,374,803	45,296,485	4.83	46,414,129	41,652,701	.90
1890	12,231,711	57,096,188	4.66	54,397,767	45,275,906	.83
Total	96,035,319	487,036,263	5.07	833,548,148	832,616,590	1.00
1891	11,344,304	54,705,616	4.82	55,131,948	51,420,272	.94
1892	15,196,789	75,362,283	4.96	157,280,351	161,399,132	1.03
1893	16,620,339	75,494,347	4.54	117,121,109	93,534,979	.80

EXPORTS OF CORN AND CORN MEAL FROM THE UNITED STATES, 1821-1893[1]

DOMESTIC EXPORTS, BY YEARS AND DECADES,

QUANTITIES AND VALUES, YEARS 1851-1893—Continued.

Fiscal year ended Sept. 30 until 1842, and June 30 since.	Indian corn.			Indian cornmeal.		
	Bushels.	Values.	Value per bushel.	Barrels.	Values.	Value per barrel.
1821	607,277	261,089	43	131,000	345,180	2.62
1822	509,098	378,427	74.3	146,226	522,229	3.52
1823	749,034	453,622	60.9	141,501	476,867	3.37
1824	779,397	351,665	45.1	152,723	384,675	2.52
1825	969,544	429,906	49.4	187,285	448,167	2.39
1826	505,381	384,955	76.2	158,652	622,366	3.92
1827	978,664	588,483	60.1	131,041	434,002	3.31
1828	704,902	342,894	48.6	174,639	480,034	2.75
1829	897,656	478,862	53.3	173,775	495,673	2.85
1830	444,107	234,528	50.6	145,301	372,296	2.56
Total for decade	7,045,060	3,894,645	55.2	1,544,814	4,581,489	2.97
1831	571,312	396,617	69.4	207,604	595,434	2.87
1832	451,230	278,740	61.8	146,710	480,035	3.27
1833	487,174	337,505	69.3	146,678	534,308	3.64
1834	303,449	203,573	67.1	149,609	491,916	3.29
1835	755,781	588,276	77.8	166,782	629,289	3.77
1836	124,791	103,702	83.1	140,917	621,560	4.41
1837	151,276	147,982	97.8	159,435	763,652	4.79
1838	172,321	141,992	82.3	171,843	722,399	4.20
1839	162,306	141,095	86.9	165,672	658,421	3.97
1840	574,279	338,333	58.9	206,063	705,183	3.42
Total for decade	3,753,919	2,677,815	71.3	1,661,313	6,202,292	3.73
1841	535,727	312,954	58.4	232,284	682,457	2.94
1842	600,308	345,150	57.5	209,199	617,817	2.95
1843, 9 months	672,608	281,749	41.9	174,354	454,166	2.61
1844	825,282	404,008	49	247,882	641,029	2.59
1845	840,184	411,741	49	269,030	641,552	2.38
1846	1,826,068	1,186,063	64.1	298,790	945,081	3.16
1847	16,326,050	14,395,212	88.2	948,060	4,301,334	4.53
1848	5,817,634	3,837,483	66	582,339	1,807,601	3.10
1849	13,257,309	7,966,369	60.1	405,169	1,169,625	2.89
1850	6,595,092	3,892,193	59	259,442	760,611	2.93
Total for decade	47,296,262	33,038,522	69.8	3,626,549	12,021,273	3.31

Fiscal year ended June 30—	Bread and breadstuffs—Continued.					
	Corn.			Corn meal.		
	Bushels.	Values.	Average values.	Barrels.	Values.	Average values.
1851	3,426,811	$1,762,549	$0.514	203,622	$622,866	$3.06
1852	2,627,075	1,540,225	.586	181,105	574,380	3.17
1853	2,274,909	1,374,077	.604	212,118	709,974	3.35
1854	7,768,816	6,074,277	.782	257,403	1,002,976	3.90
1855	7,807,585	6,961,571	.892	267,208	1,237,122	4.63
1856	10,292,280	7,622,565	.741	293,607	1,175,688	4.00
1857	7,505,318	5,184,668	.691	267,504	957,791	3.58
1858	4,766,145	3,259,039	.684	227,627	877,692	3.69
1859	1,719,986	1,323,103	.769	258,885	994,269	3.84
1860	3,314,155	2,399,808	.724	233,709	912,075	3.90
Total	51,503,092	37,501,880	.728	2,412,798	9,064,833	3.76
1861	10,678,244	6,890,865	.645	203,313	692,008	3.44
1862	18,904,896	10,387,383	.549	253,570	778,344	3.07
1863	16,119,476	10,592,704	.657	257,948	1,013,272	3.93
1864	4,096,894	3,353,280	.818	262,357	1,349,765	5.14
1865	2,818,493	3,686,957	1.307	199,540	1,490,928	7.47
1866	13,516,651	11,070,395	.819	237,275	1,129,484	4.76
1867	14,899,823	14,871,092	.998	284,281	1,555,586	5.47
1868	11,147,490	13,004,036	1.174	336,508	2,068,430	6.15
1869	7,047,197	6,820,719	.968	309,867	1,656,273	5.34
1870	1,992,115	1,287,575	.925	187,093	985,676	5.00
Total	100,611,081	82,055,006	.816	2,531,752	12,669,760	5.00
1871	9,826,309	7,458,997	.76	211,811	951,530	4.49
1872	34,491,650	23,984,365	.695	308,840	1,214,999	3.93
1873	38,541,950	23,794,694	.617	403,111	1,474,827	3.65
1874	34,434,906	24,769,951	.71	387,807	1,529,399	3.94
1875	28,858,420	24,456,937	.847	291,654	1,290,533	4.42
1876	49,493,572	33,285,280	.672	354,249	1,305,027	3.68
1877	70,990,963	41,621,245	.587	447,907	1,511,152	3.37
83,461,966	48,030,358	.562	433,753	1,336,187	3.08
88,296,252	46,655,120	.471	397,169	1,052,231	2.65
98,169,877	53,268,247	.543	356,613	961,361	2.80
Total	536,434,697	321,285,194	.599	3,585,896	12,647,548	3.52
1881	91,906,175	50,702,699	.552	434,998	1,270,200	2.92
1882	43,184,915	28,845,899	.668	286,943	994,201	3.44
1883	40,586,825	27,756,662	.684	267,207	990,796	3.67
1884	45,247,490	27,648,644	.611	252,779	818,739	3.23
1885	51,534,416	28,668,883	.543	260,510	816,459	3.13
1886	63,655,436	31,730,983	.50	293,546	856,370	2.92
1887	40,397,283	19,347,361	.48	265,333	706,843	2.66
1888	24,272,417	13,365,960	.55	270,613	765,086	2.83
1889	69,582,939	32,963,277	.474	312,186	870,485	2.79
1890	101,973,717	42,656,015	.418	361,348	996,879	2.76
Total	572,569,569	308,681,013	.539	3,097,367	8,976,510	2.90
1891	30,768,213	17,652,697	.574	318,329	946,977	2.97
1892	75,451,549	41,599,499	.551	287,999	919,961	3.19
1893	46,037,274	24,567,511	.534	271,155	733,061	2.93

[1] Senate Reports, No. 389, 53 Congress, 2 session, II, 105-108.

BIBLIOGRAPHY

Primary Sources

Manuscript

Ammedon and Converse, and Ammedon and Bowman Papers. 1840-1850. Papers of Ammedon and Converse (1840-41), and Ammedon and Bowman (1842-50), of Boston, relating to business transactions with various correspondents in Michigan, Ohio, Vermont, etc. 35 items. Burton Historical Collection, Detroit Public Library.

Charles L. Bissell Papers. Miscellaneous Correspondence, 1854-1851, pertaining to the commission business of Charles L. Bissell, Chicago, Illinois. Approximately 6,000 items. Burton Historical Collection, Detroit Public Library.

Nathaniel W. Brooks Papers. Family and business correspondence, 1837-1872, of John W. Brooks, a Columbus, Ohio, merchant, and his son Nathaniel, a Detroit merchant. Approximately 800 items. Burton Historical Collection, Detroit Public Library.

Thomas Palmer Papers. Letter books and correspondence received by H. M. Hunt and J. T. Roby, 1846-1852, Detroit, Michigan, commission and forwarding agents. Approximately 4,500 items. Burton Historical Collection, Detroit Public Library.

Joseph C. Wright Letter book. Correspondence, 1860-1861, pertaining to the commission business of Joseph C. Wright, Chicago, Illinois. 171 items. Chicago Historical Society Collections, Chicago, Illinois.

United States Government Publications

Abert, J. J.
Commerce of the Lakes and Western Rivers. House Executive Documents, No. 19, 30 Congress, 1 session. Washington, 1848.

Andrews, Frank.
Grain Movement in the Great Lakes Region. Department of Agriculture, Bureau of Statistics, Bulletin 81. Washington, 1910.

Andrews, Israel D.
Report on the Trade Commerce, and Resources of the British North American Colonies. Senate Executive Documents, No. 23, 31 Congress, 2 session. Washington, 1851.

Report of Israel D. Andrews on the Trade and Commerce of the British North American Colonies. Senate Executive Documents, No. 112, 32 Congress, 1 session. Washington, 1853.

Ballantyne, James F.
"The Grain Trade of the United States," Eighth Census, 1860, volume on agriculture, cxxv-clix. Washington, 1864.

Bates, E. N.
Bulk Handling of Grain. Department of Agriculture, Farmer's Bulletin 1290. Washington, 1922.

Brewer, William H.
"Report on the Cereal Production of the United States," Tenth Census, 1880. III, 381-544. Washington, 1883.

Carleton, Mark A.
"Hard Wheats Winning Their Way," Department of Agriculture, Yearbook, 1914, 21-64. Washington, 1915.

Clark, J. Allen, and Bayles, B. B.
Classification of Wheat Varieties Grown in the United States. Department of Agriculture, Technical Bulletin No. 459. Washington, 1935.

Commissioner of Patents. Annual Report, 1837-1861. Washington, 1838-1862.

Department of Agriculture. Report of the Commissioner for the Year 1862. Washington, 1863.

Dixon, Frank H.
A Traffic History of the Mississippi River System. National Waterways Commission, Document No. 11. Washington, 1909.

Federal Trade Commission. Report on the Grain Trade. 7 vols. Washington, 1920-1926.

Harbor and River Improvements, House Reports, No. 741, 30 Congress, 1 session. Washington, 1848.

Holmes, George K.
Systems of Marketing Farm Products and Demand for Such Products at Trade Centers. Department of Agriculture, Bureau of Statistics, Report No. 98. Washington, 1913.

Industrial Commission. Reports. 19 vols. (IV, Transportation; VI, Distribution of Farm Products; IX, Transportation; X-XI, Agriculture). Washington, 1900-1902.

Keep, Charles H.
"The Commerce and Shipping of the Great Lakes," Report on the Internal Commerce of the United States for the Year 1891. appendix no. 1. Washington, 1892.

Leighty, C. E. and others.
"The Corn Crop," Department of Agriculture, Yearbook, 1921, 161-226. Washington, 1922.

"Wheat Production and Marketing," Department of Agriculture, Yearbook, 1921, 77-160. Washington, 1922.

Neftel, Knight.
"Report on Flour-Milling Processes," Tenth Census, 1880, III, 561-579. Washington, 1883.

Northern and Northwestern Lakes Survey. Annual Reports, 1842-1861. Washington, 1843-1862.

Parke, John G. (comp.)
"Statement of Each Annual Appropriation For the Improvement of Rivers and Harbors From August 11, 1790, to March 3, 1887," Laws of the United States Relating to Public Works for the Improvement of Harbors and Rivers, 435-488. Senate Miscellaneous Documents, No. 91, 49 Congress, 2 session. Washington, 1887.

Plumb, Ralph G.
"History of Navigation on the Great Lakes," House Committee on Railways and Canals, Hearing on Commerce of the Great Lakes, 61 Congress, 3 session. Washington, 1911.

Poore, B. P. (comp.)
Veto Messages of the Presidents of the United States with the Action of Congress Thereon. Senate Miscellaneous Documents, No. 53, 49 Congress, 1 session. Washington, 1886.

Purdy, T. C.
"Report on the Canals of the United States," Tenth Census, 1880. IV, 731-764. Washington, 1883.

Report of the Select Committee on Transportation-Routes to the Seaboard. 7 vols. Senate Reports, No. 307, 43 Congress, 1 session. Washington, 1874.

Sinclair, Angus.
"Development of Transportation in the United States," Department of Agriculture, Yearbook, 1899. 643-663. Washington, 1900.

Treasury Department, Bureau of Statistics. Report on the Internal Commerce of the United States, 1876-1891. Washington, 1877-1892.

Treasury Department, Bureau of Statistics. "The Grain Trade of the United States and Tables on the World's Wheat Supply and Trade," Monthly Summary of Commerce and Finance, New Series, VII (January, 1900), Washington, 1901.

Treasury Department, Statistics of the Foreign and Domestic Commerce of the United States; Embracing a Historical Review. Washington, 1864.

Tunell, George G.
Statistics of Lake Commerce. Treasury Department, Bureau of Statistics. Washington, 1898.

War Department, Corps of Engineers, U. S. Army, Transportation on the Great Lakes. Washington, 1926.

State Publications

Annual Report on Companies Navigating the Lakes and Rivers. New York Assembly Documents, No. 183 (1859).

Canal Investigating Commission, Report. New York Senate Documents, No. 48 (1876).

Commerce Commission, Report. New York Assembly Documents, No. 32 (1900).

Commissioners of the Canal Fund. Annual Report of Amount of Tolls Collected and Property Transported on the Canals in 1837. "Circular of Comptroller to Persons in Western States in Relation to Western Trade, September 10, 1833," 56-76. New York Senate Documents, No. 35 (1837).

Committee on Canals, Minority Report on Petitions for Tolls on Railroads of the State of New York. New York Senate Documents, No. 99 (1858).

Committee on Canals, Report. New York Assembly Documents, No. 31 (1900).

Committee on Commerce and Navigation, Minority Report on the Bill to Incorporate Companies to Navigate Canals of this State. New York Assembly Documents, No. 32 (1854).

Committee on Railroads, Majority Report on Petitions for Regulating Freights on Railroads in this State. New York Assembly Documents, No. 47 (1860).

Judson, William P.
"History of the Various Projects, Reports, Discussions and Estimates for Reaching the Great Lakes from Tidewater, 1768-1901," State Engineer and Surveyor, Annual Report for 1901, 967-993. New York Senate Documents, No. 54 (1901).

Memorial of Joshua Leavitt Setting Forth the Importance of an Equitable and Adequate Market for American Wheat, Accompanied with Statistical Tables. New York Assembly Documents, No. 295 (1841).

New York Canal Commissioners, Annual Report, 1829-1875. Albany, 1830-1876.

New York Special Commissioners. Report on the Subject of Tolls Upon the Canals. Albany, 1878.

New York State Engineer and Surveyor, Annual Report, 1850-1875. Albany, 1851-1876.

Ohio Commissioners of the Canal Fund. Annual Report, 1830-1851. Columbus, 1831-1852.

Proceedings of a Public Meeting Held in New York City re: Deranged State of Our Commercial Affairs. New York Senate Documents, No. 82 (1842).

Report on Freight Carried by Railroads Between Lakes and Tidewater. New York Senate Documents, No. 59 (1853).

Select Committee on Canals, Minority Report on the Petitions and Bills for Imposing Tolls on Certain Railroads. New York Senate Documents, No. 35 (1860).

Sweet, Henry.
"Documentary Sketch of the New York State Canals," State Engineer of New York, Annual Report for 1862, 89-474. New York Assembly Documents, No. 96 (1862).

Tabular Statement of Annual Business Done by One of the Largest Forwarding Houses Showing Tonnage, Receipts for Freight, Mileage of Boats, and Expenses of Doing Business. New York Senate Documents, No. 60 (1854).

Newspapers and Periodicals

Albany Argus, 1835-1836.

The Boatmen's Magazine [title varies], 1834-1837.

Buffalo Daily Republic, 1854-1858.

Chicago Daily Democrat, 1849-1861.

Chicago Daily Journal, 1846-1851.

Chicago Magazine, 1857.

DeBow's Commercial Review, 1846-1864.

Hunt's Merchants Magazine and Commercial Review, 1839-1870.

Niles Weekly Register, 1830-1849.

Reports of Trade

Aikens, Andrew J.
Annual Report of the Commerce, Manufactures, Banking Business, and Railroad System of Milwaukee for the Year 1856. Milwaukee, 1856.

Buffalo Board of Trade.
Annual Statement of the Trade and Commerce of Buffalo, 1855, 1861, 1863. Buffalo, 1856, 1862, 1864.

Chicago Board of Trade.
Annual Statement of the Trade and Commerce of Chicago, 1858-1873. Chicago, 1859-1874.

Chicago Democratic Press.
Annual Review of the Commerce of Chicago, 1852-1856. Chicago 1853-1856.

Hamilton, M. D.
Statement of the Trade and Commerce of Detroit for the Year 1857. Detroit, 1858.

Milwaukee Board of Trade.
Annual Report of the Commerce, Public Improvements, and Railroad System of Milwaukee, for the Year 1855. Milwaukee, 1856.

Milwaukee Chamber of Commerce.
Annual Report, 1859-1874. Milwaukee, 1860-1875.

Missouri Republican.
An Annual Review of the Trade and Commerce of St. Louis, 1848, 1854. St. Louis, 1849, 1855.

New York Chamber of Commerce.
Annual Report of the Corporation of the Chamber of Commerce of the State of New York, 1858-1873. New York, 1859-1874.

New York Produce Exchange.
Annual Report of the Board of Managers, 1867-1877. New York, 1868-1877.

Proceedings of the Annual Meeting of the National Board of Trade, 1868-1873. New York, 1868-1874.

Toledo Blade's Annual Statement of the Trade and Commerce of Toledo, 1860-1871. Toledo, 1861-1872.

Union Merchants' Exchange.
Annual Statement of the Trade and Commerce of St. Louis for the Year 1865. St. Louis, 1866.

Wentworth, David.
Annual Review of the Trade, Commerce and Manufactures of Buffalo for the Year 1854. Buffalo, 1855.

City Directories

Commercial Advertiser Directory for the City of Buffalo, 1849-50, 1850-51, 1851-52, 1852, 1853, 1854, 1855, 1860. Buffalo, 1849-1856, 1861.

Crary's Directory for the City of Buffalo, 1841. Buffalo, 1841.

Daily Advertiser Directory for the City of Detroit for the Year 1850. Detroit, 1850.

Erving, Burdick & Co.'s Milwaukee City Directory, 1857 & 1858. Milwaukee, 1857.

Fergus, Robert.
Fergus' Directory of the City of Chicago, 1839 (Fergus Historical Series No. 2). Chicago, 1876.

Directory of the City of Chicago, Illinois, for 1843 (Fergus Historical Series No. 28). Chicago, 1896.

King, Rufus (publisher).
Directory of the City of Milwaukee for the Years 1848-49, With a Sketch of the City, Its Origin, Progress, Business, Population. Milwaukee, 1848.

MacCabe, Julius P. Bolivar (publisher).
Directory Cleveland and Ohio City, for the Years 1837-38. Cleveland, 1837.

Directory of the City of Detroit, for the Year 1837. Detroit, 1837.

Norris, J. W. (publisher).
General Directory and Business Advertiser of the City of Chicago for the Year 1844, with a Historical Sketch and Statistics Extending from 1837 to 1844. Chicago, 1844.

Norris' Business Directory and Statistics of the City of Chicago, for 1846. Chicago, 1846.

Thomas' Buffalo City Directory for 1865. Buffalo, 1865.

Walker, H. N. (publisher).
Walker's Buffalo City Directory, 1842. Buffalo, 1842.

Walker's Buffalo City Directory, 1844. Buffalo, 1844.

Warren, Johnson & Co. (publishers).
Buffalo City Directory, 1870. Buffalo, 1870.

Buffalo City Directory, 1873. Buffalo, 1873.

Wellings, James H. (publisher).
Directory of the City of Detroit for the Year 1845. Detroit, 1845.

Directory of the City of Detroit for the Year 1846. Detroit, 1846.

Williams, C. S. (publisher).
Williams' Toledo Directory, City Guide, and Business Mirror for 1860. Toledo, 1860.

Wright, A. E. (publisher).
A. E. Wright's Boston, New York, Philadelphia and Baltimore Commercial Directory and General Advertising Medium for 1840. New York, 1840.

Other Primary Sources

Account of the Celebration Commemorative of the Opening of Railroad Communication between Boston and Canada, September 17th, 18th, 19th, 1851. Boston, 1852.

"Agricultural Commerce in the Lake Districts of America," Farmers' Magazine, Series 3, XXVIII (1865), 405-409.

Allen, Lewis F.
"Recollections of the Early Forwarding Trade on the Lakes and Canal," Buffalo Historical Society, Publications, XXIII, 377-379.

Allen, Thomas.
The Commerce and Navigation of the Valley of the Mississippi and also that Appertaining to the City

of St. Louis: Considered with Reference to the Improvement by the General Government, of the Mississippi River and its Principal Tributaries; being a Report, Prepared by Authority of the Delegates from the City of St. Louis, for the use of the Chicago Convention of July 5, 1847. St. Louis, 1847.

Baird, Elizabeth T.
"Reminiscences of Life in Territorial Wisconsin," Wisconsin State Historical Society, Collections, XV, 205-263.

Baird, Henry S.
"Recollections of the Early History of Northern Wisconsin," Wisconsin State Historical Society, Report and Collections, IV, 197-221.

Barry, Patrick.
The Theory and Practice of the International Trade of the U. S. and England, and the Trade of the U. S. and Canada, with Tables of Federal Currency, Canadian Currency and Sterling. Chicago, 1858.

American and Indian Transit. London, 1859.

Barton, James L.
Commerce of the Lakes. A Brief Sketch of the Commerce of the Great Northern and Western Lakes for a Series of Years; to which is Added, an Account of the Business Done through Buffalo on the Erie Canal, for the Years 1845 and 1846. Also, Remarks as to the True Canal Policy of the State of New York. Buffalo, 1847.

Commerce of the Lakes and Erie Canal. Buffalo, 1851.

"Reminiscences of Buffalo and Vicinity," Buffalo Historical Society, Publications, I, 153-178.

Bird, William A.
"New York State Early Transportation," Buffalo Historical Society, Publications, II, 17-32.

Blunt, Joseph.
Remarks of Joseph Blunt, Esq. of New York, at a Public Meeting Held at Albany, September 2nd., 1841. n. p., n. d.

Bronson, Alvin.
An Essay on the Commerce and Transportation of the Vallies of the Great Lakes and Rivers of the Northwest. Oswego, New York, 1869.

Paper Read in the Railroad Convention Held at Oswego June 14, 1871.

Brooks, John W.
The Pro Rata Question. What is the True Policy of the State of New York? Albany, 1860.

Buell, J. S.
The Grain Trade of the West and the Necessity of Grain Dryers, Together with the Theory and Philosophy of Their Construction, and the Advantages Arising from Drying and Curing all Kinds of Grain by Artificial Heat. Buffalo, 1864.

Burbanks, Chester.
A Brief Autobiography of My Life. Albany, 1888.

Caird, James.
Prarie Farming in America. New York, 1859.

Casey, W. R.
"On the Spring Trade of the Cities of New York and Boston with the Western States by Way of the Great Lakes," American Railroad Journal, XIV (1842), 235-248.

Chambers, A. B.
Memorial of the Citizens of St. Louis, Missouri to the Congress of the United States, Praying an Appropriation for Removing the Obstruction to the Navigation of the Western Rivers, for the Improvement of the St. Louis Harbor and Other Purposes. St. Louis, 1844.

Childs, Ebenezer.
"Recollections of Wisconsin Since 1820," Wisconsin State Historical Society, Report and Collections, IV, 153-195.

Cist, Charles.
Sketches and Statistics of Cincinnati in 1851. Cincinnati, 1851.

Clark, Charles S.
"The System of Grain Inspection; Its Establishment and Growth," American Elevator and Grain Trade, XII (1894), 226-227, 260-261, 299, 333.

Clarke, T. C.
"Avenues of Western Trade," Hunt's Merchants' Magazine, XXXV (1856), 147-160.

Colton, Calvin.
Tour Of the American Lakes, in 1830. London, 1833.

Colwell, Stephen.
The Ways and Means of Payment: A Full Analysis of the Credit System, with its Various Modes of Adjustment. Philadelphia, 1859.

"Commerce of Lake Erie," The American Review: A Whig Journal, II (1845), 189-198.

"Commerce of the Lakes," Hunt's Merchants' Magazine, VI (1842), 439-449.

Curtiss, Daniel S.
Western Portraiture and Emigrant's Guide; A Description of Wisconsin, Illinois, and Iowa; with Remarks on Minnesota, and Other Territories. New York, 1852.

Dart, Joseph.
"The Grain Elevators of Buffalo," Buffalo Historical Society, Publications, I, 391-404.

Dearborn, Henry A. S.
Letters on the Internal Improvements and Commerce of the West. Boston, 1839.

DeBow, James D. B.
"The Chicago and Memphis Conventions," DeBow's Commercial Review, IV (1847), 123-127.

The Industrial Resources of the Southern and Western States, 3 vols. New Orleans, 1852-1853.

Disturnell, John (publisher).
A Trip Through the Lakes of North America. New York, 1857.

New York As It Is, In 1835; Containing a General Description of the City and Environs, List of Officers, Public Institutions, and Other Useful Information. New York, 1835.

Douglas, Robert C.
Report to the Hon. J. H. Pope, Acting Minister, Department of Railways and Canals, On the Necessity of Deepening the Welland Canal and On the Transportation, Commerce and Canal Tolls, Affecting the St. Lawrence Water-Route to the Sea-Board. Ottawa, Canada, 1884.

Drake, Daniel.
Discourse On the History, Character, and Prospects of the West Delivered to the Union Literary Society of Miami University, Oxford, Ohio, at Their Ninth Anniversary, September 23, 1834. Cincinnati, 1834.

Eastman, Zebuia (ed.).
"Biographies: Charles W. Walker, Esq.," Chicago Magazine, I (1857), 51-55.

"The Grain Trade of Chicago, Her Granaries and Market," Chicago Magazine, I (1857), 274-276.

Edgar, William C.
"The Grain Trade Fifty Years Ago," Northwestern Miller, CXXXVII (1924), 133-134.

Fergus, Robert (comp.).
Chicago River and Harbor Convention, July 5th, 6th and 7th, 1847. Origin, Proceedings, and Statistics. (Fergus Historical Series, No. 18) Chicago, 1882.

Fernon, Thomas Sargent.
Report to J. Edgar Thompson, President of the Pennsylvania Railroad Company, Submitting Results of Observations Concerning the Tendencies of Trade Towards the Seaboard Through the West, North of the Ohio River. Philadelphia, 1852.

Ferris, Jacob.
The States and Territories of the Great West. Buffalo, 1856.

Ford, Thomas.
A History of Illinois, From its Commencement as a State in 1818 to 1847. Chicago, 1854.

Frank, M.
"Early History of Kenosha," Wisconsin State Historical Society, Report and Collections, III, 370-420.

Gerhard, Frederick.
Illinois As It Is. Chicago, 1857.

Gerstner, Franz Anton, Ritter von.
Die Innern Communicationen der Vereinigten Staaten von Nordamerika. 2 vols. 1842-1843.

Grant, William H.
The Hudson River Railroad. Observations on the Western Trade and its Influence upon the Growth and Prosperity of the Cities of New York, Boston and Philadelphia. Poughkeepsie. N. Y., 1846.

Guthrie, S. S.
"History of the Buffalo Board of Trade, A Paper Read before the Buffalo Board of Trade, April 14, 1870," Buffalo City Directory for 1870, 25-38.

Haig, Felix Thackeray.
Notes on the River Navigations of North America. Madras, India, 1863.

Hall, Edward Hepple.
The West: Its Commerce and Navigation. New York, 1864.

Hall, James.
Notes on the Western States. Philadelphia, 1838.

Haskins, R. W.
New England and the West. Buffalo, 1843.

Hawley, Merwin S.
The Erie Canal: Its Origin, its Success, and its Necessity. Buffalo, 1868.

Hazard, George S.
The Erie Canal. Its National Character. Its Through and Local Trade Compared. An Argument in Favor of Making it a National Work. Buffalo, 1872.

Hogan, John.
Thoughts about the City of St. Louis, Her Commerce and Manufactures, Railroads, etc. St. Louis, 1854.

Hollins, William.
Remarks on the Intercourse of Baltimore with the Western Country. With a View of the Communications Proposed Between the Atlantic and the Western States. Baltimore, 1818.

Holton, Edward D.
"Commercial History of Milwaukee: Opening of the Chamber of Commerce," Wisconsin State Historical Society, *Report and Collections*, IV, 253-285.

Hosmer, George W.
"Physiognomy of Buffalo," Buffalo Historical Society, *Publications*, II, 1-16.

"Home and Foreign Grain Markets," *DeBow's Commercial Review*, I (1846), 33-44.

Jay, John.
A Statistical View of American Agriculture, Its Home Resources and Foreign Markets, With Suggestions For the Schedules of the The Federal Census in 1860. New York, 1859.

Johnson, Edwin F.
The Navigation of the Lakes and Navigable Communications Therefrom to the Seaboard, and to the Mississippi River, and the Relation of the Former to the Lines of Railway Leading to the Pacific. Hartford, Conn., 1866.

Johnston, James F. W.
Notes on North America, Agricultural, Economical, and Social. 2 vols. London, 1851.

Jones, Abner Dumont.
Illinois and the West. Boston, 1838.

Jones, William.
An Address to the Merchants of the N. West, Setting Forth the Advantages of the City of Chicago, as the Central Mart of the Union. Chicago, 1856.

Journal of the Proceedings of the South-Western Convention Began at the City of Memphis, on the 12th November, 1845. Memphis, 1845.

Keefer, Thomas C.
The Canals of Canada: Their Prospects and Influence. Toronto, 1850.

Kilbourn, John.
Public Documents Concerning the Ohio Canals, Which are to Connect Lake Erie with the Ohio River, Comprising a Complete Official History of These Great Works of Internal Improvement, From Their Commencement down to the Close of the Session of the Legislature of 1831-32. Columbus, 1832.

Kimber, Thomas.
Report on the Commerce of the Lakes, the Trade of the Canadas with the United States, and on the Importance to Philadelphia of a Direct Connection with Lake Ontario at Sodus Bay. Philadelphia, 1858.

Kingsford, William.
The Canadian Canals: Their History and Cost with an Inquiry into the Policy Necessary to Advance the Well-Being of the Province. Toronto, Canada, 1865.

Kingston, John T.
"Early Western Days," Wisconsin State Historical Society, *Collections*, VII, 297-341.

Lanman, James H.
"Agricultural Commerce of the United States," *Hunt's Merchants' Magazine*, V (1841), 201-220.

Lapham, Increase A.
Wisconsin: Its Geography and Topography. Milwaukee, 1846.

Lapham, Increase A., and Randall, F.
Report of a Committee Appointed by the Trustees of the Town of Milwaukee, Relative to the Commerce of that Town, and the Navigation of Lake Michigan. Milwaukee, 1842.

Lockwood, James H.
"Early Times and Events in Wisconsin," Wisconsin State Historical Society, *Report and Collections*, II, 98-196.

MacFarlane, Robert.
History of Propellers and Steam Navigation, New York, 1851.

MacKay, Alexander.
The Western World; or Travels in the United States in 1846-1847. 3 vols. London, 1849.

Mansfield, Edward Deering.
On the Railway Connections of Philadelphia with the Central West. Letters of Prof. Edward Deering Mansfield, of Cincinnati, to Job R. Tyson, Esq., LL.D., of Philadelphia. Philadelphia, 1853.

Memorial of the Canal Board and Canal Commissioners of the State of New York, Asking for the Improvement of the Lake Harbors by the General Government. Albany, 1858.

Memorial of the Citizens of Buffalo to the Canal Board in Relation to the Reduction of Canal Tolls in the State of New York. Buffalo, 1850.

Memorial of the New York State Canal Convention, Concerning the Improvement of Inland Navigation. New York, 1868.

Minutes of the Proceedings of a Convention, Holden at Warren, Ohio, on the 13th of November, 1833; on the Subject of Connecting the Pennsylvania and Ohio Canals. Warren, Ohio, 1833.

O'Callaghan, E. B.
The Documentary History of the State of New York. 2 vols., Albany, 1849.

O'Reilly, Henry.
Settlement in the West: Sketches of Rochester, with Incidental Notices of Western New York, a Collection of Matters Designed to Illustrate the Progress of Rochester During the First Quarter Century of Its Existence. Rochester, N. Y., 1838.

O'Rielley, Henry, and Allen, Hugh (arrangers).
Proceedings of the New York State Conventions for Rescuing the Canals from the Ruin with Which They are Threatened. New York, 1859.

Parsons, Thomas.
Speech of the Hon. Thomas Parsons, of Monroe, on the Enlargement of the Erie and Oswego Canal Locks, and the Wonderful Progress of the Western States in Population, Production, and Wealth, Delivered in the Senate, March 7, 1867. Albany, 1867.

Parsons, Usher.
"Early Lake Navigation," United States Service Magazine, II (1864), 458-466.

Payne, B. H.
"Contests for the Trade of the Mississippi Valley," Debow's Commercial Review, III (1847), 98-111.

Peto, S. Morton.
The Resources and Prospects of America Ascertained During a Visit to the States in the Autumn of 1865. London, 1866.

Pitkin, Timothy.
A Statistical View of the Commerce of the United States of America. New York, 1835.

Proceedings of a Meeting of Representatives of the Several Railroad Companies between New York, Boston, Philadelphia, and Baltimore, Chicago, Cincinnati, and the Ohio and Mississippi Rivers, Held at Cleveland, November 28th, 1854. Cleveland, Ohio, 1854.

Proceedings of the Commercial Convention Held in Detroit, July 11th, 12th, 13th and 14th, 1865. Detroit, 1865.

Proceedings of the National Convention of the American Cheap Transportation Association, Held at Association Hall, Richmond, Virginia, Commencing on the 1st December, 1874. New York, 1875.

Proceedings of the National Convention of the American Cheap Transportation Association, Held at Lyceum Hall, Washington, D. C., January 14th, 1874. Troy, N. Y., 1874.

Proceedings of the National Ship-Canal Convention, Held at the City of Chicago. Chicago, 1863.

Proceedings of the Railroad Convention Held at the United States Hotel, Saratoga, Saturday, July 28th, 1860. Albany, 1860.

Proceedings of the River Improvement Convention Held in St. Louis, February 12 & 13, 1867. St. Louis, 1867.

Prosser, E. S.
The Enlargement of the Locks of the Erie Canal. Buffalo, 1869.

Quiner, E. B.
"Resources of North-Eastern Wisconsin," Wisconsin State Historical Society, Report and Collections, III, 489-495.

Report of the Committee on Railway Transportation of the American Cheap Transportation Association, presented at the Annual Convention, Held at Richmond, Virginia, December 1st to 4th, 1874. New York, 1874.

Report of the Fourth Annual Meeting of the Board of Lake Underwriters, Held at Buffalo, N. Y., February 10, 1858. Buffalo, 1858.

Report of the Harbor Committee in Relation to an Increase of Harbor Facilities at the City of Buffalo. Buffalo, 1847.

Report of the Proceedings of a Meeting of the Board of Lake Underwriters Held at Cleveland, February 11th, 1857. Buffalo, 1857.

Richmond, Alonzo.
Tolls and Transportation. A Free Canal Essential to the State's Prosperity: and the Water Route Demonstrated to be Superior to the Railways. Buffalo, 1877.

A Free Canal Essential to the States Prosperity, with Some Ideas Upon Internal Navigation. Buffalo, 1878.

Rublee, Horace.
"Early Times in Sheboygan County," Wisconsin State Historical Society, Report and Collections, IV, 335-342.

Ruggles, Samuel B.
Defence of the Right and Duty of the American Union to Improve Its Navigable Waters, in a Speech at Constitution Hall, in the City of New York, October 6, 1852. n. p., n. d.

Vindication in 1849 of the Canal Policy of the State of New York in a Letter from Samuel B. Ruggles to Citizens of Rochester. New York, 1849.

Russell, Robert.
North America, Its Agriculture and Climate; Containing Observations on the Agriculture and Climate of Canada, the United States, and the Island of Cuba. Edinburgh, Scotland, 1857.

Scott, J. W.
"Internal Trade of the United States," Hunt's Merchants' Magazine, VIII (1843), 321-330, 447-458; IX (1843), 31-47.

Smith, William R.
History of Wisconsin in Three Parts, Historical, Documentary, and Descriptive. Madison, Wisconsin, 1854.

Spaulding, M. B.
Legislative Restrictions on the Carrying Trade of the Railways of the State of New York: Viewed in Connection with Outside Competition. New York, 1860.

Stevenson, David.
"Lake Navigation of North America," Hunt's Merchants' Magazine, IV (1840), 216-225.

Tanner, H. S.
A Description of the Canals and Railroads of the United States; Comprehending Notices of All the Works of Internal Improvements in the United States. New York, 1840.

Thompson, John, Brooks, John W., and Drullard, Solomon.
Pro Rata Question. Opening Remarks of John Thompson, Esq., on Behalf of the Railroads, Against a Pro Rata Law; and the Testimony of J. W. Brooks, Esq., Before the Select Committee of the [New York] Assembly; Also, the Testimony of Solomon Drullard, Esq., General Freight Agent, New York Central Railroad. Albany, 1860.

Pro Rata Select Committee. Proceedings Before the [New York State Assembly] Committee, and Proofs and Arguments Offered Against the Pro Rata Measure, Fraught with So Much Injury to the People, to the Commerce and Business of the State, and to the Railroads Themselves. n. p., 1860.

Thurstone, William.
Five Minutes Talk About the Commerce, Industries, and Resources of Buffalo, State of New York. Buffalo, 1882.

Thwaites, Reuben G.
Early Western Travels. 32 vols. Cleveland, 1904-1907.

Townsend, Norton Strange.
The Agriculture of Lorain County. Columbus, Ohio, 1867.

Trautwine, John C.
Report of the Means of Improving the Present Harbour and the Construction of Docks at Montreal, also, A Reply to the Same, In a Letter Addressed to the Harbor Commissioners, by the Hon. John Young. Montreal, 1859.

Turner, Orsamus.
History of the Pioneer Settlement of Phelps and Gorham's Purchase and Morris' Reserve. Rochester, N. Y., 1851.

Walker, Augustus.
"Early Days on the Lakes, with an Account of the Cholera Visitation of 1832. From Manuscript Records of Captain Augustus Walker," Buffalo Historical Society, Publications, V, 287-318.

Ward, Eber B.
The Farmer and the Manufacturer. Detroit, 1868.

Weeks, Lemuel W.
"Commercial History of Milwaukee: Opening of the Chamber of Commerce," Wisconsin State Historical Society, Report and Collections, IV, 285-297.

Whiton, James M.
"The British Corn Laws," Hunt's Merchants' Magazine, V (1841), 520-525.

Whittlesey, Charles.
Early History of Cleveland. Cleveland, 1867.

Williams, J. R.
"Internal Commerce of the West: Its Condition and Wants as Illustrated by the Commerce of Michigan, Present and Prospective," Hunt's Merchants' Magazine, XIX (1848), 19-40.

Secondary Authorities

Alsberg, Carl L., and Griffing, E. P.
"The Objectives of Wheat Breeding," Food Research Institute, Wheat Studies, IV (1928), 269-288.

Ambler, Charles H.
A History of Transportation in the Ohio Valley. Glendale, California, 1932.

Anderson, Russell H.
"New York Agriculture Meets the West, 1830-1850," Wisconsin Magazine of History, XVI (1932-1933), 163-198; 285-296.

Andreas, Alfred T.
History of Chicago. 3 vols. Chicago, 1884.

Appleton, John B.
"The Declining Significance of the Mississippi as a Commercial Highway in the Middle of the Nineteenth Century," Philadelphia Geographic Society, Bulletin, XXVIII (1930), No. 4, 267-284.

Atherton, Lewis E.
"The Services of the Frontier Merchant," Mississippi Valley Historical Review, XXXIV (1937), 153-170.

"The Pioneer Merchant in Mid-America," The University of Missouri, Studies, XIV (1939), No. 2.

Ball, Carleton R.
"The History of Wheat Improvement," Agricultural History, IV (1930), 48-71.

Bancroft, William L.
"Memoir of Capt. Samuel Ward, with a Sketch of the Commerce of the Upper Lakes," Michigan Pioneer and Historical Society, Collections, XXI (1892), 336-367.

Bardolph, Richard.
"Illinois Agriculture in Transition, 1820-1870," Illinois State Historical Society, Journal, XLI (1948), No. 3, 244-264.

Barnhart, John D.
"Sources of Southern Migration into the Old Northwest," Mississippi Valley Historical Review, XXII (1935), No. 1, 49-62.

Barton, Elmer E.
Industrial History of Milwaukee, the Commercial, Manufacturing and Railway Metropolis of the North-West. Milwaukee, 1886.

Barrows, Harlan H.
"Geography of the Middle Illinois Valley," Illinois State Geological Survey, Bulletin, (1910), No. 15.

Belcher, Wyatt W.
The Economic Rivalry between St. Louis and Chicago, 1850-1880. New York, 1947.

Benton, Elbert Jay.
"The Wabash Trade Route in the Development of the Old Northwest," John Hopkins Studies in Historical and Political Science, XXI (1903), 9-112.

Berry, Thomas Senior.
Western Prices Before 1861, A Study of the Cincinnati Market. Cambridge, Mass., 1943.

Bidwell, Percy W., and Falconer, John.
History of Agriculture in the Northern United States, 1620-1860. Washington, 1925.

Billington, Ray A., and Hedges, James B.
Westward Expansion, A History of the American Frontier. New York, 1949.

Bingham, Robert W.
The Cradle of the Queen City, a History of Buffalo to the Incorporation of the City. Buffalo, 1931.

Bisbee, Lewis H., and Simonds, John C.
The Board of Trade and the Produce Exchange, Their History, Methods and Law. Chicago, 1884.

Bishop, Avard Longley.
"The State Works of Pennsylvania," Transactions of the Connecticut Academy of Arts and Sciences, XIII (1907), 149-297.

Blackwell, Thomas Evans.
Descriptive Statement of the Great Water Highways of the Dominion of Canada. Montreal, 1874.

Bogart, Ernest Ludlow.
"Early Canal Traffic and Railroad Competition in Ohio," Journal of Political Economy, XXI (1913), 56-70.

Internal Improvements and State Debt in Ohio, an Essay in Economic History. New York, 1924.

Boucher, Chauncey S.
"IN RE That Agressive Slavocracy," The Mississippi Valley Historical Review, VIII (1921), Nos. 1-2, 13-79.

Boyle, James E.
Chicago Wheat Prices for Eighty-One Years. Ithaca, N. Y., 1922.

Bretz, Julian P.
"The Economic Background of the American Liberty Party," American Historical Review, XXXIV (1929), No. 2, 250-264.

Brown, George W.
"The Opening of the St. Lawrence to American Shipping," The Canadian Historical Review, VII (1926), 4-12.

Brown, Paul W.
"The Collapse of the Steamboat Traffic upon the Mississippi: an Inquiry into Causes," Mississippi Valley Historical Association, Proceedings, IX (1915-1918), 422-428.

Brown, Ralph H.
Historical Geography of the United States. New York, 1948.

Brown, Robert Marshall.
"The Mississippi River as a Trade Route," American Geographical Society, Bulletin, XXXVIII (1906), 349-354.

Buller, Arthur H. R.
Essays on Wheat. New York, 1919.

Burkett, Charles W.
History of Ohio Agriculture: A Treatise on the Development of the Various Lines and Phases of Farm Life in Ohio. Concord, N. H., 1900.

Burton, F. W.
"Wheat in Canadian History," *Canadian Journal of Economics and Political Science*, III (1937), 210-217.

Butler, Albert F.
"The Early Transportation and Banking Enterprises of the States in Relation to the Growth of Corporations," *Quarterly Journal of Economics*, XVII (1902), 111-162.

Carman, Harry J.
"English Views of Middlewestern Agriculture, 1850-1870," *Agricultural History*, VIII (1934), 3-19.

Catlin, George B.
"Oliver Newberry," *Michigan History Magazine*, XVIII (1934), 5-24, 81-84.

Channing, Edward, and Lansing, Marion F.
The Story of the Great Lakes. New York, 1909.

Chase, Lew Allen.
"Michigan's Share in the Establishment of Improved Transportation between the East and West," Michigan Pioneer and Historical Society, *Collections*, XXXVIII, 589-609.

Churchill, John C.
Landmarks of Oswego County, New York. Syracuse, 1895.

Clark, Fred E., and Weld, L. D. H.
Marketing Agricultural Products in the United States. New York, 1932.

Creighton, Donald G.
The Commercial Empire of the St. Lawrence. New Haven, 1937.

Cruikshank, E. A.
"The Inception of the Welland Canal," Ontario Historical Society, *Papers and Records*, XXII (1925), 60-88.

Cuthbertson, George A.
Freshwater. New York, 1931.

Dodd, William E.
"The Fight for the Northwest, 1860," The American Historical Review, XVI (1911), 774-788.

Dodlinger, Peter T.
The Book of Wheat, an Economic History and Practical Manual of the Wheat Industry. New York, 1908.

Donovan, Herbert D. A.
The Barnburners, a Study of the Internal Movement in the Political History of New York State and of the Resulting Changes in Political Affiliation, 1830-1852. New York, 1925.

Dun, Finlay.
American Farming and Food. London, 1881.

Dunbar, Seymour.
A History of Travel in America. 4 vols. Indianapolis, 1915.

Duncan, Reid Bingham.
"Papers Relating to American Agricultural Exports, 1830-1850." Ph. D. thesis, Cornell University, 1938.

Durand, Loyal, Jr.
"The Grain Trade of the Great Lakes," Journal of Geography, XXIV (1925), 260-267.

Ellis, David M.
"Albany and Troy -- Commercial Rivals," New York History, XXIV (1943), 484-511.

"Rivalry between the New York Central and the Erie Canal," New York History, XXIX (1948), 268-300.

Emerson, Frederick Valentine.
A Geographical Interpretation of New York City. Chicago, 1909.

Emery, Henry Crosby.
Speculation on the Stock and Produce Exchanges of the United States. New York, 1896.

Engelbrecht, Theodor Hinrich.
Die Geographische Verteilung der Getreide Preise in den Vereinigten Staaten von 1862 bis 1900. Berlin, 1903.

Esarey, Logan.
A History of Indiana from its Exploration to 1850. Indianapolis, 1915.

Farmer, Silas.
The History of Detroit and Michigan. 2 vols. Detroit, 1889.

Fite, Emerson D.
Social and Industrial Conditions in the North During the Civil War. New York, 1910.

Foreman, Edward R. (ed.).
Centennial History of Rochester, New York. 4 vols. Rochester, N. Y., 1931.

Fowke, V. C.
"An Introduction to Canadian Agricultural History," Agricultural History, XVI (1942), 79-90.

Fuller, George N.
"Settlement of Michigan Territory," Mississippi Valley Historical Review, II (1915), 25-55.

Garriott, Edward B.
Storms of the Great Lakes. Washington, 1903.

Gephart, William F.
Transportation and Industrial Development in the Middle West. New York, 1909.

Glazebrook, George P. de T.
A History of Transportation in Canada. Toronto, 1938.

Goldstein, Benjamin Franklin.
Marketing: A Farmer's Problem. New York, 1928.

Goodspeed, Weston A., and Healy, Daniel P.
History of Cook County, Illinois. 2 vols. Chicago, 1909.

Goodwin, Frank P.
"Building a Commercial System," Ohio Archaelogical and Historical Quarterly, XIV (1907), 316-339.

Graham, Lloyd, and Severance, Frank H.
The First Hundred Years of the Buffalo Chamber of Commerce. Buffalo, 1945.

Hall, John W.
Marine Disasters on the Western Lakes. Detroit, 1872.

Harlow, Alvin F.
Old Towpaths, the Story of the American Canal Era. New York, 1926.

Hartsough, Mildred L.
From Canoe to Steel Barge on the Upper Mississippi. London, 1934.

Hatcher, Harlan H.
The Great Lakes. New York, 1944.

Hedrick, Ulysses Prentiss.
History of Agriculture in Western New York. New York, 1933.

Hepburn, Alonzo B.
Artificial Waterways and Commercial Development (with a History of the Erie Canal). New York, 1909.

Hibbard, Benjamin Horace.
The History of Agriculture in Dane County, Wisconsin. Madison, Wisconsin, 1905.

Hill, Henry Wayland.
"An Historical Review of Waterways and Canals in New York State," Vol. XII in Buffalo Historical Society, Publications.

"Historical Sketch of Niagara Ship Canal Projects," Buffalo Historical Society, Publications, XXII (1918), 203-266.

Hill, Henry Wayland (ed.).
Municipality of Buffalo, New York; a History, 1720-1923. 4 vols. New York, 1923.

Hill, Howard C.
"The Development of Chicago as a Center of the Meat Packing Industry," Mississippi Valley Historical Review, XV (1923), 253-273.

Hind, Henry Y. (ed.).
Eighty Years Progress of British North America. Toronto, 1863.

Hirsch, Arthur H.
"The Construction of the Miami and Erie Canal," Mississippi Valley Historical Association, Proceedings, X (1918-1921), 349-362.

Hofstader, Richard.
"The Tariff Issue in the Civil War," American Historical Review, XLIV (1938), 50-55.

Hubbart, Henry Clyde.
The Older Middle West, 1840-1880. New York, 1936.

Huebner, Grover G.
Agricultural Commerce: The Organization of American Commerce in Agricultural Commodities. New York, 1924.

Huebner, S. S. (ed.).
"American Produce Exchange Markets," American Academy of Political and Social Science, Annals, XXXVIII (1911), 319-620.

Hulbert, Archer Butler (ed.).
Historic Highways. 16 vols. Cleveland, 1902.

The Paths of Inland Commerce: A Chronicle of Trail, Road, and Waterway. New Haven, Conn., 1921.

Hunter, Louis C.
"Studies in the Economic History of the Ohio Valley: Seasonal Aspects of Industry and Commerce before the Age of Big Business. The Beginnings of Industrial Combination," Smith College, Studies in History, XIX (1933-1934), Nos. 1-2.

Steamboats on the Western Rivers, an Economic and Technological History. Cambridge, Mass., 1949.

Innis, Harold A., and Lower, A. R. M., (eds.).
Select Documents in Canadian Economic History, 1783-1885. Toronto, 1933.

Jarchow, Merrill E.
"King Wheat," Minnesota History, XXIX (1948), 1-28.

Johnson, Crisfield.
History of Oswego County, New York. Philadelphia, 1877.

Johnson, Emory R., and others.
History of the Domestic and Foreign Commerce of the United States. 2 vols. Washington, 1915.

Jones, Fred Mitchell.
"Middlemen in the Domestic Trade of the United States," Illinois University Studies in the Social Sciences, XXI (1937), No. 3.

Jones, Robert Leslie.
History of Agriculture in Ontario, 1613-1880. Toronto, Canada, 1946.

Joy, James F.
"Railroad History of Michigan," Michigan Pioneer and Historical Society, Pioneer Collections, XXII (1894), 292-304.

Keefer, Thomas C.
"The Canals of Canada," Royal Society of Canada, Proceedings and Transactions, XI (1893), 25-50.

Keith, Hannah E.
"Historical Sketch of Internal Improvements in Michigan, 1836-1848," Michigan Political Science Association, Publications, IV (1900), 1-48.

Kenkel, J. B.
A Study in Grain Marketing at Country Points in the North Central States. Washington, 1922.

Kennedy, James H.
A History of the City of Cleveland; its Settlement, Rise and Progress, 1796-1896. Cleveland, 1896.

Klein, Joseph J.
"The Development of Mercantile Instruments of Credit in the United States," Journal of Accountancy, XII (1911), 321-345, 422-449, 526-537, 594-607; XIII (1912), 44-50, 122-132, 207-217.

Klein, Theodore B.
The Canals of Pennsylvania and the System of Internal Improvements. Harrisburg, Pa., 1901.

Knoblock, Otto M.
"Early Navigation on the St. Joseph River," Indiana Historical Society, Publications, VIII (1925), 185-200.

Kohlmier, Albert L.
"Commerce and Union Sentiment in the Old Northwest in 1860," Illinois State Historical Society, Transactions, No. 30 (1923), 154-161.

The Old Northwest as the Keystone of the Arch of American Federal Union. Bloomington, Ind., 1938.

Kuhlman, Charles B.
The Development of the Flour-Milling Industry in the United States, with Special Reference to the Industry in Minneapolis. New York, 1929.

Kuhn, Madison.
"Economic Issues and the Rise of the Republican Party in the Northwest." Ph. D. thesis, University of Chicago, 1940.

Larson, Henrietta M.
The Wheat Market and the Farmer in Minnesota, 1858-1900. New York, 1926.

Leavitt, Charles T.
"Transportation and the Livestock Industry of the Middle West to 1860," Agricultural History, VIII (1934), 20-33.

Lee, Guy A.
"The Historical Significance of the Chicago Grain Elevator System," Agricultural History, XI (1937), 16-32.

Lee, Judson Fiske.
"Transportation as a Factor in the Development of Northern Illinois Previous to 1860," Illinois State Historical Society, Journal, X (1917), 17-85.

Lippincott, Issac.
"Internal Trade of the United States, 1700-1860," Washington University, Studies, IV (1916), 63-150.

Livingood, James W.
The Philadelphia-Baltimore Trade Rivalry, 1780-1860. Harrisburg, Pa., 1947.

McClelland, C. P., and Huntington, C. C.
History of the Ohio Canals; their Construction, Cost, Use and Partial Abandonment. Columbus, 1905.

MacFarlane, James.
"The Pennsylvania Canals," Western Pennsylvania History Magazine, II (1919), 38-51.

MacGill, Caroline E. (ed.).
History of Transportation in the United States before 1860. Washington, 1917.

McKee, Samuel, Jr.
"Canada's Bid for the Traffic of the Middle West; a Quarter-Century of the History of the St. Lawrence Waterway, 1849-1874," Canadian Historical Association, Report for 1940, (1940), 26-35.

McKelvy, Blake.
Rochester the Water Power City, 1812-1854. Cambridge, Mass., 1945.

Rochester the Flower City, 1855-1890. Cambridge, Mass., 1949.

McNall, Neil Adams.
"An Agricultural History of the Genesee Valley, 1790-1860." Ph. D. thesis, Cornell University, 1945.

"King Wheat in the Genesee Valley," New York History, XXVII (1946), 426-443.

Mansfield, John Brandt, (ed. and comp.).
History of the Great Lakes. 2 vols. Chicago, 1899.

Marvin, Winthrop S.
American Merchant Marine. New York, 1902.

Masters, Donald C.
"T. C. Keefer and the Development of Canadian Transportation," Canadian Historical Association, Report for 1940, 36-44.

Mather, Frederick G.
"Water Routes from the Great Northwest," Harper's New Monthly Magazine, LXIII (1881), 415-432.

Mathews, Lois K.
Expansion of New England, the Spread of New England Settlement and Institutions to the Mississippi River, 1620-1865. Boston, 1909.

Maurer, Maurer
"Navigation at the Foot of the Maumee Rapids, 1815-1845," Historical Society of Northwestern Ohio, Quarterly Bulletin, XV (1943), 159-173.

Merk, Frederick.
Economic History of Wisconsin During the Civil War Decade. Madison, Wisconsin, 1916.

Mills, James Cooke.
Our Inland Seas, their Shipping and Commerce for Three Centuries. Chicago, 1910.

Monette, John W.
"Progress of Navigation and Commerce on the Waters of the Mississippi River and the Great Lakes, 1700-1846," Mississippi Historical Society, Publications, VII (1903), 479-518.

Morris, Charles R.
"Internal Improvements in Ohio, 1825-1850," American Historical Association, Papers, III (1889) 351-379.

Morrison, John H.
History of American Steam Navigation. New York, 1903.

Mott, Edward Harold.
Between the Ocean and the Lakes. The Story of Erie. New York, 1901.

Myers, Margaret G.
The New York Money Market: Origins and Development. New York, 1931.

Nelson, E. C.
"Presidential Influence on the Policy of Internal Improvements," The Iowa Journal of History and Politics, IV (1906), 3-69.

Newcomer, Lee.
"Construction of the Wabash and Erie Canal," Ohio Archaelogical and Historical Quarterly, XLVI (1937), 199-207.

Noble, Alfred.
"Development of the Commerce of the Great Lakes," American Society of Civil Engineers, Transactions, L (1903), 327-350.

Parkins, Almon Ernest.
Historical Geography of Detroit. Lansing, Michigan, 1918.

Paxson, Frederick Logan.
"The Gateways of the Old Northwest," Michigan Historical Society, Collections, XXXVIII (1912), 139-148.

"The Railroads of the 'Old Northwest' before the Civil War," Wisconsin Academy of Science, Arts and Letters, Transactions, XXVII (1912), 243-274.

Petersen, William J.
Steamboating on the Upper Mississippi, the Water Way to Iowa. Iowa City, Iowa, 1937.

Pierce, Bessie Louise.
A History of Chicago. 2 vols. New York, 1937, 1940.

Pitkin, Thomas M.
"Western Republicans and the Tariff in 1860," Mississippi Valley Historical Review, XXVII (1940), 401-420.

Plumb, Ralph G.
"Early Harbor History of Milwaukee," Wisconsin Academy of Sciences, Arts, and Letters, Transactions, XVII (1914), 187-194.

Lake Michigan. Manitowoc, Wisconsin, 1941.

Poggi, Edith Muriel.
The Prarie Province of Illinois; a Study of Human Adjustment to the Natural Environment. Urbana, Ill., 1934.

Porter, Kirk H.
National Party Platforms. New York, 1924.

Putnam, James William.
An Economic History of the Illinois and Michigan Canal. Chicago, 1918.

Raney, William F.
Wisconsin: A Story of Progress. New York, 1940.

Rayback, Joseph G.
"The Liberty Party Leaders of Ohio: Exponents of Antislavery Coalition," Ohio State Archaelogical and Historical, Quarterly, LVII (1948), 165-178.

Reber, L. Benjamin.
A History of St. Joseph. St. Joseph, Michigan, 1924.

Reizenstein, Milton.
"The Economic History of the Baltimore and Ohio Railroad," John Hopkins University, Studies in Historical [and Political] Science, XV (1897), 275-361.

Ringwalt, John L.
Development of Transportation Systems in the United States. Philadelphia, 1888.

Roseboom, Eugene H., and Weisenberger, Francis P.
A History of Ohio. New York, 1934.

Russell, John A.
"Story of Michigan's Marketing," Michigan History Magazine, XIII (1929), 26-40.

Sauer, Carl Ortwin.
"Geography of the Upper Illinois Valley and History of its Development," Illinois State Geological Survey, Bulletin, XXVII (1916), No. 27.

Schafer, Joseph.
A History of Agriculture in Wisconsin. Madison, 1922.

"Peopling the Middle West," Wisconsin Magazine of History, XXI (1937), 85-106.

Schmidt, Louis Bernard.
"The Westward Movement of the Wheat Growing Industry in the United States," Iowa Journal of History and Politics, XXVIII (1920), 396-412.

"The Westward Movement of the Corn Growing Industry in the United States," Iowa Journal of History and Politics, XXI (1923), 112-141.

"Internal Commerce and the Development of National Economy before 1860," Journal Political Economy, XLVII (1939), 798-822.

Smith, Donnal V.
"The Influence of the Foreign-Born of the Northwest in the Election of 1860," Mississippi Valley Historical Review, XIX (1932), 192-204.

Smith, Henry Perry (ed.).
History of the City of Buffalo and Erie County. 2 vols., Syracuse, New York, 1884.

Smith, Theodore C.
The Liberty and Free-Soil Parties in the Northwest. New York, 1897.

Stephens, George W.
"Some Aspects of Early Intersectional Rivalry for the Commerce of the Upper Mississippi Valley," Washington University Studies, Humanistic Series, X (1923), 277-300.

Stevens, Frank Walker.
The Beginnings of the New York Central Railroad, New York, 1926.

Still, Bayrd.
Milwaukee: The History of a City. Madison, Wisconsin, 1948.

Stocking, William.
"Detroit Commercial Organizations," Michigan History Magazine, IV (1920), 435-437.

Summers, Festus P.
The Baltimore and Ohio in the Civil War. New York, 1939.

Taylor, Charles H. (ed.).
History of the Board of Trade of the City of Chicago. 3 vols. Chicago, 1917.

Thompson, Charles W.
"The Movement of Wheat Growing: A Study of A Leading State," Quarterly Journal of Economics, XVIII (1904), 570-584.

Thompson, Daniel G. B.
Ruggles of New York. New York, 1946.

Thompson, John G.
"The Rise and Decline of the Wheat Growing Industry in Wisconsin," University of Wisconsin, Economic and Political Science Series Bulletin, V, No. 292.

Thornton, Harrison John.
"Oats in History," Iowa Journal of History and Politics, XXX (1932), 377-394.

Tucker, Gilbert Norman.
The Canadian Commercial Revolution, 1845-1851. New Haven, Connecticut, 1936.

Tunnel, George G.
"The Diversion of the Flour and Grain Traffic from the Great Lakes to the Railroads," Journal of Political Economy, V (1897), 340-375; 413-420.

Turner, Frederick J.
Rise of the New West, 1819-1829. New York, 1906.

Van Meter, Thurman W.
An Outline of the Development of the Internal Commerce of the United States, 1789-1900. Baltimore, 1913.

Verplank, William Edward, and Collyer, Moses W.
The Sloops of the Hudson: an Historical Sketch of the Packet and Market Sloops of the Last Century, with a Record of their Names; Together with Personal Reminiscences of Certain of the Notable North River Sailing Masters. New York, 1908.

Waggoner, Clark, ed.
History of the City of Toledo and Lucas County, Ohio. New York and Toledo, 1888.

Walton, Ivan H.
"Developments on the Great Lakes, 1815-1943," Michigan History, XXVIII (1943), 72-142.

Ward, George Washington.
"The Early Development of the Chesapeake and Ohio Canal Project," John Hopkins University, Studies in Historical and Political Science, XVII (1899), Nos. 9, 10, 11.

Warren, Charles Elwood.
"Pioneer Merchants of Cleveland," Magazine of Western History, III (1855-1886), 71-89.

Way, R. B.
"The Commerce of the Lower Mississippi in the Period 1830-1860," Mississippi Valley Historical Association, Proceedings, X (1918-1921), 57-68.

Whitford, Noble E.
History of the Canal System of the State of New York, Together with Brief Histories of Canals of the United States and Canada. 2 vols. Albany, 1906.

"The Canal System and its Influences," (Alexander C. Flick, ed.) History of the State of New York, 10 vols., New York, 1933-1937, 297-336.

Wilgus, William J.
The Railway Interrelations of the United States and Canada. New Haven, Connecticut, 1937.

Williams, Mentor L.
"A Shout of Derision: A Sidelight on the Presidential Campaign of 1848," *Michigan History*, XXXII (1948), 66-67.

"The Background of the Chicago Harbor and River Convention, 1847," *Mid-America*, XXX (1948), 219-232.

"The Chicago Harbor and River Convention, 1847," *Mississippi Valley Historical Review*, XXXV (1949), 607-626.

Wittke, Carl Frederick (ed.).
The History of the State of Ohio. 6 vols. Columbus, 1941-1944.

Wunderlich, Herbert J.
"Foreign Grain Trade of the United States, 1835-1860," *Iowa Journal of History and Politics*, XXXIII (1935), 27-76.

Zercher, Frederick K.
"The Port of Oswego," *New York History*, XXXIII (1935), 308-317.