CHAPTER FOUR

Food Production in New York City from 1790-1860

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INTRODUCTION

New York City today teems with life and boasts one of the most compelling reasons to visit any location: incredible food. Thousands of restaurants, street vendors, and small shops crowd the streets, offering the inhabitants a large variety of culinary delights. Poised on the Hudson River, New York City benefited from the temperate climate and its bay, which made foodstuffs plentiful and readily available. In today's world, a rich assortment of food is available for consumption, affected largely by the global market and cultural diversity of Gotham. Centuries ago, however, it was more common to eat what was locally produced.

Local markets were accessible in many points throughout the city, particularly on the island of Manhattan; New York City's proximity to farmland and major waterways allowed these markets to flourish. An increase in immigration to the city and population led to a demand in agricultural goods, meats, fish, shellfish, and alcoholic beverages. The accessibility of these products, especially fish and shellfish, was an important factor in the availability and variety of goods found in the city's markets, frequented by people of all socio-economic backgrounds.

Consumption of these products increased over the time period of 1790 to 1860, and was fueled by an ever- growing population. Agriculture provided the primary source

of income for many of the colonists who, especially during the earlier years, were self-sufficient because of New York's fertile and plentiful land. Technological advancements aided in the production of foodstuffs, strongly affecting grain productions and the brewing process. Advancements in transportation later became vital in supplying the city; as the value of land increased, farming was pushed further away from the inner boroughs. Developments in technology led to canals, steamboats, and railroads, all of which transported more products eastward as less land became available for agricultural use.

New York City in the late eighteenth century and early nineteenth century was a center for trade and contained active markets thanks to high availability of goods supplied local land. During the years 1790 to 1860, consumption of agricultural goods, meats, seafood, and alcoholic beverages increased tremendously. Demand grew and New Yorkers expected to obtain a wide assortment of food products to suit their needs. Although consumption grew, production gradually moved away from New York City as population increased, and the metropolis came to rely heavily on outer portions of New York and neighboring states to supply its ravenous inhabitants.

LITERATURE REVIEW

The area we call New York City today was mostly farmland in 1790. Throughout the period, the production of various agricultural goods, meats, seafood, and alcoholic beverages peaked and then moved further away from the city. In order to fully explain this phenomenon, it is necessary to describe the context of these industries' growth.

Consumption

During the 1790s, New Yorkers expected to obtain foods from their neighborhood marketplaces; various items, such as produce, meat, seafood, and alcohol, were available for sale and included in meals for people of all socio-economic backgrounds. Produce was grown, meat was butchered, and seafood was caught locally. All collected, they were brought to and sold in local markets. An area where businesses offered goods, services, and labor for sale, markets flourished within New York City due to the close proximity to farmland and waterways. A variety of trade professions were represented, including carpenters, grocers, coach makers, and stonecutters (Burrows and Wallace 1999). Fly Market, Fulton Street Market, and Harlem Market were popular places for shopping during this time.

During the 1820s, immigrants began to add to New York's population in large numbers. As the urban population in New York City grew, a large market for fruits and vegetables arose. This demand was soon filled as farmers in nearby areas like Brooklyn and Queens began to focus on growing fruits and vegetables to sell to New Yorkers. The types of meat available for sale were influenced by local tastes; beef was especially high in demand. In 1760, the consumption of fish per year rose by 23 percent (Hauck-Lawson & Deutsch 2009). This change was brought on by the flourishing fishing industry; new cultures added to the demand of fish, making the industry more productive. Oystering also saw a major increase in production as its popularity increased both domestically and internationally.

New York and Philadelphia had established themselves as prime centers for trade, especially in the alcoholic beverage industry. Downard writes that more than twenty

brewers were working in the city from the years 1695 to 1786 (by comparison, there were no working breweries in the city by the 1970s) (132). Despite these isolated industry centers, the colonists soon realized that the ingredients conducive to good beer were simply not available to them in their new land. Their British inclinations would soon be forced to change not only in the vote, but also in the glass.

Production

In the British colonies of the United States, the primary source of income was agriculture; 85% of colonists farmed for a living. They grew crops to sell and make a profit rather than to merely feed their family. Farmers in New York typically grew corn, wheat, barley, oats, and rye for profit. Each individual household commonly grew fruits and vegetables in small kitchen gardens, so there was not much demand for large-scale production of these items until later.

Important meats consumed included beef (cattle), pork (pig), and mutton (sheep). Originally, these animals were raised and slaughtered within New York City. Afterwards, the meat was brought over to local markets for sale and consumption. Beef was the most profitable and popular of the meats due to its taste and texture. Wild game was also popular, but once the first era of settlement passed, beef took prominence over other meats in New York.

Many different kinds of seafood were found in New York's surrounding waters, including striped bass, cod, oysters, and clams. This gave consumers a wide variety of seafood to choose from in markets. Fisherman and oyster merchants were able to make a good living because of the dependability of their product. Fish and oyster demand during this time were incredibly high because of their easy accessibility, almost effortless

production, and cheap price. Fishermen native to the Atlantic Ocean traded along foodways to a variety of different ports and markets. Fisheries began humbly, slowly developing to propel community interest in the fishing economy of local waterways like the Long Island Sound and Hudson River. Oysters were cultivated by thousands of sea farmers, and merchants sold millions of oysters every year.

During the early 1800s, the search for the new national American drink was underway. Researchers have found countless recipes for beers in the records from this time. These include instructions on how to make beer from the local crop, maize, ingredients like grains and fruits, and even more unorthodox beers crafted from items such as “essence of spruce” (Baron 1962), as well as traditional recipes based on barley and hops. This suggests that there was a brewery in every home during the colonial period; this implies that much of the brewing and distilling ‘industry’ was in fact a loose network of private home brewing at this time. Some historians are now dubbing one of America’s greatest folk legends, Johnny Appleseed, the “American Dionysus” because he “brought alcohol to the frontier” (Pollan 2001). Alcoholic beverages were deeply ingrained in the American daily way of life during the colonial era, and this continued into the days of the early republic.

Technology

Progression in the creation of new technologies was relatively new during the first half of the 19th century. Later developments, however, especially in the steel industry, sparked a wave of advancements that would lead to less local trade and a greater dependence on national markets.

In the early stage of American colonies, farming was done largely by hand. Technology was not highly developed, nor was it readily available. Plows, now considered a vital tool in agriculture production, were hard to come by. Technology improvement during this time mainly affected grain production, which was no longer taking place in New York City when significant advancements began to happen. Advances in fishing technologies, based on what kind of fish fishermen were trying to seize, were relatively stagnant as well. Hooks and nets were the preferred gear of choice. Instruments used for shellfish include nets and cages (usually used for lobsters and crabs). Concerned more about the size of their daily catches, fishermen left the expensive developments of safer gear for a later era. Contrastingly, the brewing industry invented three items that would hold great importance: the hydrometer, the thermometer, and the steam engine. Both the hydrometer (along with its offshoot, the saccharometer) and the thermometer gave the brewer instruments to measure and monitor processes more exactly, and the steam engine—which replaced horses—opened possibilities of working with greater volumes in the brewery (Olsson 2010).

Advancements in transportation came to impact the exchange of various food products, such as grains, wheat, corn, seafood, alcohol, sugar and meat. This trade of food in turn had an enormous impact on the country's economy. New York offered a multitude of transportation options that allowed for trade over long distances. Canals were frequently used in the early nineteenth century. One example is the Erie Canal, which shuttled agricultural commodities. The steamboat, invented by Robert Fulton, was used in conjunction with canals to provide a faster way to transport both people and

goods than horse ferries (Burrows and Wallace 1999). The steamboats ensured that New York remained economically linked to the mid-west.

Railroads, adapted from the developed railways in England, were an important technology as well. After the Reconstruction era, it was clear that railroads were needed to shuttle settlers west and agricultural products east. The Baltimore and Ohio Railroad Companies were licensed in 1827 to build a steam railroad to the west. A number of shorter lines were additionally built to provide connections to river systems, such as the Pontchartrain railroad, which connected the Mississippi to Lake Pontchartrain in New Orleans (Burrows and Wallace 1999). Beginning in 1840, refrigerated cars, patented by J.B. Sutherland, were used to transport milk and butter. By 1860, refrigerated transportation was limited to seafood and dairy products; later, there were various car designs based upon the type of cargo, such as meat and fruit (Krasner-Khait 2010).

RESULTS

While compiling the research for this chapter, various trends in food consumption, production, and trade became apparent from 1790 to 1860. Production and consumption of meat, primarily beef, increased. This increase was also seen with fish and shellfish. Consumption and demand for various alcoholic beverages rose dramatically, reached its peak in 1830, and then later saw a steady decline. Agriculture and trade saw a subtle decline.

Meat

Types of meats

Common types of meats eaten in New York City between 1790 and 1860 included beef, pork, mutton, veal, lamb, and poultry (Jackson 1995). These meats were consumed because major ethnic groups in New York City retained their eating habits when they settled in the New World; often they brought a taste for domestic animals with them. Occasionally, wild meats such as venison, turkey, wildfowl, and small animals like rabbits were consumed on special occasions (Oliver 2005). Domestic animals were found primarily on family farms in the Colonial era into the late eighteenth century, but in the nineteenth century, an increase in population and land value spurred an increasing arrival from areas outside New York City (Well 2004).

Markets and population

Several markets were established or in use in New York City between 1790 and 1860. A few well-known markets contained butcher stalls; meats sold included beef and pork, along with meats from smaller animals such as mutton and veal (Voe 1862). The Spring Street Market was erected in 1800 on the corner of Hudson and Spring Street. Meats such as roast beef, pork, veal, mutton, turkey, and geese provisions were sold at this location. Franklin market was built in 1821 between Water and Front Streets, Tompkins market in 1826 on Bowery and 3rd avenue, Clinton market in 1827 (erected near the north river), and Jefferson market in 1832 on the corner of Greenwich Lane and 7th Avenue. Weehawken Market or the "Greenwich Market" was established in 1834; this market was not as successful as some others and supported about five butchers. In

1835, Union Market was established and bordered by Houston and Second Street; six butchers purchased stalls as soon as the market house was finished. The Monroe Market followed this in 1836 (built on Monroe Street), as well as the Harlem Market in 1840, which was situated west of Third Avenue near 120th street (Voe 1862). A detailed map of Manhattan market locations in the year 1808 is seen in Figure 4.1 on the following page.

The population of New York State and New York City

Although it lagged behind Philadelphia in terms of population until the 1790s, New York City experienced a constant rate of growth in the late eighteenth century. From the mid eighteenth century to 1780, the city grew from 49,000 to 211,000 people. It was affected significantly by the waves of British immigrants; a large number of these immigrants were Scottish. Speculators at this time began to negotiate with Iroquois for land around the Hudson Valley. The Iroquois ceded most of their land to New York State after the War of Independence since they had sided with the British, who lost the war. This allowed for extensive colonization as well as land speculation. The population of New York State increased from 340,000 inhabitants in 1790 to 1.4 million in 1820 (Well 2004).

Figure 4.1 is a map of market locations within Manhattan in 1808 (Rothschild 1990)

Figure 2.27 Markets in 1808.

TABLE 2.—*Consumption of Alcoholic Beverages and Absolute Alcohol, per Capita of Population Aged 15 Years and Over, in U.S. Gallons, U.S.A. by Year*[a]

	SPIRITS[b]		WINE[b]		CIDER[b]		BEER[b]		TOTAL
	Bev.	*Abs. Alc.*	*Bev.*	*Abs. Alc.*	*Bev.*	*Abs. Alc.*	*Bev.*	*Abs. Alc.*	*Abs. Alc.*
1790	5.1	2.3	0.6	0.1	34.0	3.4			5.8
1795	5.9	2.7	0.6	0.1	34.0	3.4			6.2
1800	7.2	3.3	0.6	0.1	32.0	3.2			6.6
1805	8.2	3.7	0.6	0.1	30.0	3.0			6.8
1810	8.7	3.9	0.4	0.1	30.0	3.0	1.3	0.1	7.1
1815	8.3	3.7	0.4	0.1	30.0	3.0			6.8
1820	8.7	3.9	0.4	0.1	28.0	2.8			6.8
1825	9.2	4.1	0.4	0.1	28.0	2.8			7.0
1830	9.5	4.3	0.5	0.1	27.0	2.7			7.1
1835	7.6	3.4	0.5	0.1	15.0	1.5			5.0
1840	5.5	2.5	0.5	0.1	4.0	0.4	2.3	0.1	3.1
1845	3.7	1.6	0.3	0.1			2.4	0.1	1.8
1850	3.6	1.6	0.3	0.1			2.7	0.1	1.8
1855	3.7	1.7	0.3	0.1			4.6	0.2	2.0
1860	3.9	1.7	0.5	0.1			6.4	0.3	2.1
1865	3.5	1.6	0.5	0.1			5.8	0.3	2.0
1870	3.1	1.4	0.5	0.1			8.6	0.4	1.9
1875	2.8	1.2	0.8	0.1			10.1	0.5	1.8
1880	2.4	1.1	1.0	0.2			11.1	0.6	1.9
1885	2.2	1.0	0.8	0.1			18.0	0.9	2.0
1890	2.2	1.0	0.6	0.1			20.6	1.0	2.1
1895	1.8	0.8	0.6	0.1			23.4	1.2	2.1
1900	1.8	0.8	0.6	0.1			23.6	1.2	2.1
1905	1.9	0.9	0.7	0.1			25.9	1.3	2.3
1910	2.1	0.9	0.9	0.2			29.2	1.5	2.6
1915	1.8	0.8	0.7	0.1			29.7	1.5	2.4
1920	2.1	0.9							0.9
1925	2.0	0.9							0.9
1930	2.0	0.9							0.9
1935	1.5	0.7	0.4	0.1			15.0	0.7	1.5
1940	1.3	0.6	0.9	0.2			17.2	0.8	1.6
1945	1.5	0.7	1.1	0.2			24.2	1.1	2.0
1950	1.5	0.7	1.1	0.2			24.1	1.1	2.0
1955	1.6	0.7	1.3	0.2			22.8	1.0	1.9
1960	1.9	0.8	1.3	0.2			22.1	1.0	2.0
1965	2.1	1.0	1.3	0.2			22.8	1.0	2.2
1970	2.5	1.1	1.8	0.3			25.7	1.2	2.5

[a] The derivation of the population estimates is described in the text.
[b] The absolute alcohol content of spirits was estimated as 45%; in wine, 18%; cider, 10%; and beer, 5%.

Figure 4.2 Consumption of Alcoholic Beverages and Absolute Alcohol (Rorabaugh 1976)

The New York brewing and distilling industry, having had its peak during the eighteenth century, reached a plateau of strength. Before the introduction of lager beer in

the 1840s, many breweries produced beer, ale, and porter in a small, twelve-square block area of Brooklyn known as "Brewer's Row" (Downard 1980). Elsewhere in the state, the Albany Brewing Company, founded in 1796, was being heralded as one of the finest centers of ale production in the country (5). Although there is evidence that the brewing industry was gradually moving west, "by 1860, the nation's 1,269 breweries produced more than one million barrels of beer, [and] 85 percent of it [was] still brewed in New York and Pennsylvania" (Boyer 2001). This information supports the statement that the "primacy of cider" is a scholastic misconception, at least in regards to New York City. Beer was New York's most popular drink, while cider and whiskey were frontier beverages, centered around the areas of Kentucky and southern Indiana (Downard 1980).

Worth mentioning is the fact that drinking spaces shifted significantly over the focus period. Spirits were considered good for beginning a day's worth of hard labor, and this is evident by the fact that the prominent area of drink consumption changed from the home to the tavern (i.e., a place closer to the area of labor). Additionally, an influx of Irish immigrants in the 1810s and German immigrants in the 1840s facilitated the opening of porter-houses and beer gardens, respectively. The collective existences of these establishments allowed for a more widespread popularity of a variegated smorgasbord of drinks that now included ale, brandy, cider, gin, ginger-beer, mead, mint julep, porter, and punches (Hauck-Lawson 2009).

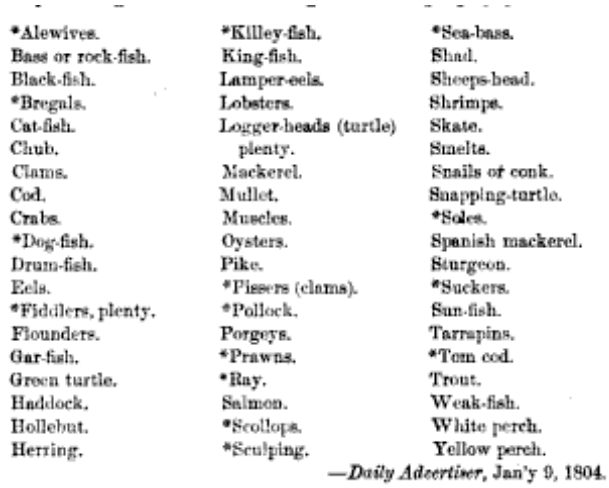
Fish and Shellfish

The Hudson River, Raritan Bay, and Long Island Sound can all be found within the confines of New York. The Hudson is located to the west of the Manhattan Island.

Flowing for over three hundred miles, the river serves as a boundary between New York and New Jersey (Jackson 1995). It is home to hundreds of species of fish and shellfish (Levington & Waldman 2006). Raritan Bay is located in the southern-most tip of New York. Throughout the 1800s the bay was a vital area for fishing as well as clamming and oystering (Jackson 1995). Over-extraction of these resources led to the bay's downfall; productivity peaked around the late 1880s (USGS). The Sound can be found between Connecticut and Long Island, New York. With about 1310 square miles of water stretching 110 miles long, the Sound was home to a bevy of saltwater fish (Andersen 2004). Great prosperity came to the sound for its whaling and sealing industry, but only for a limited time.

Colonists developed the Port of New York from the Upper New York Bay. Its size and proximity to the open sea made it an ideal location for trading (Jackson 1995). So many fishing vessels and merchants passed through the port to trade fish and other seafood that by around 1850 it became one of the world's most important ports (1995).

Deerfield, a town located in the upper mid-west of Massachusetts, provided a great deal of fish to New York. Sold by the quintel, the most popular fish brought from Deerfield to New York were salmon and shad. Fish in barrels were preserved by pickling; in the late 1700s, salt would become the main method of preservation (Benes 1984). Gloucester, also a Massachusetts town, is located in the upper east tip of the state. Winter fishing was a very popular occurrence in Gloucester for it brought year-round employment for fishermen (Kurlansky 2008).



*Alewives.	*Killey-fish.	*Sea-bass.
Bass or rock-fish.	King-fish.	Shad.
Black-fish.	Lamper-eels.	Sheeps-head.
*Bregnls.	Lobsters.	Shrimps.
Cat-fish.	Logger-heads (turtle)	Skate.
Chub.	plenty.	Smelts.
Clams.	Mackerel.	Snails or conk.
Cod.	Mullet.	Snapping-turtle.
Crabs.	Muscles.	*Soles.
*Dog-fish.	Oysters.	Spanish mackerel.
Drum-fish.	Pike.	Sturgeon.
Eels.	*Pissers (clams).	*Suckers.
*Fiddlers, plenty.	*Pollock.	Sun-fish.
Flounders.	Porgeys.	Tarrapins.
Gar-fish.	*Prawns.	*Tom cod.
Green turtle.	*Ray.	Trout.
Haddock.	Salmon.	Weak-fish.
Hollebut.	*Scollops.	White perch.
Herring.	*Sculping.	Yellow perch.

—*Daily Advertiser*, Jan'y 9, 1804.

Figure 4.3 Fish commonly found in New York Markets c. 1804 (De Voe 1867)

The most popular types of fish provided for New York City included cod, mackerel, bluefish, striped bass, salmon, shad, and sturgeon. Eels and some species of sting ray (Clear-nosed, Spotted, and Whip-Sting to name a few) were also sold in markets (De Voe 1867). Fish were reared and locally brought to markets, or they were preserved and shipped to trading ports to be sold. Menhaden, a miniature fish used mainly for oil and bait, was caught around the metropolitan area.

Fishhooks, nets, and the occasional spear were most commonly used in procuring fish. Passive gear, such as gill nets (nets attached to poles that could tangle a fish's gills), fyke nets (nets that trapped fish into pockets), and the classic hook-and-line fishing poles, relied heavily on the movement patterns of the fish. The gear was kept still on the waterway's floor, then reeled up and brought to the surface once full of fish (Hubert 1996). Active gear, such as dredges (half-oval shaped nets) and trawls (funnel-shaped nets), is attached to moving vessels to capture fish as it moves along (Hayes, Ferreri, and Taylor 1996). Both passive and active gears were used primarily during deep-sea fishing

and could rear a great amount of fish; fishing poles and spears were usually utilized in freshwater fisheries and could only capture 1-2 fish at a time.

An assortment of fishing boats were used during the first half of the 19th century. Schooners, a boat created in 1713, were "sleek, two-masted vessel[s] with fore–and-aft rigging and the ability to put a tremendous amount of canvas in topsails" (Kurlansky 1997). Their speed reduced sailing time between ports. Dories were smaller than schooners and less heavy, making them easier to paddle until the boat was full of fish (Kurlansky 2008). Some fishermen would unload their catches from the nets into cars. "Cars" (large covered boxes floating in the water with cracks to keep water flowing in an out) would travel alongside boats and were equipped to carry up to 4,000 pounds (McKay 1969).

In regards to the shellfish industry, the Hudson River was one of the most important oyster areas not only because of its closeness to the heart of Manhattan and the seaport, but also because of its prime conditions for oysters. Staten Island's Raritan Bay, the Great South Bay, Jamaica Bay, and the Long Island Sound were also home to many of the oysters that were traded and sold in the city. Staten Island's waters produced the greatest amount of oysters in the city and were eventually some of the first to be depleted.

The demand for oysters in New York led to a depletion of oyster beds throughout the city and forced farmers to find innovative ways to revive these habitats. Farmers began to import oysters from out of state to replace the native oysters. The locations of these oyster beds changed because of depletion and polluted waters. New transportation methods, such as steamboats, canals, and railroads, increased the shellfish trade in and out of New York and allowed oysters to be exported and imported more easily.

Agriculture and trade

Grain production

During the years between 1790 and 1860, grain production moved increasingly further away from the city. When the Erie Canal opened, grains could be imported from interior states at a lower price than it would cost to produce them closer to New York City. Many farms around New York City that once produced grains, especially in Kings and Queens County, began to focus more on fruit and vegetable production instead (Linder and Zacharias 1999).

Technology and farming

As this machine-focused farming began to emerge, the shift of focus of agriculture in New York from grains to fruits and vegetables also began to occur more rapidly. While corn shelling was one of the most time consuming chores of farm life, this practice stayed relatively constant until shelling machines were introduced in the early 1800s.

A-shaped drags were commonly used to break up soil. Hoes were used to plant corn, and small grains such as wheat, oats, and rye were seeded by hand. Sickles were the main tools used to reap the grain harvest until 1750 when the cradle scythe became popular. This simple tool increased efficiency threefold. Small weeds were fought off with hoes, and flails were used to thresh the grain. In New York, however, where a greater volume of grains were produced, this method was not efficient enough. Farmers instead used horses and oxen to tread on the grain to thresh it. Although this method was crude and not much faster, it required less labor, and therefore kept costs down.

Winnowing, or removing the chaff from the grain, was done by hand by farmers until well into the nineteenth century. Generally, the grain would be put in a basket and repeatedly thrown into the air so that the chaff could fly away in the wind. This chaff blew into the fields, which helped to fertilize them. Harvesting corn, also known as shelling, was also done by hand and was very time consuming and labor intensive. This practice stayed relatively constant until shelling machines were introduced in the early 1800s, but the chore was still labor intensive (Hurt 2002).

Food consumption

The diet of New Yorkers did not change dramatically between 1790 and 1860, but one significant change was the popularity of potatoes. The potato had been seen as a food fit for hogs rather than people ever since it had been brought to America. Its production remained low, and it would mainly be found growing in people's home gardens. Around the year 1850, however, the potato began to assert itself as a major starch in Americans' and especially New Yorkers' diets (Hedrick 1933).

Agricultural trade

In different regions of the United States, certain agricultural products were better suited to be cultivated, so oftentimes regions would specialize in producing and exporting different foods. For instance, the New England region, while able to produce a variety of agricultural goods, was never able to produce export goods comparable to those of the middle or southern colonies. New England colonies frequently grew and traded corn, root crops, fruits, and vegetables in abundance, as well as raised a considerable amount of

livestock (Hilliard 1972). On the other hand, corn was the main trading crop in the more southern regions of the Northwest and was often shipped in great quantities to the South (Clark 1966). The South also cultivated a specific variety of crops, mainly including cotton, rice, sugar, and tobacco. These crops were popularly grown in Southern regions due to the fact that they were well suited to slave labor (Benedict 1953). Figure 4.4 below, provided by Robert E. Gallman in his article "Changes in Total U.S. Agricultural Factor Productivity in the Nineteenth Century," provides data documenting the amounts of different food products that were cultivated in various regions in the United States in the year 1791.

	Wheat	Rye	Barley	Oats	Indian Corn	Buckwheat	Potatoes
New England	11	15	20	30	30	15	150
New York	10	12	14	25	25	16	90
Pennsylvania	10	12	13	15	15	16	65
New Jersey	9	11	12	14	14	15	60
Delaware	10	12	13	15	15	16	65
Virginia	7	9	9	25	25	15	60
Carolina [b]	6	10	8	23	20	15	50
Western Territory	25	25	36	37	30	40	200
Average [a]	10.0	12.7	14.4	24.6	24.0	17.1	92.3

SOURCES: *Lines 1–8*: Samuel Blodget, *Economica, A Statistical Manual for the United States of America* (1806; reprint ed., New York: Augustus M. Kelley, 1964), 97. Blodget gives estimates for "good" crops and "common" crops. The figures in the table are for "common" crops, since I am interested (see text) in the average and usual performance. *Line 9*: Weighted averages of the figures in lines 1–8. The weights are population weights from U. S., Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957* (Washington: GPO, 1960), Series A123–A180 for the year 1800.

[a] The averages were computed with weights for 1800 (see above) for reasons made evident in the text.

[b] "Carolina" is understood to include both North and South Carolina.

Figure 4.4 American crop yields in bushels per acre (Gallman 1791)

Some food products that were vital to international trade were various grains and sugar. Exports of bread products to England averaged at $738,000 annually, and had not surpassed $1.2 million since 1820. Data shows, however, that between 1846 and 1850 the figure increased to 13.9 million. During this time, approximately 10 percent of America's

total domestic exports were composed of grain exports to England. In 1847, it is documented that 40 percent of England's imports of wheat and flour originated in the United States (Clark 1966).

The public consumption and trade of sugar in the United States increased rapidly during the nineteenth century. This occurred primarily in richer, more industrialized cities. At this time, however, those who cultivated sugar cane in America did so more often for their own use or for domestic sale than for international export (Galloway 1972). Some domestic centers of sugar production were located in Hawaii and Louisiana (1972). Because of the high demand, and the fact that sugar cane was cultivated best in humid, tropical areas, various outside groups competed to supply the United States with its sugar needs. One important country to do so was Cuba, which was located close by and therefore a convenient source of supply (1972).

As different regions in the United States specialized in the production of various agricultural products, it was initially difficult to transport these products across the nation due to a lack of effective methods of transportation. This all changed, however, with the construction of the Erie Canal in 1825. This waterway became financially beneficial to the United States, especially to New York City and the regions through which the canal passed (Clark 1966). This is illuminated by looking at the Erie Canal's effect on one neighborhood in Brooklyn, New York: "King's County's transition from grain to vegetable production from about the 1850s was driven by advances in transportation, especially the opening of the Erie Canal, which shifted regional cost advantages and thus made commercially possible the importation to the growing urban population of the New York City area of cheaper grains grown in upstate New York and the upper Mississippi

Valley. In neighboring Queens County, too, wheat and flour had been the staples until the canal was built " (Linder & Zacharias 1999). It is clear that advances in technology affected the possible exchange of goods, and therefore changed the patterns of domestic trade within the United States.

DISCUSSION

Consumption

Meat

The region of New York was settled by an ethnic mix, and the meats eaten reflected characteristics of the people who settled there. (Oliver 2005) The Dutch brought cattle and hogs to America and bought hardy beef cattle from New Englanders. The Dutch also ate thick, Holland hogs and made certain to have a variety of domestic fowl, including chickens, turkeys, and geese. Among affluent Dutch, meals consisted of mutton, beef, veal, and poultry with seasoned vegetables (2005). It is interesting to note that a much greater amount of meat was consumed in the New World than in Europe (2005).

The English took advantage of the New World's climate because it was similar to the country they had left behind. Pigs and cattle were raised on family farms and slaughtered in the fall or winter to take advantage of the natural preservation that would occur in the cold (Smith 2006). Beef was salted and smoked and sausage was occasionally produced. Mutton was also consumed, but the consumption and use of the sheep itself depended on the value of wool. Breakfasts for the wealthy usually consisted of chicken, ham, veal cutlet, beef, and pork, along with various fruits and breads (Oliver

2005). English style boarding houses, taverns, and chophouses were scattered throughout the city offering beefsteaks, muttonchops, and broiled chicken (Grimes 2009).

The Germans were known for cooking salty meat and sweet fruit. They thus made plenty of use of smoked ham and pork sausage. The Germans continued their meat-eating habits from the old world, displaying a preference for pork, lamb, venison, turkey, chicken; pork was consumed most widely (Oliver 2005).

Alcohol

In this age of extreme drinking in American history, it becomes of interest to address the question of why people drank so much during the early nineteenth century, as the reasons for consumption will have profoundly affected its rate. One frequently cited reason for the circumstance of drinking is that of medicinal health. There is a perception among scholars that alcohol was prescribed left and right.

One historian writes, "Doctors …suggested consumption of alcoholic beverages for a wide variety of ailments" (Williams 1980). Not only was alcohol considered healthy, but water was considered unhealthy. As a beverage, beer "was still required in New York during the eighteenth century because the public water supply continued to be unsafe…people would go on drinking manufactured beverages, preferably those with some alcoholic content" (Baron 1962). The fact of alcohol's prevalence as a medicine is reflected in the positive attitude the general public had toward this beverage. "Most people thought whiskey was as essential as bread" (Lender 1982). This also gave rise to a change in the way drinking was displayed and perceived. Within the home, the religiously inclined society of the nineteenth century northeast curbed any deviant and

disturbing acts one may associate with drunkenness. However, "The explosive growth in the number of taverns [in New York City] between 1830 and 1860, [and] their roles as centers of working-class recreation and social life" promoted an amazing surge in tavern violence and social conflict (Kaplan 1995).

It is in such behavioral issues that the origins of the Temperance Movement found themselves. A desire to curb drinking existed even in colonial times, but gained speed during the second quarter of the nineteenth century as the loss of certain religious, social, familial, and institutional mores that controlled behavior became more and more apparent. Temperance was a way to "re-establish control over the increasingly popular middle classes making up the American 'modern man' (Grusfield 1986). This movement began in an organized way with the establishment of the American Society for the Promotion of Temperance in 1826, and continued until the prohibition of alcohol in 1920.

Fish and shellfish

Deep-sea fishing was the most popular form of fishing. The amount of fish brought to markets from the sea spurred an increase in demand. Farmers living on New York City and Long Island shores would also contribute to fishing production. Seen as a means to supplement their income, farmers would often fish in their local fisheries. Afterwards, they would either personally bring their catches to markets or load them onto boats that operated between their towns and Manhattan (Jackson 1995).

In addition to deep-sea fish, oysters, which were native to New York City harbors, were also very popular. Oyster consumption in New York City was so high that by the 1820s, most beds in New York had been overharvested and were nearly barren

(Kurlansky 2008). With depleted beds, farmers had to come up with a way to keep oyster production strong. They did this through a process called cultivation. Artificial beds would be created where natural beds once stood and oysters from other locations would be brought in to grow in the water. This oyster farming including planting seed, cultivating the bottom, putting down shell material called cultch, and then transplanting and harvesting outside oysters (Timmons et al 2004). By 1830, many of New York's oysters were no longer natives from the city's waters. Cultivation allowed the city to continue to produce oysters even if they were not naturally from New York.

Agricultural Products

The ethnic mix of people in New York City created a demand for a wide variety of fruits and vegetables. Grain consumption generally consisted of wheat, barley, rice, and oats from the Europeans with corn from the Native Americans, but fruit and vegetable consumption was much more diverse. The influx of German and Irish immigrants changed the market and created a demand for products like cabbage and potatoes. The market responded to this demand by growing more potatoes and cabbages commercially, mostly in Queens and Brooklyn. Racist attitudes towards the Irish, who were often thought of as inferior to other white Europeans at the time, kept the "Irish potato" in America limited to being merely a small garden crop for home use until around 1850, when potatoes began to be more widely accepted in the American diet (Hedrick 1933).

Technology

Meat

As the United States entered the nineteenth century, the northeastern states were becoming industrialized and rapidly growing in population, and therefore, increasing amounts of foods were needed to sustain these regions. The development of steamboats and the construction of the Erie Canal created a new passageway to ship from the interior of the country to New York City in order to supply the ever-increasing demand for food. The Erie Canal grew in significance and had considerable influence in shipping meat products from the Midwest to New York City. Pork and beef packed in Chicago were regularly shipped to the city through the water routes. The opening of the canal pushed horse, cattle, and sheep production further from New York City. The Erie Canal remained economically competitive until the development of road and refrigerated train cars, which led to a decline in bacon and pork trade on the river (Clemen 1926).

Agriculture

The growing urban market in New York City created a demand for grains that could not be met by local farms, which were now focusing more on fruits and vegetables. The importation of grains was made possible due to the technological advances mentioned previously, specifically the Erie Canal and steamboats. An illustration of this situation can be seen in the New England area: "New England, an importer of certain kinds of food even during the colonial period, became increasingly important as a food deficit area throughout the 19th century…Baltimore, Philadelphia, and New York actively imported western foodstuffs as early as 1820 (Hilliard 1972)."

Through this data, it is clear that, when certain regions in the United States lacked the ability to cultivate certain food products, they developed the ability to import what they needed from distant regions with the help of new technologies. This is never clearer than when one looks at the effect of trade in New York City: "Farming in the New York City area, which had been devoted largely to grains and livestock, was transformed by the opening of the Erie Canal in 1825. On the one hand, the canal made it possible to transport grain cheaply from the Ohio Valley, where the cost of production was lower, to the city…On the other hand, the canal helped spur the transformation of New York into the country's leading port and most populous city" (Linder & Zacharias 1999). We can see here that the evolution of technology in New York not only helped to feed the city, but it helped it to grow, both financially and in population.

Fish & Shellfish

Most advances in fishing technology during this time were made solely for the reaping of more fish, not for safety precautions; fishermen didn't see fish "as a finite resource until the twentieth century" (Kurlansky 2008). Big catches equaled more money, and fishermen were more interested in reaping a profit than taking cautionary actions. Small-to-medium sized boats were ideal in the fishing industry for fish capture because fish tended to steer clear of the larger ships, like steamboats. Because of this, boats were subjected to dangers like capsizing or sinking under heavy loads. Though these dangers were present, fishermen continued to overfill their boats for chances of more profit.

Several advancements in technology benefitted the oyster trade. The introduction of the steamboat and steam technology increased trading between New York and other

locations, particularly Connecticut and Philadelphia. New York was also now able to ship enormous quantities of fresh oysters upstate to Albany and to Europe as well as import oysters from Long Island, Connecticut, and New Jersey. Steam powered dredges were introduced to collect more oysters from the water. This new method increased the number of oysters brought to the market dramatically. Because of the havoc it wrecked on beds, however, the use of steam-powered dredges was soon banned in New York (Kurlansky 2008). The finished construction of the Eerie Canal in 1825 also brought more efficient and profitable trade to the city. Connecting New York Harbor to the Great Lakes and Midwest, the canal opened the oyster trade up to the western region of the United States, and helped put more money in the hands of merchants. The rise of railroads had similar positive effects on trade. Railroads to Boston, Washington, the Great Lakes, and the West allowed New York oysters to be shipped out to these places on beds of ice (2008).

Production

Meat

After the Revolutionary War, thousands of settlers began to pour into the Ohio and Mississippi valleys. Thus, the heartland of agricultural production in America was pushed father west, away from Manhattan (Benes 1984). New York compensated by ensuring that connections to the west were still established through the development of the Eerie Canal (Burrows and Wallace 1999). As farmland disappeared from Manhattan, meats were acquired from further locations, such as Westchester and Duchess counties, New Jersey, and New England (Horowitz, Pilcher et al. 2004). The products of the farms

of more northerly states such as Ohio, Indiana, and Illinois could travel to Manhattan on the Eerie Canal (Danhof 1969).

Although most meat was imported, early New Yorkers were able to provide some of their own food by keeping domestic animals; Manhattan was full of English Cattle, hogs, sheep, and goats. As population increased, however, land became too valuable to use for food production. Inhabitants of the city came to rely almost entirely on food through the market. The practice of keeping domestic animals, particularly pigs, continued into the next century, however, as signified by a succession of laws that kept them from running free (Rothschild 1990). By the eighteenth century, most food came from the markets. The first markets arose in the late seventeenth century, and slowly became more abundant; the marketing system existed without any intermediaries. Legislation prevented middlemen from buying cheap and hiking prices, and protected the quality of food. Meat, poultry, fish, and produces were acquired on a daily basis (Rothschild 1990). It took a small amount of time for a cattle market to develop in New York, although pigs were driven to market as well as some wild game. Meat and poultry, though widely available in city markets, were often expensive, even at a reduced price at the end of the market day. Thus many working class wives kept their own animals, mainly pigs (Burrows and Wallace 1999).

Beef was a highly cherished domestic meat among European settlers. Within a decade or two of colonization, raising cattle became an economically significant activity. After the era of first settlement, wild food decreased in importance and beef predominated over other meats. Most people preferred to eat beef fresh, but the fatty portions were corned or salted; later, some of the corned or slated meat were smoked.

Making sausage was another way to preserve beef: Beef was produced on farms for family use, usually slaughtering in the fall or winter to take advantage of natural cold for preservation, so that most was available for use fresh. (Oliver 2005)

Fish & Shellfish

Fisheries played a vital role in the economy of this time period. With an influx of immigrants coming from overseas during this time, specifically during the 1820s, the fishing industry helped to provide jobs as well as a source of food for new families (USGS). The developments of man-made waterways, such as the Erie Canal in 1825, also brought a flood of trade from other fisheries in the northeast (Burrows 1999).

The whaling industry was probably the most prosperous (and hazardous) sublet of the fishing industry. Whales were once bountiful in the Long Island Sound, and the Port of New York held at least forty-nine whaling vessels in its base (1995). Though rearing a whale could potentially destroy a ship or drown an entire crew, it proved to be highly profitable: over 100 barrels of oil could be extracted from a full-grown whale (Andersen 2004). One sperm whale could be worth over to $3,000; the worth of a bowheads whale could reach over $5,000 (Moment 1957). Soon, however, whales were hunted to such an extent that they were almost brought to the brink of extinction; this, in addition to the surplus of whale oils in the markets, brought the whaling industry's prosperity to a close during the 1860s (Davis, Gallman, & Hutchins 1988). In regards to sealing, the New Haven South Street Fleet was a leader in the industry. Based in Long Island, the fleet hunted seals in the St. Felix Islands of the Pacific west, dried the seals' skins on the way to Canton, and traded the skins for goods such as tea and spices (Andersen 2004). Due to

sealing competition from other ports and a drastic decline in the seal population, the industry came to a halt around 1806 (2004).

With the second wave of the Industrial Revolution, new industries started to take up residence in New York. Shipbuilding, ceramics, chemicals and paint manufacturing, electrolytic copper refining, petroleum refining, and other industries brought more prospective employment to New Yorkers (USGS), and the arrival of the gold rush during the end of the 1850s drove some fishermen away from their boats and westward (McFarland 1911). The opportunity for new jobs in new environments showed to bring a slight decline in fishing careers.

The shellfish industry also became a great economic asset for New York. The hunting and gathering of shellfish, particularly oysters, is a relatively simple process. Oysters lend themselves to cultivation because of three prime reasons: they are unable to move from their beds on their own accord, they can withstand rough handling and long periods of exposure to air, and they have a unique life history which allows farmers to create new methods to control and increase their population. The most popular method for taking oysters from their beds involved the use of a dredge to drag along the bottom of the water and collect the shellfish. Boats would normally have two to four dredges that would scrape the bottom of the ocean and bring up shellfish. These boats were capable of gathering from one to five thousand bushels of oysters per day.

Because companies dumped their waste into New York's waters without consequence, many of the city's waters were polluted by 1860. Although many bodies of water, such as the Harbor and Hudson River, were still used for oyster cultivation, it was evident that the pollution would hamper oyster production in the near future. By 1850

both the Gowanus Bay and Jamaica Bay's Rockaway beds were closed to oystering because of raw sewage in the waters.

Agriculture

During the years between 1790 and 1860, grain production moved increasingly further away from the city. As described above in the meat section, the location of major farms began to shift west, and grains began to be imported along with meats. Although grains were being shipped in, fruits and vegetables were far more perishable and would not have survived the long journey. For this reason, farms around New York City, especially in Kings and Queens County, began to focus more on fruit and vegetable production. These farmers generally practiced "truck farming" and took their perishable produce to sell at nearby urban markets. The term truck farming, coming from a Middle English meaning of "truck," simply implies that the crops were produced for local markets. The portion of the population that kept kitchen gardens to supply their fruit and vegetable needs decreased, although Brooklyn and Queens were still predominately farm land until the middle of the nineteenth century.

As the population grew and people crowded into the dense urban area of the city, many people no longer had room for kitchen gardens. This opened up a new market for perishable goods that had never before been significant enough to cause mass commercialization. Farms in Brooklyn and Queens began to focus on growing fruits and vegetables to provide for the growing urban market. This urban area centered around the tip of Manhattan began to expand into Brooklyn and Queens more than ever before, and

by the middle of the nineteenth century Brooklyn was no longer dominated by farms (Tanner 1835).

CONCLUSION

In conclusion, the late eighteenth and early nineteenth centuries were exciting moments in the history of New York City's food and beverage production and consumption. The onerous demand for goods that arose from the bustling city's rapidly growing population fostered an enormous boost in New York's reputation as a center for trade. Marketplaces expanded and popped up all over the city, and many different kinds of meat, seafood, and produce were sold there. Alcohol likewise was produced heavily in New York, and consumed both privately and publicly. The technological advancements that came about in virtually every city food industry allowed for the movement of production from the inner city center to the rest of the state, the rest of the region, and eventually, the rest of the country. This chapter has outlined the boom in trade that occurred in the early nineteenth century, its subsequent tapering, and eventual decline. This drama of trade is part of the never-ending one that defines our city.

GLOSSARY

Beer: A beverage that consists of barley, water, hops and yeast. Beer is produced by a four-stage process in which the barley is malted (or allowed to sit in its own digestive enzymes, and subsequently cooked) and then crushed into a powder called grist. Grist is boiled in yeast and water, a mixture called wort. This concludes the "brewing" aspect of beer-making, and the final stage is the fermentation, carbonation and filtration of the brew. Ale and porter are dark, strong, aromatic beers that are produced through top-fermentation, a procedure which utilizes a yeast that rises to the top of a fermenting vat during fermentation. *See also*: Lager beer

Bushel: A unit of dry volume equivalent to eight gallons.

Canals: Man-made channels of water.

Cider: Drink made from the juice of crushed apples. 'Hard' cider, as its alcoholic counterpart is known, is formed when this juice, known as must, ferments in special casks made for this purpose. In this paper, the above beverage will be called simply 'cider.'

Fisheries: Places where fish are reared for commercial purposes

Fishing: The act of catching fish, usually by means of a hook and line, net, spear, cage, or other tool. *See also*: oystering

Foodways: Routes along which food is traded

Markets: An area where businesses sell goods, services, or labor.

Lager beer: A clear, sparkling beer introduced to the United States in the 1840s by an

influx of German immigrants. It is made by a different yeast that settles at the bottom of brewing vats during the fermentation process. *See also*: Beer

Oystering: The act of procuring oysters, usually by means of a net or cage. *See also*: fishing

Quintel: One hundred pounds.

Shelling: The act of harvesting corn.

Truck farming: The term truck farming, coming from a Middle English meaning of "truck," simply implies that the crops were produced for local markets.

Winnowing: The act of removing the chaff from the grain

Whiskey: Exists in two major forms: *bourbon* and *rye*. Rye whiskey is made almost completely from its namesake, whereas bourbon, which originated in Kentucky, is a blend of three different grains, one of which is usually acorn.

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