Agriculture and farm life in the New York City region, 1820-1870

Louis P. Tremante III
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Agriculture and farm life in the New York City region, 1820-1870

by

Louis P. Tremante III

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Agricultural History and Rural Studies
Major Professor: R. Douglas Hurt

Iowa State University
Ames, Iowa
2000

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Graduate College
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This is to certify that the Doctoral dissertation of

Louis P. Tremante III

has met the thesis requirements of Iowa State University

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For the Major Program

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For the Graduate College
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ABSTRACT

Today, northern New Jersey, the lower Hudson Valley and Long Island lie within the most densely populated corridor of land in the United States. In the early nineteenth century small towns, forests, farms and gardens populated this bucolic landscape. In the 1820s New York City's ascendance as the most important port and largest city in the United States changed this situation forever. This dissertation charts that transformation, and focuses on a single aspect: the story of how rapid urban expansion influenced agriculture and farm life in sixteen counties surrounding and including Manhattan Island. Commercial expansion encouraged population growth, first only in Manhattan, but later in neighboring Brooklyn and Newark. Together these three cities exerted a profound influence on local agriculture and farm life, but within certain limits.

Chapter one focuses on the historiography of peri-urban agriculture and the nature of urban expansion in the New York City region. It provides a framework for interpreting the various responses of agrarian men and women to the sudden growth of the metropolis, in terms of farming systems. Chapter two seeks to evaluate the direct economic effects of urbanization by examining agricultural production, property values, probate records and land tenure patterns. Of interest are the ways farm families took advantage of new opportunities by adjusting production strategies, by selling and developing their land, or by leasing it to tenants. Chapters three and four are concerned with urban influences on markets. Chapter three focuses on retailing, including farm gate sales, peddling and transactions made at the public markets. Chapter four deals with agrarian wholesaling, characterized by trade with country stores and city merchants. Chapters five through eight focus on agrarian resistance
to urban influences and by taking the reader step by step through each of the four seasons of the “agricultural year.” Of importance in this section are agrarian attitudes toward technology. In this era of “improvement” agriculturists in the New York City region selected new labor saving technologies with care, which earned them the scorn of the progressive farming movement. Chapter nine looks backward from the vantage point of 1870 and concludes that although the new metropolis reshaped the economic aspects of agriculture, the cultural characteristics of agrarian life, exemplified by the seasons, remained surprisingly strong.
CHAPTER 1. INTRODUCTION, REGION, MODEL

The New York City region today consists of nineteen counties in northern New Jersey, the lower Hudson Valley, the New York Bay area, and Long Island. Shown in Figure 1.1, the region lies within a densely populated corridor of land extending along the Atlantic coast from northern Virginia to Boston and boasts a population of more than 15.25 million people, approximately 6 percent of the national total. Although many farms still exist in the region, agriculture today plays a minor role in the lives of the men and women who call this place home. A portion of the area even has no farms at all.1

It is no surprise to learn that the New York City region of the present day scarcely resembles northern New Jersey and downstate New York of 1815. Characterized by small, quiet towns, forests, farms and gardens for fully 200 years after settlement by Europeans, this bucolic environment began the transition from farm to city and suburb in the decade following the end of the War of 1812. Numerous scholars have documented that in the period from 1815 to 1830 international commerce, internal trade, overseas immigration, and intra-regional migration, plus a healthy birth rate propelled the City of New York and its sleepy neighbors Brooklyn and Newark, from overgrown settlements into major cities at an almost frightening pace. Not as well documented, and surprising to many is the fact that while the pastoral atmosphere disappeared, agriculture persisted. “Farms in New York City?” people remark in surprise. Yes. Figure 1.2 shows a spectacular view of cultivated fields on Manhattan’s fertile Harlem Plain. This engraving is not from 1750 or 1800, or even 1815, but from the late date of 1869, a time when the population sharing that same small island approached one million people. Urban growth eventually paved over the fields in this image, but the men and women who worked the soil adapted to changing conditions in such a
Figure 1.1 The New York City Region
way as to postpone the disappearance of the last farm in Manhattan until the 1940s, and even
later in Brooklyn and the Bronx. Census reports still locate a handful of "farms" in the
borough of Queens and on Staten Island. Of course, many agricultural enterprises continue
to exist in the other counties that make up the region.²

How did agrarian men and women survive the transformation from quiet countryside to
Megalopolis? Why did they choose to stay? How (if at all) did urban expansion effect
agriculture and farm life in places a bit farther from New York – thirty, forty, or even fifty
miles distant? Whether near or far from the island of Manhattan, agriculture survived by
changing along with the environment. Yet the agriculturists working the land were not

Figure 1.2 View North and East of Central Park Overlooking the Harlem Plain, 1869

Source: Joseph Shannon, comp., Manual of the Corporation of the City of New York for 1869
(New York: E. Jones, 1869), 432.
helpless pawns, pushed about in the name of progress. Although few in number they took advantage the opportunities presented by the “new metropolis,” even resisting change at times, sometimes successfully, other times less so. For these reasons, and because it was one of only a handful of locations large enough to warp local agricultural patterns, the area surrounding New York City provides an excellent setting to view a heretofore unexamined aspect of the relationship between rural and urban environments. As the nineteenth century progressed similar patterns could be observed near other cities and large towns across the United States. But it happened first in New York.

Since the 1920s scholars have been fascinated by the fact than after 200 years of more or less static behavior, Northern agriculture underwent a complete realignment in less than a half-century. Historians, economists and others have identified various aspects of this transformation, including market orientation, use of technology, specialization of production, intellectual curiosity, and gender relationships. Two contributing factors have been singled out as likely candidates for encouraging the transformation. First, increasing consumer demand provided encouragement for risk-averse farmers to begin producing surpluses for external markets. Second, the start of an intellectual movement aimed at improving agriculture through education, literature and the application of new technologies. According to historian Clarence Danhof:

As long as distance from markets necessitated subsistence farming, or as long as such farming was continued merely by force of habit, the yields obtained from traditional technology were acceptable. But as farming became increasingly influenced by market considerations, and as the growth of urban population induced comparisons between the returns from farming and incomes obtainable from other occupations, interest in improving techniques attracted greater attention.
Much of what has been written about the agricultural history of the Northern United States seeks to refine the fine points of this assertion. In a recent book on the "agricultural transition" in upstate New York, historian Donald Parkerson proposed that over three decades following 1835, the population of "semi-subsistence yeomanry" dwindled due to out-migration, while persisters and immigrants swelled the growing ranks of "surplus market farmers." Parkerson marks 1835 as the beginning of the realignment, but mild disagreement exists regarding this date. Studies indicate that depending on location, the agricultural transition in the North began some time between 1810 and 1840. Scholars are in more agreement that the decade from 1860 to 1870 marks an end point of the process.  

The historiography of Northern agriculture, while comprehensive, well written and researched, contains its share of shortcomings. For instance, the literature focuses on rural experiences, meaning that when historians write about agriculture they think in terms of rural environments to make a case. Thus, while what they write may be correct, it may also be applicable to only rural environments. This approach necessarily downplays urban influences on rural areas. Its also ignores the characteristics of agriculture and farm life in both urban areas and within a place called the rural-urban fringe. Writing in the 1940s, Richard B. Andrews defined the fringe as "that area adjoining the active expansion sector of the compact economic city in which there is an intermingling of characteristically agricultural and characteristically urban land uses." We have all passed through this fringe area today, home to automobile dealerships and used car lots, motels and trailer parks, horse stables and miniature golf courses. They also contain commercial vegetable gardens and working farms, alongside empty fields. A lone silo, its silvery top long removed, a dilapidated barn, a fallen down farmhouse peeking out from behind overgrown lilac bushes
are images that exist in reality just beyond the edge of town. The rural-urban fringe is also a place of new construction and "the clanking of bulldozers and the thumping of construction crews are ubiquitous background noises."⁵

Fringe regions move continuously through space and time. Their boundaries are difficult to define and are unstable. A total lack of adherence to political boundaries makes it difficult to collect reliable statistics on rural-urban fringe activities. For very practical reasons historians avoid this no man's land, with the result that a gap has emerged in the scholarship with respect to the agricultural and social history of urban and urban fringe regions. For example, estimating of farm tenancy rates for New York State, Paul W. Gates excluded data from New York County because the presence of so many non-farming renters would prejudice his calculations. More recently, the designers of the well-known Bateman-Foust sample chose to reject values returned from cities and their immediate environs. Drawn from manuscript schedules of the Eighth Census (1860), from which detailed studies of Northern agriculture have been made, the sample includes data from 102 "non-urban" townships and an equal number of "non-urban" counties. Finally, although it seems unintentional, the sample drawn from manuscript population schedules for Donald Parkerson's excellent study of agricultural change in nineteenth century New York State includes no data from seven out of eight of the southernmost counties in the state. No data on agriculture were drawn from any of these eight counties, all of which happen to be located within the New York City region as defined earlier in this chapter. With one exception, a monograph published last year on agriculture in "rural" Kings County, New York, scholars have overlooked the history of agriculture in, and near urban areas. This is no startling
Ten years ago geographer John Fraser Hart commented on the dearth of scholarship on fringe regions:

With a few notable exceptions, the urban-rural fringe has not been the focus of much scholarly study: it is too rural for persons interested in the city, and too urban for students of agriculture. The fringe is almost impossible to ignore, however, because one cannot enter or leave a metropolis without passing through it.  

The omission of urban areas and their environs from the history of American agriculture is also significant because it has permitted a rural bias to creep quietly into the literature. One place this bias presents itself is in the assumptions scholars make regarding farmers' cultural attitudes. A reading of our standard agricultural histories leaves one with the impression that Eastern farmers were conservative, cheap and stubborn. They accepted new ideas only with reluctance and then only when forced by external factors. They stubbornly resisted new tools and methods. They doggedly fought off assistance from state legislatures and the federal government. "Almost in spite of himself, a farmer might become enough interested in a new idea to apply it," wrote historian Hubert Schmidt of the average New Jersey farmer in the mid-nineteenth century.  

One source of this attitude comes directly from the publications where scholars draw their information: farm journals, agricultural society reports, and newspapers. David Maldwyn Ellis noted that agricultural editors like Solon Robinson and Horace Greeley "often berated farmers for their 'half-fenced, un-manured, shallow plowed, late-planted, poorly tilled apologies for farms.'" These writers and the historians who rely on them also held up the trans-Appalachian West as a model for the East. An excellent example of this attitude may be found with wheat, the cultivation of which decreased in the East after 1835, if not
even earlier in the New York City region. Regardless, many in the agrarian intellectual elite continued to advocate that farmers grow wheat for years after it was no longer a reasonable notion to do so for commercial purposes the Northeast.⁸

While Eastern farmers supposedly resisted change, a completely different situation existed on the other side of the Appalachians. Not only were Western farmers blessed with good soil, but they were also receptive to new ideas and seemed to take advantage of fresh opportunities to exploit the market. Hence, they raised wheat and shipped cheap flour east. They herded cattle, which they drove east and sold to farmers in New Jersey, New York and New England to finish. They adopted new implements and with little hesitation, including reapers, grain drills, corn planters, cultivators. Western farmers leapt at opportunities. Eastern farmers rejected them. Although there is surely some truth to the stereotypes, these assumptions about rural culture permeate the historiography of American agriculture.

Since agricultural histories show a rural, pro-western bias, there is hope that histories of urban areas will redress this injury. An ample field presents itself as New York and New Jersey boasted scores of villages and cities about which histories have been written. As both states could also be classified as predominantly urban by 1880 city and town development was inextricably tied to the local agricultural base. Unfortunately, agriculture receives little space in survey and monographic literature on cities. The standard survey histories of New York City history provide an example. Emphasis is placed on elements contributing to expansion and growth: the construction of buildings, streets, parks and monuments. Politics and the problems associated with inequality provide an element of human interest. For New York, this approach was established nearly ninety years ago by Isaac Newton Phelps Stokes in his multi-volume series *The Iconography of Manhattan Island, 1498-1909*. Stokes’
combined chronological and topical analysis is useful in depicting the development of New York City, but not its developing agricultural base. Two recent surveys of New York City history, both published last year, provide contemporary examples. Edwin G. Burrows and Mike Wallace’s *Gotham: A History of New York City to 1898*, and Ric Burns’ nationally televised *New York: A Documentary Film* follow a more or less consensus viewpoint of the city’s history. Farming and gardening remain hidden back in the seventeenth and eighteenth centuries along with the Indians, Peter Stuyvesant and heroes of the American Revolution. Agriculture receives virtually no attention in these works from the nineteenth century forward. In fact, most references in *Gotham* to agriculture after 1800 reference farming in the trans-Appalachian West.\(^9\)

Exceptions do exist. Robert Ernst devotes two pages on gardeners and farm workers in his study of immigrant life in nineteenth century New York City. Roy Rosenzweig and Elizabeth Blackmar briefly discuss farming and related activities in what is now included within New York’s Central Park. Similar patterns exist in historical literature on other cities as well. For example, John T. Cuningham references agriculture in Newark, but it amounts only to rural Essex County farmers who marketed their produce in town. Where the agricultural history of the Northeast is distorted by a rural, pro-Western bias, urban historians tend to ignore the farms that preceded and thrived within cities altogether.\(^10\)

A third group of scholars, consisting of economists, geographers and urban planners have produced a large body of literature primarily concerned with the agricultural geography of cities. Such studies are not historical, but can help illuminate processes that transcend time and space. For example, Edward A. Duddy’s *Agriculture in the Chicago Region* provides a detailed statistical portrait of farming in Cook, the collar counties, and portions of
Duddy created a series of maps that illustrate the relationship between agriculture and an urban area at a single point in time. The study is useful because it confirms that observations made for the New York City region in the nineteenth century are not anomalous. Used with care, agricultural geography can provide intellectual frameworks for historians. For example, concern exists today over loss of land to suburban development. John Fraser Hart writes, “Urban expansion always wins. The basic question of land conversion is not whether, but when.” Economists (and realtors) often reject the automatic assumption that conversion is a total loss, instead emphasizing that urban proximity benefits agriculture in terms of efficiency, intensity of production, price and costs. A recent article on the front page of the New York Times provides a timely example, and a way to think about how farmers in New York City, Brooklyn or Newark may have viewed their situations 150 years ago. Located just outside the western border of Los Angeles County, dairy farmers in Chino Valley, California are currently competing with encroaching suburban growth. Farm families are gradually selling out, but view this as their good fortune because:

In Southern California sprawl has been such a constant dynamic in the area’s restless geometry of growth, especially in the post-war era, that it is not always an enemy to many of those whose lives are uprooted by it.

In the case of the Chino Valley dairy farmers, the surge of new subdivisions is actually injecting new vitality into one of the state’s largest industries. Many of the farmers here are selling outmoded facilities and their valuable tracts of land, and are using the ample profits to build even larger and more efficient operations in more bucolic areas.

Indeed, the big increase in land values as demand for new housing soars is financing a transition that will result for most people not in broken dreams or the end of a way of life, but in a new generation of highly efficient dairies. As a result, California seems likely to substantially widen its lead over Wisconsin and the No.3 dairy state, New York.
An equal number of interpretations, not nearly as positive may be cited, given the dwindling number of farms and the public’s concern about open space. Agricultural geography is therefore useful because it can provide methods and models from the present to help interpret change in the past.\textsuperscript{12}

These borrowed tools must be used with caution. Over the past three decades scholars have relied on a land use hypothesis first proposed 175 years ago to interpret agricultural change near cities. In 1826, German farmer Johann Heinrich von Thünen published the essay, \textit{Der Isolierte Staat, (The Isolated State)}, in which he presented a model to explain observations regarding agriculture in the vicinity of the town of Mecklenburg. The essay borrowed from classical economic theory and assumed that when other factors (e.g. soil quality) are held constant, agricultural production can be predicted, based on the distance from farm to market. Assuming that land costs drive farmers to seek the highest returns from the soil, producers on the most expensive land can, and will raise the most valuable crops possible. A visual representation of this model places a “town” at the center of a series of concentric circles, or rings. Each ring represents a different mode of production, the most intensive uses corresponding to the innermost rings. In Thünen’s world, vegetable and dairy productions comprised the first ring, wood the second, grain and hay the third, and livestock and butter in more distant ones. He later modified the model by extending a river through its center, reasoning that transportation improvements raised land values and hence, agricultural intensity.\textsuperscript{13}

Over the years American observers did not fail to notice that intensive agriculture, characterized by garden plots, multiple cropping and high fertilization clustered along the built up portions of urban areas. In fact, five years before Thünen, a correspondent to the
New York State Board of Agriculture noted, “some may sneer at the idea of farming in the City of New York, but from present appearances, all that portion of the county connected with the city will assume the appearance of one vast market garden.” The conversion of butter dairies to fluid milk production along the rail lines built out from Manhattan into New Jersey, the Hudson Valley and Long Island in the 1840s also seemed to confirm the German farmer’s observations.¹⁴

Still, a problem emerged much later after Der Isolierte Staat was translated into English in the middle 1960s. Attracted by the visual simplicity of the model, geographers renewed attempts to explain the spatial relationships between producers and markets. They “tested” the model by applying it to numerous situations, many international and some historical. By the late 1980s, however, an increasing number of geographers pointed out examples where complex realities failed to adhere to the confines of a simple model. With so many shortcomings, it was reasoned perhaps new approaches should be developed. Yet by this time historians happened upon Thünen’s rings and saw how easily they could make connections between population concentrations and agriculture in the past. In a widely read book on Chicago, historian William Cronon wrote of Thünen:

One only has to imagine his central city in a nineteenth-century American setting – Chicago in 1870, for instance – and then travel outward through the surrounding rural countryside, to experience an odd sense of déjà vu. Leaving the city and its factories behind, one first passes through a zone containing densely populated farm settlements practicing intensive forms of agriculture. Truck gardens, dairies, and orchards dominate the landscape, with many signs that farmers are investing their profits in outbuildings, fences, fertilizers, and other technologies for “improving” agriculture. As one travels further west, these intensive farms gradually give way to newer and more sparsely settled communities. They practice more extensive agriculture, exploiting the prairie soil by raising unrotated crops of corn and wheat. Farther west still, these give way to the open range.
Certainly, a series of circles could be drawn, centered on New York's City Hall to give a
general impression of Manhattan's influence on agriculture and farm life. Recently Marc
Linder observed: "von Thünen's description bears an uncanny resemblance to the
developmental phases of nineteenth century Kings County agriculture." Yet for New York
City and the surrounding region, a new method of interpretation is called for.¹⁵

Again, geographers provide some direction. Writing about nineteenth century London,
P.J. Atkins focused on the fact that Thünen's ring schematic is too rigid. According to
Atkins, "there was never at any stage in the eighteenth and nineteenth centuries anything
approaching a complete circle of market gardens around London." Instead, he found that soil
fertility and location with respect to the Thames were the most important considerations for
agriculturists. Edward Duddy's maps of Chicago dating from 1925 also show that farm
production did not follow circular, or even neat boundaries. Again, it seems that productive
activities located in certain areas for many different reasons, including soil quality, micro-
climactic conditions, the availability of transportation and land costs. The same is true for
agriculture in the New York City region. Thus, by viewing agricultural activity not just in
terms of production, but also by the methods used, land tenure patterns and the personal
characteristics of the operators, a typology may be constructed that explains how a
checkerboard pattern developed in and around cities such as New York, London or
Chicago.¹⁶

Three informal systems of agriculture eventually emerged in the New York City region,
but through the end of the second decade of the nineteenth century, a system of mixed
farming characterized agriculture in New York and New Jersey. Under this system farm
families tended fields of wheat, rye, and corn. They cut meadow grass and raised livestock.
A few conveniently located farming families raised garden vegetables and manufactured butter for sale in town, and a handful of horticulturists established operations on, or just outside Manhattan Island. The operators, and their few tenants generally came from old European immigrant stock. They marketed the products of the farm through both retail and wholesale methods. By 1820 however, two new farming systems had begun to emerge from portions of the older mixed system. As can be discerned from the names of two of the systems, distance, or rather, access to a terminal market was important. But it is not the sole factor in determining which category the farm or garden fits into. Table 1.1 provides the main features of these three simple systems. Urban agriculture is characterized by commercial horticulture and confinement livestock husbandry. Urban agriculture relies on heavy use of urban-generated waste products. Urban agriculturists are generally recently arrived immigrants who seek tenant situations. They engage in mostly retail trade. Near-urban farmers practiced elements common to both the mixed and urban farming systems.

Certainly, by the 1830s all three systems existed within the New York City region.

Table 1.1 Farming System Characteristics

<table>
<thead>
<tr>
<th>System</th>
<th>Crop Production</th>
<th>Fertilizer Sources</th>
<th>Nativity of Operator</th>
<th>Livestock Production</th>
<th>Marketing Method</th>
<th>Operator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Nursery, Fruits &amp; Vegetables</td>
<td>Urban</td>
<td>Recent Immigrant</td>
<td>Confinement, Swill Milk, Hogs</td>
<td>Retail</td>
<td>Leasehold</td>
</tr>
<tr>
<td>Near-Urban</td>
<td>Grain, Grass, Fruits &amp; Vegetables</td>
<td>Urban &amp; Local</td>
<td>Old Immigrant</td>
<td>Pastured, Fresh Milk, Hogs</td>
<td>Retail &amp; Wholesale</td>
<td>Owns &amp; Rents</td>
</tr>
<tr>
<td>Mixed</td>
<td>Grain, Grass, Wild Crops</td>
<td>Local</td>
<td>Old Immigrant</td>
<td>Pastured, Butter &amp; Milk, Hogs &amp; Sheep</td>
<td>Retail &amp; Wholesale</td>
<td>Owns &amp; Rents</td>
</tr>
</tbody>
</table>

*Source:* The intellectual foundation for this table is explained in Chapter 1.
The division of the mixed agricultural system into three farming systems during the first quarter of the nineteenth century was the result of a combination of environmental conditions that created opportunities for agricultural specialization. The most important of these is the abrupt rise in non-farm population after 1820 through immigration and natural increase.

Table 1.2 shows that over time more and more of the region's new residents resided in New York, Brooklyn or Newark.

Table 1.2 Population Statistics of the New York City Region, 1800-1870

<table>
<thead>
<tr>
<th>Census Year</th>
<th>New York</th>
<th>Brooklyn</th>
<th>Newark</th>
<th>Region</th>
<th>Percent Outside the Three Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>60,515</td>
<td>2,378</td>
<td>N/A</td>
<td>214,243</td>
<td>76.65</td>
</tr>
<tr>
<td>1810</td>
<td>96,373</td>
<td>4,402</td>
<td>N/A</td>
<td>243,745</td>
<td>69.86</td>
</tr>
<tr>
<td>1820</td>
<td>123,706</td>
<td>7,175</td>
<td>6,507</td>
<td>277,013</td>
<td>64.71</td>
</tr>
<tr>
<td>1830</td>
<td>202,589</td>
<td>15,394</td>
<td>10,953</td>
<td>312,416</td>
<td>55.03</td>
</tr>
<tr>
<td>1840</td>
<td>312,710</td>
<td>36,233</td>
<td>17,290</td>
<td>357,501</td>
<td>46.00</td>
</tr>
<tr>
<td>1850</td>
<td>515,547</td>
<td>96,838</td>
<td>38,894</td>
<td>458,669</td>
<td>36.82</td>
</tr>
<tr>
<td>1860</td>
<td>813,669</td>
<td>266,662</td>
<td>71,941</td>
<td>608,364</td>
<td>29.98</td>
</tr>
<tr>
<td>1870</td>
<td>942,292</td>
<td>396,099</td>
<td>105,059</td>
<td>828,160</td>
<td>29.87</td>
</tr>
</tbody>
</table>

Source: Federal Census data.

* Excluding New York, Brooklyn and Newark.

New York's population growth as many scholars have pointed out, was unprecedented. It stood at 60,000 in 1800. After a sharp rise and leveling off period, the number of people more than doubled in two decades. By 1830 the population stood at 202,000, nearly four times its 1800 level. This trend upward continued, and by 1860 over 800,000 people lived on Manhattan Island alone. Outside New York such growth began somewhat later, but at similarly rapid rates. For example, the village of Brooklyn reported only 7,000 people in 1820, doubling in size by 1830. In the 1850s the city's population grew by nearly 300 percent. By the eve of the Civil War the situation in existence only two generations earlier
had been reversed. Then, 77 percent of the regional population lived outside New York, Newark or Brooklyn. In 1860, of the more than two million people who lived in the region, fully 70 percent of these people lived in one of the three cities. This shift had far-reaching effects. One obvious one is that greater demand stimulated agricultural production nationally, regionally and locally.¹⁷

These vast demographic changes occurred at a time when New York’s economy also expanded rapidly, a fact attributed to both the end of the war, the city’s excellent port, and the opening of the Erie Canal. By the Panic of 1837, New York had become an international mercantile capital, a fact that had immediate ramifications for regional agriculture. Most important is that land became valuable “real estate.” Increasing personal fortunes, combined with strong demand for space to house surging populations caused undeveloped land prices to rise. These undeveloped property values were highest on the edge of town, where vacant land awaited conversion to building lots. Speculation pushed prices higher and higher as investors sought to profit from capital gains. Down on the farm, high property values made families consider carefully the merits of keeping the homestead farm intact.¹⁸

The speculative nature of real estate investment meant that not all non-farming owners could develop their new holdings immediately. So they turned to leasing undeveloped lots to offset interest, taxes and incidental costs. They rented to immigrants already experienced in peri-urban agriculture. Many of the European migrants arriving in the nineteenth century possessed the skills to work commercial gardens on leased land. Urban agriculture had a long history in Europe, and upon immigrating to America these families sought out familiar occupations, at least temporarily. Often poverty stricken, they were willing to lease land on the edges of large cities. Renting to immigrant market gardeners offered an attractive, low-
risk option for land owners. Gardening required no special cash outlay on the part of the property owner, and leases were short to accommodate changing economic conditions. As long as tenants paid their rent, few easier ways existed to make money. Tenants rented because they had done so in Europe and hoped after a few successful seasons to be able to move on, perhaps to new opportunities in the American West. Leasing offered them a foothold in the American dream.

As proponents of Thünen’s intensity theory point out, urban agriculture and to a lesser extent near-urban farming depended on heavy use of fertilizers. Since city populations depended on horses for transportation, these animals produced an abundant supply of manure to maintain intensive agriculture. Even in the colonial period, local farmers and gardeners recognized the value of these fertilizing agents and purchased “street dirt” from the City of New York. By 1830 increasing numbers of filth-laden streets plus a burgeoning horse population forced city officials to devise a better scheme for manure removal. In that year the New York Common Council ended auctions, standardized manure measures (1 load = 14 heaped bushels), set prices ($0.25 to $0.38 per load) and required manure inspectors to keep records of their sales. New York’s manure trade became big business. This is also important from an intellectual standpoint. In America contemporary farm critics argued that standard farming practices failed to use fertilizer and therefore contributed to a steady decline in soil fertility. This makes the efforts of gardeners and farmers who faithfully replenished their soil stand out for their husbandry.19

Changing environmental conditions also influenced agriculture in the New York City region. For most mixed farming operators, wheat had always been the most important cash crop. But in the 1780s insect depredations destroyed the crop from Monmouth to Montauk.
Many farmers switched to rye, and others made greater efforts to fertilize their soil. Eventually the insect disappeared, and through the early nineteenth century wheat cultivation began to increase. But disaster struck again, this time in the 1830s, and unlike the past, resulted in permanent damage.

Declining yields, soil depletion and renewed insect depredations were compounded by competition from farmers in the Genesee Valley, and from low-cost canal flour imported from the prairie states. Eastern farmers could not produce wheat at a lower cost than these new competitors, and while many farmers in the New York City region continued to grow a little wheat for home use, a search began for new forms of production to place eastern farmers in a more competitive situation with respect to the west. Some turned to silk worms, and others to fancy, high-priced potatoes and plants. A more conservative path involved replacing wheat with grass, oats, rye and pasture, and by herding sheep or milking cows. By 1845 a dairy industry had taken root in northern New Jersey and the lower Hudson Valley that supplied New York City consumers with fresh milk. Farm families located immediately outside urban areas, or along navigable water routes turned to raising fruits and vegetables, which they retailed in the public markets. Although a few well-to-do families converted from the former mixed system to commercial milk or vegetable production, most approached cautiously, devoting only a portion of their entire effort to provisioning city residents with perishables.

Careful examination of personal and farm financial records reveals that agriculturists in the New York City region tended to be more careful managers than curmudgeonly misers when it came to adopting new tools, implements or methods. True, they accepted new ideas with caution, but for good reason, because impulsive decision making led to ruin, more so in
the Northeast than elsewhere. Considering the high price of land, necessity of limited debt in an era of high interest rates, regular, severe economic downturns, and that agriculture generated relatively low incomes, prudence dictated fiscally responsible management of family enterprises. Furthermore, the nineteenth century was a dangerous time when frauds, red herrings and other pitfalls, dressed up as amazing discoveries or money making schemes enticed farmers and gardeners to part with hard-earned specie. Many of these, like Merino sheep, Chinese silkworms, Cahoons Seedling Rhubarb and Shanghai chickens were foisted upon innocent families by the agricultural elite.22

Out of sheer necessity many families quietly adopted a simple unwritten rule: that all things new required proof before acceptance. With regard to science and technology on the farm and in the garden this meant proof that new tools or methods worked better than ones currently favored, and that they reduced labor expenditures or increased yields. Simplicity in terms of operation and performance, and low initial cost rounded out these considerations. As a result, the rate at which the average farmer or gardener adopted managerial change slowed to a level less than what self-appointed improvers, sellers of patent fertilizers, or implement manufacturers deemed acceptable. Historians relying mainly on the writings of these men not surprisingly come to similar conclusions and overemphasize resistance to change. Underlying these attitudes is a bias that presumes the adoption of machines as necessary and good for agriculture to “improve,” even if they were more appropriate for farms in the trans-Appalachian west. The mechanical reaper is the most well know such example, as its story appears throughout the literature as a turning point in rural history, when we should really say a turning point in Midwestern history.23
Persons who write about the collision between rural and urban worlds tend to present the event in similar combative terms. Arguments over land use, environmental and public health issues, politics and even values dominate the literature. For example, both Henry C. Binford and Marc Linder focus on struggles over forced annexation of rural areas by neighboring cities. And in an enlightening article, historian Jaqueline Swansinger writes about the decade-long struggle over taxation between the agrarian "Taxpayer's Party" and the "Businessmen's Improvement Party" of Fredonia, New York. In this true turn of the century tale, farmers feared that they would be made responsible to pay for the village assuming greater debt to expand its municipal electric plant. Village business leaders supported the move. A central point to Swansinger's study is that the farmers were concerned about cost because of the precarious situation of agriculture in the 1890s. Yet similar battles raged in the New York City region, where agriculture was in a healthier position. What these struggles reveal is that fundamental differences existed between farming and non-farming populations. While not attributing a cause to these differences, perceptions of time are a fundamental example of these differences.

Studies of agriculture and rural life are generally organized in a topical fashion. But since farmers and gardeners lived by the rhythm of the seasons, it is more natural to present their lives in the context of seasonal change. The beginning and end of the day was determined not by a clock, but by the rising and setting of the sun. Daily work activities were linked directly to particular seasons. For example, plowing and planting took place in the spring, while harvesting took place in summer and autumn. Farmers cut wood in the winter. While non-farming residents of towns and cities lived by artificial hours, minutes and seconds, agrarian men and women lived by something less tangible, but far more real.
Chapters one and two consider the nature of urban expansion in the New York City region, including the effect of urban expansion on property values and land ownership. Chapters three and four focus on urban influences on sales and the development of wholesale marketing. Chapters five through eight take a seasonal approach to work and life on the farm and in the garden. Chapter nine provides a short summary from the vantage point of the 1870s.
Notes

1 Figure 1.1 and all other maps show seventeen counties for the sake of simplicity. Until 22 February 1840 the region consisted of sixteen counties. On that date Hudson County, New Jersey was created out of two southern Bergen County townships and the city of Jersey City. The region included seventeen counties until 19 March 1857 when Elizabeth City, New Jersey and six townships separated from southern Essex County to form Union County, New Jersey. A nineteenth county was created on 1 January 1899 when four towns separated from eastern Queens County, New York to form Nassau County. John P. Snyder, The Story of New Jersey's Civil boundaries, 1606-1968 (Trenton: Bureau of Geology and Topography, 1969), 145, 237; Edward J. Smits, Nassau Suburbia U.S.A.: The First Seventy-five Years of Nassau County, New York 1899-1974 (Syosset, New York: Friends of the Nassau County Museum, 1974), 42-43. Population statistics for 1990 are available on the US Census Bureau home page at http://factfinder.census.gov/. Jean Gottmann, Megalopolis: The Urbanized Northeastern Seaboard of the United States (New York: Twentieth Century Fund, 1961), 4-9, 17-22.


8 Ellis, Landlords and Farmers, 186, 198, 211 note 129, 186; Schmidt, Agriculture in New Jersey, 121, 168-69; Danhof, Change in Agriculture, 133-36, 192; Bidwell and Falconer, History of Agriculture, 326


*Horticulturist* (September 1858): 414; Danhof, *Change in Agriculture*, 52, 133-36, 213, 217, 220; Gates, *Farmer's Age*, 291-2, 303-311; Schmidt, *Agriculture in New Jersey*, 106-14, 135; On the issue of careful management versus excessive conservatism, Northeastern farmers had no state or federal support to assist them in the event of financial crisis, natural disaster or as the result of poor decision making. From the earliest years of settlement farmers in the trans-Appalachian west depended on the federal government for survival. The
agrarian revolt included many western and southern farmers who urged more federal support for agriculture in their regions. With state and federal safety nets in place, farmers could afford to take more risks. Rossiter, *Emergence of Agricultural Science*, 150, 152-53.


CHAPTER 2. LAND, TENANCY, IMMIGRATION

The increasing urbanization of rural America is an important theme in US history. In the New York City region, the dramatic growth of cities and towns exhibited a profound effect on agriculture. Population growth fueled by a rising tide of immigration and an expanding economy influenced technology, production, land policy, and the role of the government. On a local level, wealth and population growth caused cities and towns to consume open space in an unprecedented fashion. New streets, larger parks, rural cemeteries and construction of residential and commercial buildings consumed thousands of acres of land along the edges of built up areas. Hordes of speculators scoured the landscape seeking potential investment properties and real estate development possibilities. Land prices rose dramatically, first within, and then outside cities, while the value of equally fertile, but more remote farm land remained relatively stable.¹

Predictably, near-urban farm families responded in different ways to the sudden doubling or tripling of the value of their land. Some families immediately cashed in on their good fortune. Others experimented with more intensive methods of production aimed at serving growing urban markets. Many families, seemingly oblivious to the changes going on all around, continued to work their land until the retirement or death of the farm proprietor. Retirement often signaled the end of commercial production, and with time on their hands some farmers turned to building houses on their properties. Others, less eager to assume the role of builder but cognizant that their heirs would possess no such hesitations, attempted to guide dispersal of the homestead farm through their wills. Such decisions contrast sharply with the experiences of farm families living far from sizable population centers. In these
more isolated environments, where competing demands for use of the land did not yet exist, men passed their farms on to sons or other male relatives who already, or someday planned to assume control of the business.

Near cities speculators snapped up vacant land not purchased by farmers or obtained by municipalities through the condemnation process. The future of a given piece of property depended largely upon location and local real estate trends. Speculators for example divided purchases into smaller parcels for individual sale. These plots of land might change hands several times but eventually a portion would be purchased by someone who would hold it for a period of years in anticipation of future appreciation in value. Seeking to protect their investment from the dual ravages of taxation and trespass, investors leased the small plots of land to tenant gardeners. Unlike rural tenants, these renters were young immigrants familiar with urban tenant agriculture. Characteristic of the new environment, even these relationships proved temporary, and short term flexible cash leases predominated tenant agreements. This is because landowners sought development, not the creation of a permanent renter class as had their predecessors in upstate New York and northern New Jersey. For their part, tenant families viewed renting as a means to an end, remaining in the vicinity for a few years and then moving on, probably west, with the intent of buying land. As with other aspects of agriculture and farm life, urban landlord-tenant relations contrasted starkly with those in the countryside. Here tenancy levels and institutional characteristics reflected patterns found in the middle west.

Other than noting that cities and suburbs are built atop former farms, historians have devoted little energy to the agrarian response to urban encroachment. Classical agricultural
location theorists relied on a concept called "economic rent" to explain the emergence of special farming conditions along the fringes of cities in the nineteenth and twentieth centuries. Yet when faced with the decision to buy more land, or to sell what they had, most farmers probably did not consider the many elements that make up "rent," land costs, mortgages, depreciation, and the value of improvements. More familiar and easier to understand were "land values," a number upon which tax assessment bills were based and the sale prices of neighboring farms were calculated. For this reason land values are also useful for explaining social and economic change in nineteenth century America.²

In the rural Northeast, land prices remained within an affordable range for farmers throughout the nineteenth century. From the 1820s through to the Civil War, country land prices in the region surrounding New York City encompassed a rather narrow range. At the low end of the spectrum, uncleared land sold for as little as ten dollars per acre. On the upper end good, favorably located real estate cost $100 per acre. Between these extremes the majority of agricultural land values ranged from thirty to sixty dollars per acre.³

Demand for building lots, factory sites and transportation infrastructure caused a disparity between the countryside where land prices reflected an agricultural value and the fringes of densely populated areas where it assumed a much higher development value. Higher prices encouraged a gradual concentration of land into the hands of relatively few investors, a process that became evident in parts of the New York City region even before 1800. Nevertheless, the wavering strength of the colonial economy and immigration, both of which created capital for investment and demand for housing, caused land values to fluctuate in such a way that real estate was not always a sound investment. After the Revolutionary
War, land surrounding the built-up portion of New York City advanced in value more rapidly (especially from the mid-1780s through the late 1790s) than less favorably located property. Through the end of the second decade of the nineteenth century, political and economic uncertainty, on-and-off recessions, embargo and military conflict caused land values to fluctuate wildly. Except for periods of inflation, the disparity between urban-fringe and rural land values remained small. Yet by the middle 1820s this relationship changed forever. Vacant land throughout Manhattan Island and surrounding other population centers began to permanently outpace country land values. Municipal governments, land developers and speculative buyers competed with agriculturists like never before for open space, to the point where farmers could no longer pay development prices that only returned farming incomes. Conversely, farm families who owned large tracts of land near growing population centers benefited from tremendous capital gains as their lands appreciated in value.  

Population growth and economic expansion directly influenced land prices by creating demand for housing and capital for investment. But other factors such as "internal improvements." municipal legislative action and private investment also widened the disparity between urban-fringe and country land values. "Internal improvements" - turnpike, canal, bridge and railroad construction - received widespread support from land speculators as well as northern and western farmers, in part because agriculturists recognized that such improvements served to enhance land values. Similar attitudes prevailed in the New York City region. For example, Manhattan land values took an "enormous jump" upon the opening of the Erie Canal in 1825. Some years later with the introduction of another form of improved transportation, Queens County farmer Obadiah Willits observed that mere
speculation about a proposed railroad route raised local land values by ten dollars per acre. Such improvements also provided a foundation for later population growth along and the ends of new transportation lines.\(^5\)

Like state and national governments, cities and towns also sponsored improvement projects that ultimately served to boost local land values. For example, the opening of roads and streets through the condemnation process permanently altered rural landscapes. The imposition of a grid pattern on Manhattan Island in 1811 prompted real estate investment in vacant land all across the island. Investors recognized that decades in the future, as each of the 155 east-west thoroughfares above Houston Street were opened they would be followed by the construction of sewers, water mains and homes. Sewer and sidewalk construction, street grading and paving, and the extension of water service increased property values from two to eight times their agricultural value. The expansion of night watch, street lamp and fire protection districts into rural areas also served to increase their value, as well as the tax burden on the owners of “vacant” lots. Highway construction preceded all of these changes. Looking back three decades, the Reverend Jonathan Greenleaf recalled the rural origins of Brooklyn's Seventh Ward, a district known for two centuries as the Wallabout. For Greenleaf, extension of Myrtle Avenue from the growing city of Brooklyn sparked growth that contributed to the district's growth, later annexation and ultimate loss of individuality.\(^6\)

New and planned construction projects had far-reaching effects for landowners because localized development tended to influence property values over such a wide area. Impending construction projects whether for parks, reservoirs, or cemeteries sparked intense debate among landowners who hoped to either prevent condemnation or collect large capital gains.
The City of Brooklyn, for example, paid Jacob Bergen $10,000 for his farm in the spring of 1835 in order to reserve land for a public park. Proposal for a Central Park in Manhattan the 1850s prompted years of behind-the-scenes maneuvering by upper Manhattan landowners eager for the city to locate it near land they had purchased earlier as investment property.\(^7\)

Private initiatives, such as the establishment of omnibus lines also raised land values on the peripheries of cities because they permitted workers to live farther from the city center. Not all landowners viewed such changes as positive. Resistance in Kings County, New York was especially strong. Looking back with remorse the historian Peter Ross believed that streetcars played a critical role in the destruction of the rural environment of central Kings County because, “with the introduction of the trolley the old seclusion of Flatlands began to vanish, and since, it has itself disappeared and become simply a city ward and it has been wholly cut up into streets and avenues.” Flatbush farmers protested with similar vehemence to the construction of the Brooklyn City railroad in 1860. Reverend Henry Stiles summarized the viewpoint of this disenchanted agrarian majority:

> The surveyor’s chain ran ruthlessly through their cabbage gardens, with a reckless indifference to time-honored farm lines; and they found that the ancient homesteads, which had sheltered their infancy, and their maturer years, were standing directly in the route of newly plotted streets and avenues, with which the crafty speculator had surrounded them, as with a spider’s web.\(^8\)

Besides being moved off their land, improvements raised local values to a level beyond the reach of the typical farming family. Conversely, historian Clarence Danhof noted that the capital gain in the value of farm land made up an important part of agricultural income nationally, enough in fact, to encourage farmers to buy more land than they could use. In this way most farmers acted to some degree as speculators. Yet near cities where land values far
exceeded their agricultural value, few farmers could afford active participation in real estate speculation. Therefore urban fringe real estate attracted three types of non-farming speculators: long-term investors, real estate developers and short-term investors. Given the risks of real estate speculation, only a small number of investors ever profited, but those who did, did so handsomely. Their success drew fire from critics who believed that the level and manner of acquisition of such wealth without labor, in the midst of the poverty of the urban working poor, cried of injustice. Of speculation in urban fringe farm land, Henry George, champion of the capital gains tax remarked in distress:

You may sit down and smoke your pipe; you may lie around like the lazzaroni of Naples or the leperos of Mexico; you may go up in a balloon, or down a hole in the ground; and without doing one stroke of work, without adding one iota to the wealth of the community, in ten years you will be rich!^9

Merchants and business owners made up the bulk of long term investors. Searching for a safe investment and cognizant that building lots sold for ten times their agricultural value, wealthy families amassed extensive country estates within twenty miles of New York City. In order to receive a favorable rate of return, these long-term investors held on to their properties for years. Figure 2.1 shows one such estate, which served as home to New York's Mayor for two years. The Last Will and Testament of New York businessman Robert Lenox exemplifies such goals. In 1829 he left to his son James a suburban Manhattan estate of thirty acres which included horses, cattle and farming implements, the elder Lenox warned his son to resist selling the land until it was ready to be subdivided into building lots (for a village) which, given its remote location at "the Five-mile stone" could take years. James retained the land until his death in 1864, which by then had become the largest parcel of land in the city held by a single person and worth six million dollars.10
The potential returns from long term real estate investments even enticed the president of Union College, a small men’s institution 150 miles north of New York City, to sink a portion of the college’s endowment in farm land outside the metropolis. In 1831 college president Eliphalet Nott along with his partner, steamboat captain Neziah Bliss, purchased thirty-five acres of the Messerole farm in rural Bushwick, Kings County (Figure 2.2). Paying the hefty sum of $428 per acre, the purchase represented the first step in creating a 250-acre suburban development called Greenpoint. The two entrepreneurs also excavated sand from the Messerole farm to fill in wetlands they subsequently purchased on Manhattan’s lower east side in hope that this would one day become valuable real estate. Nott also went on to invest college funds in property along the East River in what later became Long Island City. Gradual sale of these lands subsidized the operating costs of the college for thirty years.11
Real estate developers made their purchases based on projections of future urban growth. For example, Bliss and Nott purchased land at a place called Hunters Point based on a tip that the federal government planned to expand the Brooklyn Navy Yard along a nearby inlet called Newtown Creek. Unfortunately for the two investors the expansion project never occurred. Others had more luck. Samuel B. Ruggles, a real estate developer who conceived and built New York's famous Gramercy Park neighborhood (Figure 2.3), observed that from 1820 to 1830, most of the city's growth took place between Grand and Sixth Streets. Since then, new development inched slowly up the east side from Sixth to Twenty-fourth street, and it is here where he directed his attention. In the spring of 1834 Ruggles and an associate purchased five lots of vacant land on the east side of Third Avenue between East Twenty-first and Twenty-second streets for $8,095, and later three additional lots in the vicinity for nearly
$7,000. As with parks, the development of exclusive neighborhoods around squares also helped raise the value of surrounding vacant lots. The construction of a set of thirteen row houses on leased property land north of Washington Square, New York City in 1831 sparked the value of nearby vacant lots to rise and lead to the development of a fashionable neighborhood. The succession of residential neighborhoods by commercial development also reflected increasing land values and caused the price of vacant land on the perimeter of the built-up area to rise in value.¹²

Figure 2.3 Gramercy Park Neighborhood.

A third type of speculator, the short-term investor, made high risk short-term purchases which promised high returns. This type of speculative involvement in the real estate market followed the business cycle and at certain times served to boost land values to impossible heights. The years 1794-95, 1816-19, 1834-37, 1854-57 and 1868-74 stand out as periods characterized by particular speculative fervor and exceedingly high real estate prices. These events are important because they facilitated the transfer of land from farmer to investor in two ways. First, high prices encouraged farmers to sell large quantities of land over a brief period of time. Second, when each of these speculative events came to an abrupt halt (1796-98, 1819-23, 1837-42, 1857-62, and 1874-78) land values crashed and overextended investors lost thousands of acres to their creditors prompting a second mass transfer of land. The boom of the middle 1830s provides an example of how farm families and investors responded to this sudden potential to earn tremendous sums of money though the sale of land. Figure 2.4 traces the changes in New York County real estate valuations that included developed, vacant, and tilled land for roughly fifteen years on either side of the Panic of 1837.13

Commencing in New York in the year 1834 and soon afterwards across the nation, urban fringe land prices started up rapidly and continued far beyond their development value. Newspaper editors added to the frenzy by swapping stories about fantastic profits earned overnight through the sale of farmland beyond the city limits. In October 1834, the New York Farmer reprinted a story from the Journal of Commerce that the Stewart sisters’ 100-acre farm sold for $47,000 by unnamed investors who promised “a city will be built on the site.” Various reports of the disposal of André Parmentier’s nursery also appeared in several
newspapers at this time. In 1825 the French émigré and his wife established a 23-acre nursery at the junction of two main highways leading from the village of Brooklyn. When Parmentier died in the Autumn of 1830 his widow pledged to continue the business. Unfortunately, within the year she sought a buyer for the nursery, and likely enticed by the development value of her property, Parmentier sold the nursery to the Long Island Railroad for $57,000. Within a month the railroad surveyed and subdivided the grounds into building lots and held a public auction, realizing a 15 percent profit on the sale of the properties.\(^{14}\)

![Figure 2.4 Twenty-five Years of Real Estate Values in Manhattan](image)


During periods of speculative fervor investors exerted pressure on farmers to dispose of their land. Chronicling her extended visit to New York, Maria Child repeated an often-told story that “speculators” offered a Kings County man who had inherited his father’s farm $70,000 for the place. Unfortunately, when presented the heir with $10,000 in good faith on their offer, the hugeness of the sum drove him mad. In 1835 “speculators” offered Manhattan
nurseryman Michael Floy ten times what he had originally paid for land in Harlem. The following year Floy's son excitedly penned in his diary: "A gentleman today offered father a fine farm at Jamaica for $10,000, and at the same time offered only $140,000 for our Nursery! The temptation is almost too great." Thus, high prices encouraged considerable areas of farmland to transfer from farmer to speculator.¹⁵

Some speculators entered the mortgage market and used foreclosure to amass valuable real estate. For example, Alexander Hamilton's suburban Manhattan estate, the "Grange" (figure 2.5) passed out of the hands of its owners during the depression of 1875-78. Located near an area where new home construction had begun in the early 1870s, the property was quickly resold and subdivided into building lots that sold for $5,000 each. John Jacob Astor also used foreclosure to accumulate large tracts of prime real estate.

According to real estate historian Arthur Pound:

The Cosine farm, extend[ed] from Broadway west to the Hudson between Fifty-third and Fifty-seventh streets. Inherited by John Cosine in 1809, in the following eight years it went through a 'miserable tangle of judgments, mortgages, foreclosure sales and trusteeships' as a result of which Astor, who is described as 'worming his way into the property,' emerged with the title at a cost of only $23,000. Worth $6,000,000 in 1905... and $18,000,000 in 1920.

In skilled hands, legal devices hastened the conversion of land from field to subdivision.¹⁶

Farmers also transferred their lands to speculators through inheritance, and high land values warped the manner in which this process usually worked. In rural areas, despite division among heirs, farms often remained intact and within the extended family of the deceased. In such cases a single heir might buy out the others and continue to farm the reconstituted estate. Other times siblings operated their inheritance in partnership. For example, Richard and John Cooper inherited part of the thirty-two acre farm they operated
together in Bushwick, New York (Figure 2.6). Sometimes heirs collectively leased their land to other farmers. After Orange County farmer James Hawxhurst sold his homestead farm, he leased another farm from the heirs of Samuel Belden. The lack of other uses for land in rural areas also encouraged continued cultivation even when the deceased’s will directed his or executors to dispose of the property. Finally, resistance to selling land to persons viewed as “outsiders” helped perpetuate local landholding patterns. On a visit through rural Rockland County in the summer of 1842, Maria Child concluded that despite the recent introduction of rail service, the countryside remained socially “stagnant.” Not only did the same farm families live in the same houses generation after generation, they carefully avoided selling land outside the family, to the degree that “it is now literally impossible for a stranger to buy them [land] at any price.”17
In the countryside, many farmers transferred titles, or made such intentions clear to sons and other male relatives before they died. For example, Somerset County New Jersey farmer Alexander Duryea had taken over operations of his grandfather Henry’s farm by 1860, yet the elder relative still held title to the land. It is likely they did this more for practical reasons than out of a sense of proper estate planning. Still, in so doing the patriarch directed the disposal of his property and eliminated a situation in which the heirs would disagree over their inheritances. For example, New Jersey farmer Israel Crane divided his real property among his five children before his death and his Last Will and Testament merely confirmed these earlier transactions. Crane’s son Matthias received a farm in West Bloomfield where he lived at the time of his father’s death, plus the twelve acre “Sinus Baldwin place,” and
another twenty-five acre parcel of land. Crane’s son James received the “homestead place formerly occupied by me” and eighty acres of land in the farm where he lived at the time of his father’s death. Crane’s three daughters received full title to the houses in which they lived by a clause ordering the cancellations of their mortgages.18

The death of farmers living near cities also signaled a change in ownership and the possible break up of the estate. Yet unlike the countryside where the land often remained in the hands of family member and under cultivation, near cities it frequently passed out of the family’s hands and tillage ceased. One reason for this has to do with a lack of interest in farming by male heirs who found other employment opportunities more appealing. Sons found jobs outside the agricultural sector and as often happens today farming parents turned the land over to children who failed to possess a similar interest or attachment to the land. For example, Manhattan nurseryman and author Michael Floy intended to leave the family business to his son Michael, with whom he operated the family business. Yet twenty-eight year-old Michael died unexpectedly in the spring of 1837, and his father continued on alone until his death in 1854. Floy’s oldest son James, a successful clergyman, had no interest in horticulture. Apparently, neither did his daughters or their husbands. Suspecting that upon his death the nursery would be sold, the elder Floy empowered his executors to sell the entire stock of plants, shrubs and trees.19

The language of the senior Floy’s will also suggests that potentially serious obstacles awaited the heirs of valuable properties; whether to sell, rent or develop, or to keep the land intact. In Floy’s case the nurseryman purchased a ten acre parcel of land between Fourth and Fifth Avenues from 125th to 127th Streets for $8,500 in 1827. A quarter-century later it had
quadrupled in value. Apparently anticipating some disagreement over the dispersal of the estate after the death of his wife (who inherited use rights) Floy requested that the executors “come into agreement” with his family over whether to sell the property “or to improve it.”

In 1854 the Harlem properties included four houses and lots, the nursery, plus the “house I now occupy in Harlem and also the lot 25 feet by one-half block in depth, on which the house stands.”

The Floy heirs appear to have managed through the pitfalls of probate, but other families were less fortunate. The death of Eliza Jumel in July 1865 ignited a frenzy of litigation surrounding the disposition of her mansion and thirty-six acre upper Manhattan estate. Repeated challenges to her will cost heirs literally thousands of dollars and only uncovered sordid details about the family’s past. Claims remained unsettled until 1881, but within seven years of that date the entire estate had been sold, surveyed and subdivided into building lots.

Even when heirs accepted the validity of a will, disagreement over division of the estate sometimes caused relatives to sue one another in a legal process called partition. Rare in the countryside, it occurred with disturbing regularity in New York County, most likely because high land values made the stakes equally large. Of fifteen tracts of land located between Thirty-ninth and Seventy-fifth Streets, and (roughly) Third Avenue to the East River, four (26 percent) underwent partition by the Mayor’s Court. As in the case with the Jumel estate, after partition, owners quickly disposed of their lots and in this way entire farms passed out of existence.
Attempts by heirs to reconstitute farms divided by probate faced obstacles other than the personalities of the various persons involved. The problem of whether to assess the land by its agricultural or development value foiled reconstitution attempts because any agreement would require buying out the other heirs. Relying on farm income to satisfy these obligations could take years, and if the advocates of reconstitution were young and had not accumulated much wealth, this became even more difficult. Price also posed a problem because it is unlikely heirs would accept anything less than the development value of the land.

An example of the problems and pitfalls faced by an individual who attempted to keep his father’s estate together may be found in the story of New York City resident Grove Bend Waldron. Waldron attempted to reconstitute 100 acres located between Ninety-second and Ninety-fourth Streets on Manhattan’s east side left to him and his three siblings by their father in 1806. The impetus for Waldron to buy out the others was his brother’s loss of seventy acres to satisfy a judgment. So in the spring of 1818 in a strong economy with high real estate prices, he mortgaged his undivided quarter share in the property to the Mechanic’s Bank and bought back his brother’s land. At the same time he purchased forty-three acres of his sister’s share with the agreement that she and her husband would hold the mortgage. By December he had accumulated a major interest, albeit mortgaged, in his father’s estate. Then a dispute arose among three of the Waldron children over the division of a parcel within the inheritance. Brothers Grove and Peter took their sister Sarah to court, a move that resulted in the legal partition of the estate into more than 500 lots. This decision and the downturn of the economy the following year dashed Waldron’s attempts at reconstitution. Within months after the court settlement, Thomas Dunning filed suit against Peter Waldron for $1,200 and in
early 1820 forced a public sale of his share of the inheritance. Isaac Adriance, a lawyer whose name appears in other New York City land records as a speculator in Manhattan real estate snapped up the property. Grove Bend Waldron held on until 1823, but in that year he defaulted on three mortgages and within a matter of weeks the remainder of what had been his father's estate passed out of the family.\textsuperscript{23}

Selling off a small portion of the inheritance provided one way for an heir to satisfy the financial obligations incurred by probate. It is likely that the heirs understood that to lose a small portion of the land was better preferable to losing all. This is probably why in 1842 the heirs of William Prince sold off a piece of the nursery that had been in the family for ninety years. Blocking the westward expansion of village of Flushing, no doubt the facility had become valuable development property and desirable by village boosters who believe that the nursery stood in the way of Flushing's progress. Prince's heirs sold some of the land to a horticulturist, and some for building lots. A smaller version of the nursery then continued in operation for another generation.\textsuperscript{24}

Retirement also spurred some families to profit from inflated land values by taking charge of the development of their land. The men and women who undertook these efforts shared several common characteristics. First, they belonged to large extended farming families that lived in the same area for decades. Second, they began the subdivision process when they neared retirement age. Third, they retained their agrarian identities even after cessation of farming, although oddly, their children did not. Figure 2.7 shows a farmhouse in upper Manhattan. With graded streets, new sidewalks and gas lights, non-agricultural development is pending in the area.\textsuperscript{25}
The member of a well-established family, Henry Boerum inherited his father’s farm in Bushwick around 1820 and as a young man raised vegetables for the New York market. Critical to the land development role he would play in later life he married Sarah Rapelje, “of the well-known family of that name, which has been prominently identified with Long Island from almost the date of its first settlement.” Armed with Sarah’s dowry of $2,700, in 1828 Boerum made a down payment on sixty-two acres of his recently deceased father-in-law’s estate. Due to “the executors having given him the privilege of paying on account of the principal when he paid his yearly interest” they paid off their $4,300 mortgage in six years, avoiding the depression of 1837-43 which forced so many into bankruptcy. Given Sarah’s kinship ties, the couple received more favorable terms on their mortgage than probably would a non-relative. Ownership of the Rapelje estate opened new opportunities by permitting the
couple to sell their Bushwick farm during the subsequent period of inflationary land values. At the same time the sale of just three acres of land from their new farm at $1,000 per acre financed construction of a new farmhouse. Soon afterwards the economy faltered, but surely the young couple understood that one day their ownership of fifty-eight acres on the edge of the city of Brooklyn would place them in a favorable financial position. In the meantime, they raised five children and continued to farm. By 1850 the farm was worth $50,000. Three years later, when Henry was sixty and Sarah fifty-one, opportunity presented itself by way of the construction of DeKalb Avenue, a new road to Brooklyn (Figure 2.8). Henry A. Stiles, a nineteenth-century historian of Kings County completes the story of the Boerum farm:

In 1853, DeKalb Avenue was opened, graded and paved through the [Rapelje] farm, and Mr. Boerum began selling and making loans on the property to purchasers, enabling them to erect dwellings thereon. His policy toward purchasers . . . resulted in the rapid development of that part of the city [and] within the borders of the farm now [1884] stand some 500 or 600 houses.36

Like Henry and Sarah Boerum, families such as the Parkhursts, the Coes and the Lums, who all at one time or another farmed in Newark's South Ward all became land developers. At age eighty-three retired farmer Henry L. Parkhurst directed the construction of houses on his land. Although he still lived in the family homestead at 609 Broad Street, prior to 1844 he built a small house nearby at 603 Broad Street. Around 1850 "Parkhurst Street" opened through his farm and the elderly farmer built a house near where the new thoroughfare intersected with Broad Street. His son Henry N. Parkhurst, a thirty-six year old farmer lived two blocks away at 13 Thomas Street. Like his father, he also built houses on his farm, adding one at 17 Thomas Street and another at 37 Thomas Street in the late 1840s. Sayers Coe (1772-1852) member of another large extended South Ward farming family lived on the
homestead farm at 63 Court Street. Coe built two single family and one multi-family homes just down the street from his home. These findings are significant because society does not usually think of farmers as taking such a direct role in the conversion (destruction) of their land from fields to housing. The experiences of the farmers in Newark’s South Ward, and anecdotal evidence from Kings County suggests that they possessed none of the hesitation that might today be attributed to persons who work closely with the land.  

Figure 2.8 DeKalb Avenue at the Junction of Fulton Street, 1855
Here at the edge of the built up portion of the City of Brooklyn, workers opened avenues far into the countryside, increasing in local land values.

In Manhattan, expensive row houses sprang up on vacant lots beyond the densely populated portions of the city. Figure 2.9 is an example of what this process probably looked like on the ground. Three vacant lots remain, and building materials suggest new construction across the street. In smaller cities like Newark where less affluent populations lived, farmer-initiated new home construction aimed at the needs of working class families.

![Figure 2.9 "The Keyser Estate" 4th Avenue at 40th Street Manhattan, 1865.](image)


Small, inexpensive homes predominated new construction. At values ranging from three to five or six hundred dollars for house and lot, it seems they were built with affordability rather than elegance in mind. Some farmers even erected buildings that served as tenements. Number 77 Court Street, built by Sayers Coe for his son in the mid-1840s housed four working class families in 1850 and appears to have been a typical tenement conversion.
Amos Lum Jr., a wealthy butcher and member of a large extended farming family owned what seems to have been a classic “back-yard tenement.” Listed in the tax rolls as 380 Broad Street Rear, the city directory referred to the building as “Lum’s Court.” At least thirteen men and their families called this building home.28

Unlike professional land developers, farmers built slowly, probably because they did not possess the capital to build more than one house at a time. Gradual development also allowed families to continue farming the land. This generally meant concentrating on a narrow range of low-intensity commercial crops like hay and potatoes or crops for home use. A certain portion of such land surely served as pasture. Some farmers even continued grain production up until the time they ceased farming because on a small scale it required minimal new investment. Sixty-two year old Anselm Fromaget reported one of the larger farming operations in Newark’s South Ward in 1850. On twenty-five acres he raised three cows and cut ten tons of hay, plus grew small amounts of corn, wheat and oats. In Brooklyn, three years before he began the process of subdividing his farm into building lots, Henry Boerum cut twenty tons of hay and raised 500 bushels of potatoes on eighteen acres. Low intensity production of grain and grass is indicative of what economists call impermanence syndrome, a phenomenon in which investment in the farming operation is reduced to a state of near idleness because the family plans on exiting the business in the near future. Land held by non-farming speculators would have a similar appearance. If we could somehow visualize the barns and farm outbuildings in Newark’s South Ward around 1850, it is likely that many would be empty and others appearing run down or not cared for very well. The image
conjured up in Chapter 1 of a lone silo and dilapidated barn on the fringe of the suburbs is appropriate.29

It is understandable that a retiree might shift to a more simple mode of production, sell off a little land or even build a house or two for the regular income such ventures produced. But why did the children of these retirees, with years ahead of them, follow similar paths? Certainly anticipated income from building rental and the sale of lots provided a powerful motivator, but is this is not an issue of money only. By reducing farming responsibilities to part-time status and receiving income from the sale of land and building leases, these men now had money and time to pursue other interests. Eventually these new activities completely replaced commercial agriculture as a means of subsistence.30

Public service provided one path out of agriculture. As young men Kings County farmer-developers Henry Boerum, Jeremiah Johnson and Teunis Bergen all served in public office. Johnson, a wealthy Kings County farmer was elected town supervisor off and on from 1800 to around 1840 and served two terms in the 1830s as Mayor of the City of Brooklyn. A war hero. Johnson was also elected to the New York State legislature in 1808-1809 and again from 1840-1842. Boerum and Bergen served as Aldermen of their respective Brooklyn wards.31

They held other occupations as well. Newark farmer Moses Coe, (son of Sayres Coe) served as Assessor and County Judge. In addition to a working farm of eighteen acres, at age forty-seven he owned eleven houses and two vacant lots in the South Ward. Some part-time farmers also operated businesses that could be managed along with farming. Forty-two year old David B. Doremus (1808-1861) milked cows, sold hay and made expensive shoes.
Edmund Cox (1826-c.1865), a twenty-four year old South Ward farmer in 1850 worked twenty-two acres owned by his Aunt and, for at least two years commanded the Schooner Joe.32

Unlike their predecessors, this younger generation gradually left commercial agriculture altogether as the city of Newark encroached upon the South Ward at mid-century. Amos Lum Sr., a self-described farmer exited commercial agriculture before his fifty-seventh birthday and worked as Superintendent of the Essex County Poorhouse. Edward Brogan, who, like Lum had stopped farming before 1850, ran a grocery store through the middle 1850s. Even though they inherited portions of their father’s farms in the 1850s, both Henry N. Parkhurst and Moses Coe moved out of agriculture before 1860. In addition to their public service interests, both men became presidents of insurance companies in the 1860s.

Upon the death of his father in the summer of 1857, William H. Earl Jr. inherited the remainder of his father’s eighty-acre farm which included,

All my lands on Elizabeth Town Road and not conveyed . . . heretofore consisting with that which I have conveyed to him as aforesaid of about thirty acres more or less. Also a lot of wood land in Clinton Township . . . . one lot of salt meadow lying near the mouth of and adjoining ‘Bound Creek’ consisting of about three acres . . . . Also all my horses, cows, wagons, harness, & farming utensils. Also all my interest in the [ice] business . . . . now carried on by my son William & myself.

Like his peers, Earl chose not to continue in farming. Yet he remained in Newark selling ice for many more years. It is not surprising then, that by 1860 only one farm remained in operation in Newark’s South Ward, although commercial horticulture by tenant gardeners persisted for many years.33
Commercial horticulture is one of the more interesting aspects of urban agriculture. High land values checked the expansion of agriculture near cities by farm owner-operators but they encouraged landowners to lease their property on a temporary basis to tenant gardeners. A direct relationship existed between land values and land tenure patterns in the New York City region. In the countryside, where farmers could more easily purchase land, relatively low land values correspond with equally low farm tenancy rates. Tenancy rates in the rural portions of the New York region correspond with rates calculated in various locations across the rural North. As shown in Table 2.1, owner-operators included 70 to 85 percent of the farmers in country districts within the Region in 1850. This compares to 81 percent in the Midwest and 85 percent across the rural Northeast in 1860. Using data from 1880 Marc Linder found that of 391 farm operators in rural Kings County, 53 percent were tenants. Of eighteen operators in the city of Brooklyn, 95 percent were tenants. Immediately outside built up areas, where investors purchased land for development purposes, from one-third to three-quarters of all farmers rented.34

Table 2.1 Farm Tenancy Rates, 1850

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<tr>
<th>Location</th>
<th>Owners (%)</th>
<th>Owns &amp; Rents (%)</th>
<th>True Tenant</th>
<th>Probable Tenant</th>
<th>All Tenants</th>
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<tr>
<td>New York W16</td>
<td>8 (0%)</td>
<td>0 (0%)</td>
<td>2 (2.5%)</td>
<td>69 (97.4%)</td>
<td>71 (89%)</td>
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<tr>
<td>Brooklyn W7</td>
<td>1 (4.3%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>22 (95.6%)</td>
<td>22 (95.6%)</td>
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<tr>
<td>Newark</td>
<td>8 (16%)</td>
<td>0 (0%)</td>
<td>2 (9.5%)</td>
<td>41 (80%)</td>
<td>43 (84.3%)</td>
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<td>WSouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newark W5</td>
<td>12 (36%)</td>
<td>2 (6%)</td>
<td>6 (18%)</td>
<td>15 (45%)</td>
<td>23 (69.6%)</td>
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<tr>
<td>Flushing</td>
<td>173 (68%)</td>
<td>11 (4%)</td>
<td>35 (14%)</td>
<td>46 (18%)</td>
<td>81 (31%)</td>
</tr>
<tr>
<td>Freehold</td>
<td>157 (83.5%)</td>
<td>7 (3.7%)</td>
<td>20 (10.6%)</td>
<td>18 (9.5%)</td>
<td>38 (20.2%)</td>
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</table>

Sources: Seventh Census of the United States, 1850, Mss. Schedule 1 (population) selected census subdivisions; Seventh Census of the United States, 1850, Mss. Schedule 4 (agriculture), selected census subdivisions.
Other than acknowledging that farm tenancy patterns near cities do not follow those established elsewhere, scholars generally have not undertaken substantive study of this pattern. For example, Paul Gates omitted New York County from a discussion of tenancy levels in the Empire State. More recently, the Bateman-Foust Sample, upon which a detailed analysis of farm tenancy in the north is based, includes data from 102 "non-urban" townships in an equal number of "non-urban" counties. Within the limits of cities such as New York and Brooklyn, renters numbered between 95 and 100 percent of all agriculturists. Economist Percy Wells Bidwell explained why. According to Bidwell, these elevated levels of farm tenancy are attributed to "high land values [which]... produced tenancy near large cities, a condition of land tenure almost unknown elsewhere in the North." Even more important, such tenant agriculture persisted for years after farm owner-operators ceased to exist. Scholars relying in agricultural schedules only have completely overlooked this population, which numbered in the thousands in the New York City region.\(^{35}\)

The demography of farm tenancy in the region also poses some interesting questions. Rural tenants came from backgrounds similar to the men and women from whom they rented. More than 90 percent of male and female heads of tenant households, and an equivalent proportion of owner-operator heads of household farmed in the state of their birth. This implies a certain amount of stability among the rural farming population. Furthermore, in the few rural townships where census marshals recorded the county of birth it is evident that the vast majority of owners and renters remained in the same county all their lives. Evidence from the manuscript schedules of the census such as the repetition of surnames in certain localities also supports the idea that rural populations turned over slowly.\(^{36}\)
Meanwhile, thousands of immigrant families arrived annually at New York City in the nineteenth century, and large concentrations settled within the metropolis and surrounding area. This settlement pattern had a profound influence on agriculture and society, especially within the immediate borders of New York City, Brooklyn and Newark. This is because many newly arrived immigrants sought entry-level situations as commercial tenant gardeners and urban dairymen. In Flushing, fifteen miles east of New York and by all accounts a country town, recent immigrants made up one-quarter of the male and female tenant heads of household in 1850. The proportion of farm owner-operators born in the Empire State remained high here, at around 80 percent, while around 70 percent of tenant heads of household also identified New York State as their place of birth. But these statistics reveal a trend in which the ethnic profiles of farm tenants grew increasingly foreign in proximity of large cities.\textsuperscript{37}

The pattern is even more evident when urban tenancy levels and the ethnic make up for the renting population are compared to those of less densely populated areas. In Newark's outlying wards, for example, fully three quarters of farming households consisted of tenants. Of these around 65 percent of the male and female heads reported birthplaces outside the United States. In the partly built up Sixteenth Ward of New York City, tenants comprised 89 percent of all producers in 1850. Table 2.2 shows that nearly every tenant was of foreign birth.\textsuperscript{38}

Some of these tenants worked as "milkmen" and operated dairies in rented buildings. Low sheds and warehouses, these buildings housed hundreds of cattle, owned by scores of individuals. In all cases in the Sixteenth Ward the milkmen were male, and the vast majority
Table 2.2 Foreign-born Tenant Family Heads of Household, New York City Ward 16, 1850

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Men Percent (n)</th>
<th>Women Percent (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>100 (4)</td>
<td>100 (4)</td>
</tr>
<tr>
<td>Milkman</td>
<td>93 (27)</td>
<td>90 (21)</td>
</tr>
<tr>
<td>Gardener</td>
<td>97 (38)</td>
<td>88 (27)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96 (69)</strong></td>
<td><strong>90 (51)</strong></td>
</tr>
</tbody>
</table>

Sources: Seventh Census, New York City Ward Sixteen, Mss. Schedules 1 and 4.

Irish. Of the remaining agriculturists in the ward, the majority sought situations as commercial gardeners. Recognizing the importance of these gardeners to the local economy, Manhattan nurseryman and author William Wilson informed readers of the *New York Farmer* that, "our markets, in the spring of the year, . . . are supplied almost altogether, by European gardeners." These immigrant gardeners were also young - in fact considerably younger than farmers living in the same area. Figure 2.10 provides an illustration of the median ages for the male and female heads of agricultural households in sixteen townships across the New York City Region in 1850.39

Figure 2.10 shows that generally speaking, farmers were older than gardeners. In fact, at an average of 7½ years for men and five years for women, this gap was rather wide. Men on farms ranged in age from thirty-six to sixty years and women from twenty-six to fifty-five years. This indicates that both men and women entered the occupation rather late in life and remained. This is not surprising. If not inherited, the cost of even a moderate priced farm required considerable savings, or the ability to borrow. Both savings and establishing credit took time. The data also indicate that it took young families, especially in the East, many years to inherit or to build up the resources to start independent farming households. On the other hand gardening families started out earlier in life, but exited their occupation (in New
York) by middle age. Men ranged in age from just thirty-one to only fifty years, while women from twenty-six to fifty years. Given that tenant gardening was an occupation characterized by much transience, it likely served to assist young, newly arrived immigrant families in meeting their immediate needs. The proceeds from tenant gardening probably also helped these families work toward a goal of accumulating enough resources to either quit tenancy and make a down payment on land. While long term stability appears to be a goal of farm families, gardening families aimed more for short term gain. Thus commercial gardening provided a method for recently arrived immigrants to gain a foothold in America. Land values influenced tenancy rates by encouraging gardeners to rent where they could not afford to buy. This offers a partial explanation for the skewed tenancy rates that existed in and around New York City in the nineteenth century. Landowners also sought out renters. Near cities, where land values were high and property ownership concentrated into the hands of a relatively small non-farming population, the lease provided a way to generate income on long-term investments plus defray taxes, interest and special assessments. To do this many landowners leased their properties for residential, industrial or agricultural purposes. Yet the simple presence of vacant land near cities fails to explain why immigrants would have any interest in being tenant farmers there, especially considering that so many immigrants sought cheap land in the west. The answer lies in the tenants’ age, wealth, need for community and previous employment history.

While it is true that most immigrants moved on after landing in New York, many also hoped to remain in the area. From August 1855 through December, 1860 some 656,000 men and women passed through Manhattan’s Castle Garden Immigrant Depot. Upon being
Figure 2.10 Median Age of Male and Female Heads of Farm and Garden Households

Sources: Seventh Census, Mss. Schedules 1, selected divisions (see note 39).
interviewed fully 43 percent expressed a desire to remain in the Empire State. Cities offered new immigrants an opportunity to live with others who shared their cultural heritage, and New York was no exception. In fact, by 1855 over half of Manhattan’s 623,000 residents were of foreign birth. While Robert Ernst has shown that in upper Manhattan ethnic and racial groups lived in somewhat integrated circumstances, closer scrutiny reveals the existence of small predominantly ethnic or racial communities.42

Although most blacks in agriculture worked as farm laborers, a handful of African American farmers and gardeners also leased land in New York City. Census marshals counted only nine in the Twelfth Ward in the summer of 1850. Listed in Table 2.3, these families resided in and around the mainly black settlement known as Seneca Village. Although two of the farmers owned real estate, their modest values indicate that these are houses. Since none of these men appear on the agricultural schedules, it is likely they were all tenant farmers.43

Table 2.3 African American Agriculturists in New York’s Twelfth Ward, 1850

<table>
<thead>
<tr>
<th>Male Head of Household</th>
<th>Age</th>
<th>Place of Birth</th>
<th>Census Occupation</th>
<th>Real Property Value</th>
<th>Household Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis Freeman</td>
<td>54</td>
<td>NJ</td>
<td>Farmer</td>
<td>500</td>
<td>9</td>
</tr>
<tr>
<td>Chester Felloson</td>
<td>42</td>
<td>NY</td>
<td>Farmer</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Cornelius Nickerson</td>
<td>30</td>
<td>NY</td>
<td>Gardener</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Bristol Goeletz</td>
<td>43</td>
<td>NY</td>
<td>Farmer</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Stephen Anderson</td>
<td>50</td>
<td>PA</td>
<td>Farmer</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Lavinius Townsend</td>
<td>40</td>
<td>NY</td>
<td>Farmer</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Edsall McLaughlin</td>
<td>50</td>
<td>NY</td>
<td>Farmer</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>Charles Brown</td>
<td>30</td>
<td>MD</td>
<td>Farmer</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Henry Hagamann</td>
<td>50</td>
<td>NY</td>
<td>Farmer</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

^ Head of household is a laborer.
^b Resides in a two-family dwelling.

Source: Seventh Census, Mss. Schedule 1, New York City Ward 12.
Some farmers and gardeners also lived in uptown ghetto shanty settlements like " 'Dutch Hill,' a droll-looking hamlet . . . at the foot of Forty-first and Forty-second streets, near [the] East River." Others lived in scattered housing. Many immigrant agriculturists lived in cramped apartment buildings such as the Brooklyn tenement in Table 2.4. Here gardeners lived along side working class immigrant families. While these living situations were not always ethnically homogenous, they did offer more community than could be found in the countryside or much of the rural west.  

Table 2.4 Heads of Household of a Tenement in Brooklyn's Nineteenth Ward, 1860

<table>
<thead>
<tr>
<th>Dwelling/Family Number</th>
<th>Head of Household</th>
<th>Occupation</th>
<th>Age</th>
<th>Birthplace</th>
<th>No. in Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>309/515</td>
<td>Michael Klingsing</td>
<td>Gardener</td>
<td>35</td>
<td>Würtenburg</td>
<td>7</td>
</tr>
<tr>
<td>309/514</td>
<td>Jacob Phillips</td>
<td>Painter</td>
<td>22</td>
<td>New York</td>
<td>4</td>
</tr>
<tr>
<td>309/516</td>
<td>Johann Lang</td>
<td>Wheelwright</td>
<td>53</td>
<td>Baden</td>
<td>2</td>
</tr>
<tr>
<td>309/517</td>
<td>Catherine Vaith</td>
<td>None listed</td>
<td>57</td>
<td>Baden</td>
<td>4</td>
</tr>
<tr>
<td>309/518</td>
<td>Henry J. Burkhart</td>
<td>Butcher</td>
<td>27</td>
<td>Hanover</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Eighth Census of the United States, 1860, Mss. Schedule 1 (population), Brooklyn Ward 19, District 1.

Established immigrant communities helped newly arrived families locate suitable tenancy and employment situations. For example, emigrant Scot gardeners knew all about Grant Thorburn's seed store in lower Manhattan, "a lounging place for immigrant horticulturists and a clearinghouse of job information and advice for newly arrived Scotch gardeners." They helped recent arrivals locate non-farm employment to supplement (sometimes) meager farm returns. For example, inclement weather and seasonal production prevented gardeners from earning regular income. Unlike country and near-urban farmers who raised a broad array of crops, gardeners concentrated on a narrow range of highly perishable fruits and vegetables that made them particularly vulnerable to disaster. A drought
in the year 1854 followed by a hard winter had a detrimental effect on commercial
horticulture. Moved by the plight of gardeners in Manhattan’s Twelfth Ward, state census
marshal James Baldwin scribbled on the back of his schedule in the summer of 1855:

With some few exceptions, the Market Gardens are Cultivated by Germans,
and the products of last year was barely sufficient to pay expenses and support
their families, drouth and disease being the principal cause of the failure.

Still, Baldwin had reason to be hopeful and noted that “a number that have turned their
attention to gardening this spring and their prospects are very encouraging.” Urban dairymen
also faced the recurrent problem of epidemic disease that periodically swept through crowded
sheds killing scores of animals. As shown in Figure 2.11, an artist in the employ of Frank
Leslie’s Illustrated News captured the gruesome scene of workers butchering one such animal
after it had died in the stalls of an unknown malady.45

Compared to the countryside, cities offered immigrants a variety of alternative
employment opportunities. Factories, particularly “nuisance industries” which located in the
urban fringe regions provided an important source of alternative employment. Historian
Henry Binford has documented that bleach and brick-making establishments located in
Boston’s urban fringe provided many jobs for immigrants living near the edge of the city.
Similar patterns existed in the New York City Region where factories congregated on the
outskirts of congested areas. Table 2.5 shows the different occupations of members of the
large family of tenant gardener Michael Dorn which no doubt, supplemented his agricultural
income. The India Rubber Factory employed many others who lived in New York’s Twelfth
Ward.46

Other families incorporated a trade along with gardening. Some commercial gardeners
worked as grocers, butchers and shoemakers. For example, Lewis and Margaret Tappy, tenant gardeners in Manhattan’s Seventeenth Ward for more than two decades, ran a vegetable stand at Tompkins Market that in the 1850s became a provision and poultry dealership.\textsuperscript{47}

Besides all the advantages urban proximity offered immigrants agriculturists, many chose to attempt urban agriculture in America because of its familiarity. European agriculturists had engaged in commercial horticulture and urban dairying for years. For example, Welsh immigrants had been raising cattle in central London on the mash byproduct
Table 2.5 Members of the Michael Pom Household, 1850

<table>
<thead>
<tr>
<th>Name</th>
<th>Occupation</th>
<th>Age</th>
<th>Birthplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael</td>
<td>Gardener</td>
<td>50</td>
<td>Ireland</td>
</tr>
<tr>
<td>Ellen</td>
<td>None listed</td>
<td>40</td>
<td>Ireland</td>
</tr>
<tr>
<td>John</td>
<td>Coach Maker</td>
<td>23</td>
<td>New York</td>
</tr>
<tr>
<td>Michael, Jr.</td>
<td>Coach Maker</td>
<td>19</td>
<td>New York</td>
</tr>
<tr>
<td>Daniel</td>
<td>India Rubber Factory</td>
<td>16</td>
<td>New York</td>
</tr>
<tr>
<td>William</td>
<td>None listed</td>
<td>13</td>
<td>New York</td>
</tr>
<tr>
<td>Thomas</td>
<td>None listed</td>
<td>11</td>
<td>New York</td>
</tr>
<tr>
<td>Mary Ann</td>
<td>None listed</td>
<td>9</td>
<td>New York</td>
</tr>
<tr>
<td>Ellen</td>
<td>None listed</td>
<td>4</td>
<td>New York</td>
</tr>
</tbody>
</table>

*Census Marshals only recorded occupations for males age 16 and older.*


of the distillation process for at least a generation before these methods were tried in America. As shown in Table 2.6, in New York, Brooklyn, Jersey City and other places, immigrant "milkmen" leased space in long sheds for their cattle and pigs. As in Europe, the livestock consumed a diet of spent brewers grains, purchased by the barrel from the many distilleries that located on the outskirts of urban areas (Figure 2.11).

Table 2.6 Selected Milkmen in New York's Sixteenth Ward, 1850

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Birthplace</th>
<th>Census Occupation</th>
<th>Real Property Value</th>
<th>Families in Dwelling</th>
<th>Livestock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hugh Lynch</td>
<td>50</td>
<td>Ireland</td>
<td>Milkman</td>
<td>0</td>
<td>1</td>
<td>6 cows</td>
</tr>
<tr>
<td>Thomas Collins</td>
<td>17</td>
<td>Ireland</td>
<td>Milkman</td>
<td>0</td>
<td>1</td>
<td>25 cows, 1 horse</td>
</tr>
<tr>
<td>Mary Cameron</td>
<td>33</td>
<td>Ireland</td>
<td>None listed</td>
<td>0</td>
<td>7</td>
<td>24 cows, 3 horses</td>
</tr>
<tr>
<td>John Brady</td>
<td>42</td>
<td>New York</td>
<td>Hatter</td>
<td>4,000</td>
<td>3</td>
<td>2 cows, 6 horses, 82 pigs, 5 goats</td>
</tr>
<tr>
<td>James McClusky</td>
<td>45</td>
<td>Ireland</td>
<td>Milkman</td>
<td>10,000</td>
<td>3</td>
<td>100 cows, 3 horses</td>
</tr>
</tbody>
</table>

*Source:* Seventh Census, Mss. Schedules 1 and 4, New York City Ward 16.
Immigrant horticulturists also had previous experience in both row crop agriculture and “garden culture under glass.” Two types of horticulturists, those professionally trained and market gardeners, found employment in New York, as well as other major American cities. Professionally trained horticulturists included gentlemen’s gardeners and nurserymen. This training involved working on estates of wealthy Europeans under the tutelage of experienced gardeners.49

Upon their arrival in America these individuals moved into the agricultural elite of the New York City region. They wrote books and imported exotic plants and seeds. They joined the American Institute of the City of New York, the state’s oldest agricultural society and founded numerous smaller associations. They supported two important New York-based journals dedicated to the promotion of their field, the *New York Farmer* (1828-35) and *The Horticulturist* (1849-75). Besides these elite gardeners, trained Irish gardeners also settled in the New York area. Performing general grounds keeping work, they also raised fruits and vegetables for their employers’ consumption and sometimes sale. Some gardeners even entered fruits and vegetables at the many annual fairs held in and around New York. According to New York seedsman Grant Thorburn these professional gardeners viewed their occupation as a step toward tenancy. By working hard and saving their money “in a few years, will have enough to hire some acres near the city, where they may commence market gardening for themselves.”50

Established nurserymen competed with estate owners to hire these trained European gardeners. Employment in American nurseries exposed emigrants to social networks and allowed them to gain experience under new environmental conditions. In his memoirs,
aimed at attracting Scottish horticulturists to America, Grant Thorburn recommended that before starting out on their own, emigrant gardeners should seek temporary employment as gentleman’s gardeners to accustom themselves to the American climate. It seems many followed this advice. Peter Henderson, later founder of a greenhouse empire in Jersey City and author of a series of popular gardening handbooks, started out at the Prince nursery in Flushing, New York. James Wilson, who emigrated to American in the middle 1820s and later became a well-known nurseryman in the Albany, New York area began as a gardener on the Brooklyn estate of H.B. Pierrpont.51

Some emigrants boldly started their own firms upon their arrival in America. Nurseryman John Taylor, originally of England, built a firm of twenty-four greenhouses and sold plants and flowers worth more than $12,000 annually. André Parmentier, descendant of a long line of French horticulturists immigrated to North America in 1824 in search of better business prospects. Encouraged by Dr. David Hosack, Parmentier abandoned his original plan to locate in the West Indies and purchased twenty-five acres of land outside the village of Brooklyn. By the time of his death six years later, Parmentier and his “garden” had become famous in the small, but growing circle of American nurserymen.52

Market gardeners differed from trained horticulturists in that their experience consisted of orally transmitted tradition. The roots of the European commercial gardening industry extend far back into history. Donald Webber traced British market gardening back to fourteenth century England and other scholars have documented the extensive urban garden and greenhouse industry in existence well before the nineteenth century.53

Studies of English market gardening indicate that it assumed a role similar to a
commercial trade. In what J.M. Martin has called horticultural "family dynasties," sons were "bred to the business of gardening" and adopted the occupation of their fathers. F. Beavington's analysis of eighteenth century vital records confirmed a pattern of occupational inheritance, but also revealed that existence of families of gardeners in which extended family sometimes lived under one another's roofs. This is significant to the situation in New York because it explains one reason why immigrants found urban agriculture attractive while native-born Americans did not.54

A certain cohesion probably also existed among European gardeners. Back in Great Britain, the establishment of the Gardener's Company and other gardening societies indicates possession of a set of common goals. The tools that they chose to use such as the spade, singled out gardeners from other agriculturists. Even fictional accounts of life in the nineteenth century indicate that a common understanding existed regarding the distinctiveness of this occupation. In the novel The Count of Monte Cristo (1846), Parisian soldier Maximilian Morrel disguises himself as a market gardener. After leasing a vacant lot from a "speculator," Morrel announces to his beloved, "I have chosen a trade... I have become a gardener" and "adopted the costume of my calling," which Dumas describes as "a common gray blouse and velvet cap."55

Cognizant of these special characteristics, American landowners relied on ethnic stereotypes to select tenants. Given the British origins of so much of the horticultural literature, many of the biases exhibited in print extended against persons not from Scotland or England. For example, in the preface to the American edition of The Practical Fruit, Flower and Vegetable Gardener's Book (1855), Patrick Neill informed readers that he based the
book on the knowledge of Scottish gardeners because they are "the most intelligent and successful gardeners." Yet descriptive sources as well as census tallies indicate that "Germans" and Irish made up the greatest number of horticulturists in the New York City region. Germans comprised a formidable proportion of market gardeners and received many favorable reports from the agricultural elite. As part of a series of articles promoting agriculture in upper Manhattan, the New York Farmer described Germans as "sober," "industrious," and "hard-working," truly ideal tenants. One story in the series referred to a German gardener and his wife who leased five acres of land outside the city of New York. After five years of hard work they "succeeded at putting out at interest $1,000 dollars," an accomplishment for any farmer in the 1830s.56

Landowners took such evidence seriously. In the mid-1840s retired Brooklyn farmer and land developer Jeremiah Johnson set aside seventy acres from his farm in ten "allotments." He then leased the small units to families who raised vegetables for sale in the public markets. Johnson leased only one plot to a non-German family. By 1850 he took on three more tenant families, all of whom were German. Johnson surely had the choice to lease to anyone but that he leased to a predominantly German clientele suggests that he may have viewed them more favorably than other groups. On the other hand, perhaps established families helped landlords locate new tenants.57

Landowners also sought tenants from countries where a high probability existed that they would possess certain skills. E.J. Woolsey, a nursery owner in northwestern Queens County hired Scottish emigrant Samuel Pate to oversee the drainage of his land. Woolsey reasoned that because Pate had experience farming wet Scottish soils, his knowledge would be useful.
It is unlikely that similar considerations did not pass through the minds of landowners as they sought prospective tenants. On more than one occasion the New York State Agricultural Society credited Flemish farmers for their well-cultivated small farms, dexterous use of the spade, and highly fertilized fields. In the autumn of 1857, *New Jersey Farmer* correspondent "D.N." expressed great satisfaction with his Belgian tenant who raised potatoes, turnips and carrots on land outside Elizabeth, New Jersey. The tenant's skills enabled him to "make more money on twenty acres than most farmers did on one-hundred."^58

The lease also offered certain advantages to property owners. To distillers, leasing shed space to dairymen, like the ones pictured in Figure 2.12, helped them vertically integrate the industry by utilizing a waste product. Owners of vacant land discovered that a tenant's presence discouraged illegal dumping of garbage and stable manure. This problem plagued owners of empty lots outside the built up portions of urban areas. In New York, the Common

Figure 2.12 Cattle Sheds, Flushing Avenue and North 4th Street, Williamsburg

*Source: Frank Leslie's Illustrated Newspaper* 6 (3 July 1858): 69.
Council declared such dumping grounds nuisances and charged owners with the responsibility for keeping their land clear.

Landlords and tenants in the New York City region engaged in a variety of share and fixed rent lease agreements, the two most common types of leasehold tenure in rural America. The ability to embrace or reject risk determined the exact details of the contract. Landlords reluctant to rescind complete control over the use of their lands required tenants to farm on shares and preferred short, flexible terms. Landowners assumed greater risk under such agreements since the tenant paid rent out of the harvest. Studies of share tenancy in the Northeast are lacking, but Midwestern tenancy has been studied in detail. For example, Allan Bogue found that Midwestern farmers negotiated one-third, two-fifths and even two-thirds share leases with landowners.⁵⁹

Two types of fixed-rent leases existed in the rural North. In upstate New York tenancy was a deeply entrenched political and economic institution. Beginning in the seventeenth century recipients of large land attempted to recreate quasi-feudal manors by renting land to tenants. Characterized by leases measured in terms of the lives of its occupants rather than seasons or years, and by seemingly archaic rent requirements, and designations where tenants should grind their grain, this system existed in the middle and upper Hudson Valley, plus western New York State until the 1840s.⁶⁰

Under the second type of fixed rent lease, tenants simply paid cash on a regular basis. Tenants embracing more risk and desirous of less intervention on the part of the land owner sought out such agreements as did absentee land owners who were uninterested or incapable of receiving shares of farm produce. Fixed rent leases shifted greater risk on the part of the
tenant, who paid the same amount regardless of the quality of the harvest. Analysis of
country farm account books indicates that such agreements could be extremely casual in
nature and many probably went unrecorded.\footnote{61}

In the New York City region, tenants engaged in both fixed rent and share agreements.
Like Midwestern farmers, the decision to select one or the other seems to have been made
based on the needs of tenant and land owner. Due to the prevalence of cash exchanges in the
New York City region, such rentals were common, but the absence of statistics before 1880
makes it impossible to determine which lease was most common.

Lease details varied from situation to situation. In 1852 New Jersey farmer Malford
Drummond leased a farm for $12 per month, to be paid on a monthly basis. On Long Island,
Henry Taft grew seven acres of rye on land owned by James H. Weeks for a one-third share
of the costs and harvest. Taft lived near Weeks and carted wood for him, so it appears they
knew one another. Landlords established more stringent requirements for renters viewed as
higher risks. After failing to pay his rent because of illness, an African American farmer,
known to us only as "Jacob" faced a lease of $50 per year plus one-half of the produce he
raised. Furthermore, the lease required Jacob to plant half the acreage in potatoes.\footnote{62}

Most, but not all urban real estate investors leased their properties at a fixed rate since
they had little ability or inclination to collect, store and dispose of shares of farm produce
from their tenants. In this way, urban leases mirrored standard city property leases, except
that agricultural leases ran for less time than the traditional twenty-one year ground lease.
Few landowners would have rented to gardeners for so many years because the presence of a
garden would have prevented non-agricultural uses.\footnote{63}
Unlike selected Midwestern counties, county clerks in the New York City Region did not regularly record agricultural leases. The evidence indicates that where they were sued, urban landowners used standard lease agreements to rent farm land. The text of one used in New York City is reproduced in Figure 2.13.\(^{64}\)

**TENANT’S AGREEMENT**

This is to certify that I have hired and taken from

William J. Staples Exec[utor] those two lots of ground on the easterly side of the ninth avenue and adjoining the lot on the southeasterly corner of sixteenth street and being the same lots now occupied and used by me as a garden.

For the term of three years, to commence on the first day of May at the yearly rent of one-hundred dollars, payable quarterly.

I also agree to pay the taxes.

28 April 1838 [signed] Richard Davies

Figure 2.13 Lease for Land on Sixteenth Street, New York City, 1838.

Source: Staples and Sherman Family Papers, Folder 1, Manuscripts Collection, New York Public Library.

Given the fluidity of the urban real estate market, short term and fixed rents characterized most urban farm leases. Mathias Lane, who leased a “piece of pasture” near the suburban Manhattan village of Bloomingdale, paid his rent at six-month intervals, as did Thomas Bennet in Kings County. Rent also varied depending on the land quality and location. Dairymen leasing “an old field full of weeds” in upper Manhattan paid fifty dollars per year while family of German gardeners leased uncleared, rocky land in upper Manhattan for ten dollars per acre per year. Gardener Richard Davies, whose lease is mentioned above,
paid $100 per year on a three year lease of three-sixteenths of an acre. According to Marc Linder, "tenants by share were everywhere a miniscule phenomenon" in rural Kings County. Thus the leases and tenancy arrangements used in urban areas resembled leases used in the surrounding countryside, although the profile of the tenants and their modes of production did not.65

Land values played an important role determining the characteristics of agriculture in the New York City region. New York's expanding economy in the early part of the nineteenth century encouraged speculators to make investments in land near densely populated areas. The resulting disparity between rural, urban and urban-fringe land values was a first step in what became a differentiation of farming types and methods in and around New York City. While stable land values encouraged farm families to continue along with business as usual, rising values encouraged farmers to sell out and move on. While only some families did this, retired farmers and more importantly the heirs of deceased landowners held fewer reservations about turning the homestead into a subdivision. For a time active farms faced reduced or even suspended operations during which time fields sat empty and unused.

Whether investing in a country estate or reaping the profits of an overheated real estate market, purchasing land near cities was risky business. In order to defray the long term costs of their investments, or to offset losses incurred on other properties, land owners leased vacant lots to persons willing to farm them. Agriculture provided an ideal use of land because it cost the owner nothing and it protected the investment. Cities with large immigrant populations provided a pool of experienced labor, and European-born market gardeners raised fruits and vegetables on small leased plots, to which they walked from the
tenements in which they lived. In more densely populated areas near distilleries Irish
dairymen leased space under large sheds for livestock. Here, in crowded filthy disease-ridden
conditions the animals were fed a diet of spent mash from the distillation process. Both
commercial gardeners and urban dairymen sold their products to consumers who lived within
a few miles of their establishments. Public health regulations eventually eliminated the urban
dairies toward the end of the nineteenth century, but commercial gardening continued well
into the twentieth century in the New York City region.
Notes


7 Spengler, *Land Values in New York*, 76; In 1830 the New York Common Council forbade burials south of Canal Street and in 1851 extended this prohibition to 86th Street. As a result of this and the growing popularity of the rural cemetery, much land on Long Island was sold for interning the dead. Miles of cemeteries extending along a ridge between Kings and Queens Counties, which measured 2,000 acres in 1893, attest to the extent of this form of land utilization. See J.H. French, *Gazetteer of the State of New York* (Syracuse: R. Pearsall Smith, 1860), 428; and “Cemeteries” in Kenneth T. Jackson, ed. *The Encyclopedia of New York City* (New Haven: Yale University Press, 1995), 196; See also Alter F. Landesman, *A History of New Lots, Brooklyn to 1887* (Port Washington, New York: Kennikat Press, 1977), 153-155; Stephen M. Ostrander, *A History of the City of Brooklyn and Kings County* (Brooklyn: Published by Subscription, 1894), 2:93-4; Blackmar, *Manhattan for Rent*, 160,


Iconography, 5:1763; Rufus Rockwell Wilson, New York: Old and New 2:287-289. The Lenox estate was located at 68th-71st Streets between 4th-5th Avenues. A portion of the proceeds of the sale of the estate went to the establishment of the New York Public Library.


13 Of course, farmers sold land to developers outside periods of speculative fervor. For sales by farmers to developers of Brownsville, New York in the 1850s and 60s, see Landesman, History of New Lots, 160; Doucet, “Urban Land Development,” 308; For particulars about the 1868-74 event in New York City see Real Estate Record Association, History of Real Estate, 60, 61-63; Pound, Golden Earth, 133; For a history of the speculative boom of the 1830s see Sakolski, Great American Land Bubble, 233-36; For speculation in the Chicago region in the 1830s, see Cronon, Nature’s Metropolis, 29-301 Linder and Zacharias, Of Cabbages and Kings County, 125-27.


16 Doucet, “Urban Land Values,” 318-20; Mongin, *Historic Structures Report*, 64-5; Blackmar, *Manhattan for Rent*, 204; Pound, *Golden Earth*, 280; Spann, *New Metropolis*, 208; For other examples, see H. Croswell Tuttle *Abstracts of Farm Titles in the City of New York, East Side, Between 75th and 120th Streets* (New York: The Spectator Co., 1878), 242-45 or either of the other two volumes in this set.

17 Joan M. Jensen’s study of Philadelphia-area wills argues that a pattern of asymmetrical real property distribution based on gender existed through at least 1850. While my analysis of New Jersey wills from the 1840s to 1870s found that testators followed a similar pattern, it is also apparent that many tried to divide their estates equivalently among all heirs. For an explanation of inheritance patterns and probate law in the 18th and 19th centuries see Jensen, *Loosening the Bonds: Mid-Atlantic Farm Women, 1750-1850* (New Haven: Yale University Press, 1986), 21-25; For a summary of New York State legislation regarding married women real property owners at mid-century see *Hunts Merchants Magazine* 23 (November 1850): 524-25; Vanderbilt, *Social History of Flatbush*, 175-76, 178, 179, 182-90; Repeating surnames and dual operator names found on the census manuscript agricultural schedules indicate that extended families stayed on the land over time and that on occasion, male siblings farmed together; Danhof, *Changes in Agriculture*, 80; AICNY, *Sixth Annual Report* (Albany: Charles Van Benthuysen, 1848), 115; *History of Queens County* New York: W.W. Munsell, 1882), 319; Journal and Account Book of James Hawxhurst, 26 March 1831, Manuscripts Collection, New York Public Library; Peter Wyckoff, “Reminences of Peter Wyckoff of Bushwick, Long Island,” typescript, Brooklyn Historical Society, 2-3; For an example of a testator directing his executor to sell his property at a future date, see the Last Will and Testament of George W. Brown, Woodbridge, Middlesex County, New Jersey (#12975L 1857), New Jersey State Archives, Trenton; Child, *Letters from New-York*, 162-63; For other examples of conservatism in real estate transactions see Thomas D. Strong, *The History of the Town of Flatbush, in Kings County, Long Island* (New York: Thomas D. Mercein, Jr., 1842), 177.

18 Eighth Census of the United States, 1860, Mss. Schedule 1, (population), Montgomery Township, Somerset County, New Jersey, microfilm, Newberry Library, Chicago, Illinois;
Eighth Census of the United States, 1860, Mss. Schedule 4, (agriculture), Montgomery Township, Somerset County, New Jersey, microfilm, New Jersey State Archives, Trenton; See also the Conover family between 1850 and 1860. Seventh Census of the United States, 1850, Mss. Schedule 1, (population), Freehold, New Jersey, microfilm, Newberry Library, Chicago, Illinois; Seventh Census of the United States, 1850, Mss. Schedule 4, (agriculture), Freehold, New Jersey microfilm, New Jersey State Archives, Trenton; Eighth Census, Mss. Schedules 1 and 4, Freehold, New Jersey; Danhof, Changes in Agriculture, 107; Last Will and Testament of Israel Crane, Newark, New Jersey (#15094G 1858). Linder and Zacharias provide an example of a Kings County widow who leases the farm until her sons are old enough to run it on their own. Of Cabbages and Kings County, 203.

19 For division of the large Westchester County estate known as Morrisiana, see Wilson, New York: Old and New, 2:303-04, and for division of the Manhattan estate known as Chelsea, see (pp219-20, 225-6, 228, 230); Brooks, Diary of Michael Floy, Jr., ix-x, 231.

20 Ibid, x, 50; Before 1850 most property in New York City was assessed at approximately 60% of full value. Stott, Hinterland Development,” 68 note 7; In 1880 property assessments were made at around 50% of full value. G.L.B. Arner, “Land Values in New York City,” The Quarterly Journal of Economics 36 (August 1922): 555; Last Will and Testament of Michael Floy, New York, New York (Proved 10 May 1854) vol. 110, pp. 82-86, New York County Probate Court.


22 H. Croswell Tuttle, Abstracts of Farm Titles in the City of New York, Between 39th and 75th Streets, East of the Common Lands (New York: The Spectator Company, 1877), ii-iv.

23 Tuttle, Abstracts of Farm Titles in the City of New York, East Side, Between 75th and 120th Streets, 430-39; Thomas Longworth, Longworth’s American Almanac, New York Register and City Directory [1821-22] (New York: Thomas Longworth, 1822), 53; If heirs could hold on to land successfully for many years they reaped large capital gains. Don Alonzo Chapman began buying land in Manhattan around 1830 as an investment. At his death in 1871 it was worth 3.5 million dollars. His heirs did not divide the land for another 30 years, during which time it doubled in value. This was not necessarily farm land, but my point is that some heirs successfully held onto land for many years. Wilson, New York: Old and New 2:231. I would like to thank Therese Ebarb, J.D. for assistance with the interpretation of Tuttle's abstracts.


25 For examples from the Boston area, see Binford, The First Suburbs, 26, 39-40.
26 Henry Boerum paid an average of $112 per acre for his father-in-law’s farm in 1828. Stiles, *History of Kings County*, 1:290; For a similar situation with a different outcome, see Landesman, *History of New Lots*, 157-58.


28 Nurseryman Michael Floy refers to a “Fancy House Cottage” in his will which he appears to have built on his Harlem lots. Last Will and Testament of Michael Floy, 82-86; Henry Binford discovered a similar pattern in Cambridge where housing for bleachery workers was built on former fields outside the built-up area of the town. *The First Suburbs*, 162; Newark Tax Ratables, South Ward, 1844; Newark Tax Ratables, South Ward, 1850; Last Will and Testament of Sayers Coe; Newark City Directory for 1850. Linder and Zacharias, *Of Cabbages and Kings County*, 216.


32 Newark Tax Ratables, South Ward, 1850; Newark City Directory, 1850; Seventh Census, Mss. Schedule 1, Newark, South Ward; Seventh Census, Mss. Schedule 4, Newark, South Ward; Wealthy Manhattan land owner and farmer Charles Henry Hall was elected alderman
of New York's 12th Ward and representative to the state legislature. AICNY, *Transactions of the American Institute of the City of New York, 1851* New York State Assembly Document 129 (Albany: Charles Van Benthuysen, 1852), 215-16; For references to Edmund Cox, the last farmer in Newark's South Ward, see Last Will and Testament of Mary Aglae Vache, Newark (#17740G 1872).

33 Newark Tax Ratables, South Ward, 1844; Newark Tax Ratables, South Ward, 1850; Seventh Census, Mss. Schedule 1, Newark, South Ward; Seventh Census, Mss. Schedule 4, Newark, South Ward; Newark City Directories, 1850-1865; Last Will and Testament of William H. Earl, Newark (14994G 1857).

34 For an industrial parallel to the way in which high land values checked the expansion of agriculture near urban areas, see Stott, “Hinterland Development,” 48-51; Tenancy rates are calculated from the Seventh Census Mss. Schedules 1 and 4 for the following divisions: New York City Ward 16, Brooklyn Ward 7, Newark, Ward 5 and South Ward, the Town of Flushing, New York the Township of Freehold, New Jersey; Attack and Bateman, *To Their Own Soil*, 111; Lawrence, “Changes in Agricultural Production,” 161; Linder and Zacharias, *Of Cabbages and Kings County*, Table 29, p324.


36 Jeremy Atack, “Tenants and Yeomen in the Nineteenth Century,” in *Quantitative Studies in Agrarian History* ed., Morton Rothstein and Daniel Field (Ames: Iowa State University Press, 1993), (pp.24) concludes that in the rural northern states English and German immigrants were less likely to be tenants than native born Americans. My data bear this out for rural districts in the New York City Region. See Table 2.0 and also Seventh Census, Mss. Schedule 1, Wawayanda, New York.

37 Calculated from Seventh Census, Mss. Schedules 1 and 4 for the Town of Flushing, New York.

New York Farmer (November 1828), 256; The data from which Figure 2.10 is calculated comes from Seventh Census, Mss. Schedules 1 and 4 for the following divisions: In New Jersey: Bergen County: Lodi; Hudson County: Bergen, North Bergen; Essex County: Newark Ward South, Ward 5; Monmouth County: Ocean, Freehold; Somerset County: Montgomery. In New York State: New York County: New York City Ward 16; Richmond County: Westfield; Kings County: Brooklyn Ward 7, Flatbush, New Utrecht; Queens County: Flushing; Suffolk County: Huntington, Southampton; Westchester County: Cortlandt; Rockland County: Clarkstown; To eliminate the influence of retired farm men and women, these calculations do not include anyone over age 65.

Other historians have noted the youthfulness of tenant farmers. William L. Marr, “Nineteenth Century Tenancy Rates in Ontario’s Counties, 1881 and 1891,” Journal of Social History 21 (Summer 1988), 759-61; For evidence of long term tenants, see Linder and Zacharias, Of Cabbages and Kings County, 203.

For the influence of land values on tenancy, Ibid, 757, 760-61.

Ernst, Immigrant Life, 41-7, 189 Table 10, 193 Table 14; Stanley Nadel, Little Germany: Ethnicity, Religion and Class in New York City, 1845-1880 (Urbana: University of Illinois Press, 1990), 22-23, 37.

One way scholars identify probable tenants through the census is to select persons reporting agricultural occupations from schedule 1 and compare them to the names listed on schedule 4. Any persons left over from schedule 1 - called “farmers without farms” are considered tenants. It is also possible, however that these persons are new to the area or have not engaged any land, or are agricultural laborers whose occupations have been misinterpreted. On Seneca Village, see Rosenzweig, Park and the People, 65-73; Linder and Zacharias, Of Cabbages and Kings County, 209-10.

Many poor, immigrant families lived in shanty towns on the edges of large cities in the nineteenth and early twentieth centuries. Some of these families had gardens for subsistence production and should not be confused with commercial producers. See New York Times (21 March 1855): 2; For Brooklyn see Vanderbilt, Social History of Flatbush, 270; See also Andrews, “Elements in the Urban Fringe Pattern,” 174-76; For a definition of a “shanty” see Rosenzweig, Park and the People, 68, and for an example of scattered housing (pp.74); My assertion that so many agriculturists lived in tenement dwellings is based on extensive use of the Mss. census population schedules.

Landesman, History of New Lots, 389; Ernst, Immigrant Life, 63-4; Census data from schedule 1 of the census support other sources which indicate that gardeners possessed little valuable personal property. In a study of northern farm tenants in 1860, Jeremy Atack concludes that wealth is the most important predictor of tenancy. See Atack, “Tenants and Yeomen in the Nineteenth Century,” 23, 26; Horticulturist (1855): 553; J.M. Martin found
that market gardeners in England were also poor. See J.M. Martin, "The Social and Economic Origins of the Vale of Evesham Market Gardening Industry," *The Agricultural History Review* 33 no. 1 (1985): 44-5, 50; *New York Farmer* vol. 6 no. 9 (September 1833): 263; Unlike gardeners, farmers also had the ability to store the crops they raised in sheds and root cellars, and they raised livestock. For drought conditions, see *Horticulturist* (December, 1854): 529, (June 1855): 283-84; Baldwin made this observation on 26 July 1855. See Census of the State of New York, 1855, Mss. Schedule 4, New York City, Ward 12, District 4 New York City Clerk's Office, Bureau of Old Records.

46 William Marr argues since urban wage rates were higher than rural rates, landowners realized it was more cost effective to rent than to hire wage labor. See, "Nineteenth Century Tenancy Rates in Ontario's Counties, 1881 and 1891," 757-59; Richard B. Andrews, "Elements in the Urban-Fringe Pattern," *Journal of Land and Public Utilities Economics* 18 (1942): 179-80; Binford, *The First Suburbs*, 161-62; Ernst, *Immigrant Life*, 70; Rosenzweig, *Park and the People*, 75; Industries located on the outskirts of cities provided employment for the local population. For example, "Harlem . . . has several churches, important manufactories of India rubber, chemicals, candles, ale, beer, carriages, and row boats." J.H. French, *Gazetteer of the State of New York* (Syracuse: R. Pearsall Smith, 1860), 419.

47 Commercial gardeners outside London worked as shopkeepers and tradesmen. Martin, "Social and Economic Origins," 47-8; For industrial parallels to agriculture see Stott, "Hinterland Development," 52-3; For Lewis Tappy see New York City Directories, 1821-1859; "Mrs. Tappy" is also one of many petitioners "having Vegetable Stands in the Tompkins Market" Petition of W. Farrington and Others, 15 March 1847 City Clerk's Papers, Markets Folder, MARC.


49 Grant Thorburn, *Forty Years' Residence in America* (London: James Fraser, 1834), 266; *Horticulturist* (April 1854): 178; William Chorlton, a Richmond County gardener contributed a regular column to the *Horticulturist* in 1853-54 which provides a good picture of a professional gardener.


Martin, “Social and Economic Origins,” 48, 50; *New York Farmer* (September 1828): 231; On family participation in garden work for Germans, see *Horticulturist* (May 1849): 499, for the French, see (May 1850): 518-19; and *American Gardener’s Magazine* 1 (September, 1835): 355; Conversely, writing to a British audience Grant Thorburn cautioned that having a family was a liability for the immigrant gardener, unless he had older sons or had saved 100-200 guineas. Thorburn, *Forty Years’ Residence*, 267-68; On occupational inheritance, Beavington, “Early Market Gardening,” 93; Beavington, “Development of Market Gardening,” 27.


Use of ethnic stereotyping to determine a person's supposed agricultural skill was pervasive in nineteenth century America. Kathleen Conzen, “Immigration and Agriculture” in *Agriculture and National Development: Views on the Nineteenth Century* (Ames, Iowa: Iowa State University Press, 1990), 310; Certain ethnic groups were attracted to specific agricultural occupations. For example, according to Robert Ernst, the Irish made up almost the entire population of stable/animals caretakers. He estimated that 84% of immigrant hostlers were born in Ireland. Ernst, *Immigrant Life*, 71; Leighton, *American Gardens*, 71; *American Gardener’s Magazine* 1 (August 1835): 287; Patrick Neill, *The Practical Fruit,*

57 Seventh Census, Mss. Schedule 4, Brooklyn Ward 7; Seventh Census, Mss. Schedule 1, Brooklyn Ward 7; AICNY, Fifth Annual Report, 96.

58 NYSAS, Transactions 7 (1847), 247; NYSAS, Transactions 6 (1846), 486-88; New Jersey Farmer 3 no. 3 (November 1857): 67.


62 Robert Drummond Farm Accounts, July, 1852, New Jersey Collection, Alexander Library, Rutgers University; In the spring of 1831 James Hawxhurst leased a farm from an heir of Samuel Belden. The one-year agreement required Hawxhurst to pay $130 in rent plus the taxes. Hawxhurst also agreed to build a "back house and repair the board fence around the main house" and his landlord agreed to deduct the cost of repairing the fence and taxes from the rent. The lease also permitted Hawxhurst to cut enough wood for his family's use through the first of December. Journal and Account Book of James Hawxhurst, 26 March 1831: Account Book of James H. Weeks, vol. 2, lease mentioned [1846], see also subsequent entries demonstrating the division of costs, [August 1847], 27 September, 27 October 1847, Manuscript Collection, New York Public Library; George T. Butler to Christopher Woodruff, 7 March 1847. MG-25 New Jersey Historical Society, Newark; William Raynor leased a farm for $75 per year. Account Book of James H. Weeks, (vol. 1, 3 April 1833). Raynor also worked for Weeks carting cordwood (vol. 1, 28 March 1831 through 3 August 1833).


64 The grantor index in the New York County Clerk's office contains irregular notations indicating that some parcels of land were leased, however the deeds to which these refer contain no information specific to any lease agreement; William J. Staples was the executor of the estate of Anthony B. who died in the spring of 1834. The Staples family still owned
this land as late as the 1860, although it is not known how long it remained leased to Davies. For Staples - Davies agreement see, Staples and Sherman Family Papers, Folder 1, Manuscripts Collection, New York Public Library. For additional information on the estate, see folder 2 of this collection. Linder and Zacharias, Of Cabbages and Kings County, 204.

65 Receipt Book entry, 10 May 1839, Harsen Family Papers; New York Farmer (September 1833): 265, (January 1835): 7; Rosenzweig, Park and the People, 77; Calculation made by author based on the size of an acre at 200 feet square. Tenant's agreement between William J. Staples and Richard Davies 28 April 1838, Staples and Sherman Family Papers, Folder 1; Linder and Zacharias, Of Cabbages and Kings County, 205, 212.
CHAPTER 3. SELLING RETAIL

That urban areas influence(d) the marketing choices of local agriculturists is obvious. Cities are terminal markets, home to thousands of “ultimate consumers.” Agriculturists living close enough to take advantage of this fact possess a distinct advantage over competitors located in more remote areas. Not as obvious however, are the actual mechanics of marketing agricultural products. In the nineteenth century agrarian families living close to large towns and cities, or along navigable waterways leading to these places, often disposed of the products of their labors through retail-type transactions. Retail, that is, sales made directly to the consumer included commercial exchanges in municipal public markets, sales at the “farm gate” and peddling. Farmers and gardeners who engaged in retail trade geared production and sales strategies to fit these conditions. Producing highly perishable foodstuffs, disposing of them in quantities as small as a few pounds or bushels, and engaging in large quantity direct sales to city firms such as stables, urban and near-urban agriculturists relied to a considerable extent on retail, rather than wholesale markets.

While acknowledging the existence of retail trade, for years historians overlooked it, preferring to study wholesale transactions. This is because most grain, tobacco, cotton, rice and livestock, plus all exports were channeled through a wholesale distribution system. Furthermore, the agricultural expansion of the West, use of railroads and the dominance of entire sectors of the agricultural economy by merchants in cities like New Orleans and Chicago tends to reinforce the importance of wholesale markets. Even in the New York City region, the volume of wholesale trade probably exceeded retail by 1850 and surely eclipsed it by the outbreak of the Civil War. A few studies have approached retail trade in a systematic
fashion, but it is cast in terms of a "pre-capitalist" local trade, dependent on barter and an understanding that goods and services had an exchange, rather than monetary value. In the New York City region, such conditions, where they ever existed, had long ended by 1820. Not that barter and exchange transactions did not take place after this date. They did and still do -- we could easily find them alive and well today. Yet their importance was minimal in nineteenth century downstate New York and northern New Jersey. Here, retail trade took on all the trappings of a "market economy," farmers and consumers sought out one another, they had an understanding of price, and they dealt in cash.¹

Farmers engaged in three types of retail exchange: sales at the "farm gate," at the public markets, and by peddling. Not every farmer participated in all three types, geography, production and personal goals influenced choice and level of involvement. Farm gate sales, the most common retail transactions across space and time, are well documented in surviving farm account books. These are irregular transactions in which consumers purchase grain, butter, eggs, meat, hay or wood directly from the producer rather than from retail stores. Although not viewed in the context of retail trade, historians have noted the importance of farm gate sales in eighteenth century America, and in pre-capitalist, cash-poor, and isolated sections of nineteenth century New England. In these environments, farmers exchanged purchases for barter: labor, homemade items and produce. Considerations for cash entered into only some transactions, and a web of debts and credits linked farm families with residents of nearby towns.

In the New York City region, farm gate sales provided rural families with cash income ranging from supplemental to substantial. Most farm gate sales consisted of small-quantity,
low-cost purchases. Purchaser names appear in farm account books once or twice, giving a casual, almost random quality to these transactions. Their infrequency and small size suggests that persons who made farm gate purchases often sought items required immediately but could not find or afford in town. For example, in April 1857 Suffolk County farmer John H. Wickes sold Job Edgar, a sixty-four year old laborer, two bushels of buckwheat and $\frac{1}{2}$ bushel of turnips for $1.18. He also transacted business with a local wheelwright, two carpenters and a hotelkeeper in nearby Huntington (Figure 3.1). Some buyers and sellers appear to have been acquainted. In the spring of 1847 New Jersey farmer Rebecca Vail sold "Ira" two pounds of butter for thirty cents. Other times, they were not, and this is one reason

Figure 3.1 The New York City Region

Note: Union County, New Jersey created out of southern portion of Essex, 1857.
retail sales often involved cash at the time of transaction. For example, John Ditmas noted in his diary that his father sold hay to "a stranger" one spring day in 1838.²

In addition to these small quantity casual sales, farmers living near large towns also entered farm gate sales with customers who purchased larger quantities of hay, firewood, and oats. John Ditmas, who lived on a farm in Kings County recorded sales of corn, straw, and oats to stables in the city of Brooklyn. As shown in Table 3.1, sales of hay in quantities exceeding a ton made up an important part of his parents' income.³

Table 3.1 Hay Sales, July-August 1837

<table>
<thead>
<tr>
<th>Amount (lbs)</th>
<th>Sale Total$</th>
<th>Purchaser</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.640</td>
<td>$ 9.22</td>
<td>Mr. Ireland</td>
</tr>
<tr>
<td>1.870</td>
<td>$10.52</td>
<td>Mr. Whitson</td>
</tr>
<tr>
<td>1,635</td>
<td>$ 9.20</td>
<td>Mr. Burbeck</td>
</tr>
<tr>
<td>2,380</td>
<td>$13.39</td>
<td>Mr. Whitlock</td>
</tr>
<tr>
<td>2,315</td>
<td>$13.02</td>
<td>Union Whitted Co.</td>
</tr>
<tr>
<td>2,420</td>
<td>$13.61</td>
<td>Mrs. Cornell</td>
</tr>
<tr>
<td>2,220</td>
<td>$12.49</td>
<td>Dr. Rappalye</td>
</tr>
<tr>
<td>1,800</td>
<td>$10.13</td>
<td>Mr. Baker</td>
</tr>
<tr>
<td>2,075</td>
<td>$11.67</td>
<td>M. Whitson</td>
</tr>
<tr>
<td>2,125</td>
<td>$13.28b</td>
<td>Mr. Ireland</td>
</tr>
<tr>
<td>20,480</td>
<td>$116.53</td>
<td>2-Month Total</td>
</tr>
</tbody>
</table>

² Price per cwt 4s. 6d (56½¢).
³ Price per cwt for this transaction, 5s (62½¢).

Source: Account Book of John C. Ditmas, July-August, 1837, Brooklyn Historical Society.

Farm gate sales also included the exploitation of temporary niche markets. For example, James H. Weeks, who lived on an isolated farm miles from any substantial market, boarded a horse for a railroad which passed nearby. Over four months of what was apparently a long-term arrangement, Weeks charged the railroad thirty dollars for oats and twenty for "keeping a horse." But firewood sales to the railroad far exceeded his other
earnings. In April 1846 Weeks delivered 225 cords of oak and hickory worth $506 to N.H. Marshall, agent for the Long Island Railroad. Weeks' detailed accounts show that in this case, farm gate sales made up the bulk of his income.⁴

In addition to farm gate sales, agrarian families engaged in a form of retail activity not usually associated with agricultural marketing -- peddling. Like farm gate sales, these transactions provided a source of cash income. But peddling involved a significant time investment because, unlike sales at the gate where consumer located producer, peddlers sought out their customers. Thus farmers peddled only under certain circumstances, such as during periods of high prices, the disruption of usual modes of marketing, or when reduced responsibilities around the farm made for spare time. For example, Sylvester and Daniel Crane, two teenage farm boys, peddled cordwood to communities within fifteen miles of their Essex County, New Jersey farm. In late December 1827 and a week later in early January, seventeen year old Daniel carted two loads of wood to the town of Newark which he sold for $9.25. Unlike smaller settlements, Newark designated its lower green for such informal transactions. Here, consumers and wood retailers knew to expect farm wagons and sleighs laden with cordwood. Figure 3.2 provides an excellent view of this informal market on the Newark green, in full operation on a summer day in the middle 1840s. The intermingling of buyers and sellers is surely similar to what the Crane boys experienced in that same green during the winter of 1827-28. In the smaller communities like Connecticut Farms, the young wood-sellers probably drove up and down the streets to attract the attention of customers. Although sales of wood certainly took place throughout the year, farm diaries and account books indicate that few farmers peddled wood in the summer. During these months
townspeople purchased their supplies from wood retailers or cartmen, who purchased from farmers or wood lot owners. In the winter months, however, when wood prices were higher and farmers had more time on their hands, many chose to peddle firewood.\textsuperscript{5}

Exceedingly low market prices also provided incentive for farmers to peddle. Every year farmers peddled late season cabbages around their immediate neighborhoods. Ripening late in the season, hardy cabbages ranked among the last crops to be harvested, and their price reached a seasonal low point late in the fall. Farmers literally plowed a furrow of soil over any cabbages not sold by late November in hope that they would keep until spring. Since commercial growers raised thousands of heads, this process involved considerable effort, which had to be repeated to remove the plants in the spring. Furthermore, depending on winter weather conditions and snow cover, this method of storage entailed varying amounts

\textbf{Figure 3.2 Informal Retail Market at the Lower Green, Newark, c.1845}

\textit{Source:} John W. Barber and Henry Howe, \textit{Historical Collections of the State of New Jersey} (New York: S. Tuttle, 1844), 177.
of loss. For these reasons, farmers peddled cabbages in the fall to people laying in stocks for winter, rather than waiting to unload them in the spring. For example, Suffolk County farmer Selah Wicks sent hired hand Selah Brown to peddle cabbage on 13 November 1855. Then from the twenty-seventh through the sixth of December both Brown and Wicks made repeated trips to the villages of Amityville and Babylon and to smaller settlements peddling cabbage. A disagreeable job, farmers never spent more than a short time engaged in this occupation. For example, on 3 December Wicks packed 500 heads in his cellar, where two months earlier he stored his main commercial crop, potatoes. He then plowed under 700 remaining heads in time for the ground to freeze over them, thus ending the year’s harvest.®

Farmers also peddled highly perishable items throughout the year because they brought consistently high prices. Milk is the most important example, although in the first third of the nineteenth century milk peddling underwent major changes. From the colonial period through the 1830s the women and men who peddled milk did so on an individual, small-scale basis. Given the small volume that a single person could carry, prices must have been high enough to offset the cost of transportation. Some of New York’s milk supply came from farms in upper Manhattan, but producers carried a great deal across the Hudson and East Rivers in rowboats. In 1806, a visitor from Philadelphia observed this method of selling milk. He described milk peddlers as carrying:

a piece of wood, which I call a yoke, about two feet long, is made to fit around the back of the neck, and rest upon the shoulders. To each end is affixed a chain, with a hook at the end. This chain is of such length as to enable them, the carriers, by stooping a little, to hook the handles of two large milk vessels, made of tin... containing three or four gallons of milk. One of these is thus carried on each side, to the houses of their customers. A loud cry of “Milk’s come” awakened me from a late nap, this morning; and when I arose, and went to the window, saw a Dutchman thus yoked.®
Individual, small-scale milk retailing represented a passing form of commerce by 1830. Strong urban demand encouraged farmers to make higher volume sales by peddling it from wagons. An early proponent of such sales, Gouverneur Morris, a wealthy farmer and estate owner living fifteen miles north of New York City, could afford to experiment with high volume production and sale. In 1828 he sent farm hands out to peddle milk from his prize dairy herd. Business thrived and except for a brief hiatus during which time Morris sold milk at the farm gate to “milkmen,” he expanded the area of distribution to include New York City. Less than a decade after his foray into the milk business, Morris found it unnecessary to peddle. Having earned a reputation for selling a quality product, the farmer earned enough regular customers to establish fixed milk routes. By 1846 he oversaw the operation of six wagons routes throughout New York City and claimed to gross $17,000 per year in sales from 100 head of cattle. The potential for high prices, then induced farmers to peddle highly perishable items, but in the case of fluid milk sales, success lead to the establishment of more organized forms of marketing.

Foul weather, which disrupted usual marketing systems could also force some farmers to peddle on a temporary basis. For example, Orient, New York farmer Lucius Hallock shipped fruits and vegetables across Long Island Sound for sale in Connecticut. Although strawberries ripened during an exceedingly narrow season – about 2½ weeks – they made up one of his most important crops. Hallock, his family and crew picked around 1,000 quarts of berries every other day and rushed them by boat for sale in New Haven, Connecticut. On Friday, 22 June 1877 they picked 1,107 quarts of berries and 470 heads of cabbage, but an offshore gale prevented their loading the sloop Sea Gull. This posed two problems. First,
Hallock owned no cold storage facility, and in warm weather berries picked on the twenty-second would not last. Second, he could not collect his empty baskets sitting on a dock in New Haven which meant that his crew could pick no more for lack of containers. As a result, when they did return to the fields they would be picking overripe berries which did not travel well and brought lower prices. Disposing of the 1,100 quarts around the North Fork provided a quick, temporary solution to both problems, and so, in Hallock's own words "we peddled them out." This turned out to be a wise move because the gale lasted all day Friday and Saturday, and the markets did not open Sunday. On Monday the crew picked 900 quarts and shipped them, along with 1,600 heads of cabbage, to New Haven on calmer seas.9

Despite the labor and time intensive nature of peddling, it provided a second option for farmers to retail farm products. Peddling required more resources on the part of the seller, so farmers engaged in it only under certain conditions; if they had time; during extreme price conditions or the disruption of usual market channels, or if the item being marketed was highly perishable.

Farmers and gardeners also retailed through an institution called the public market. At least six municipalities in the New York City region operated public markets in the middle nineteenth century. Established in the seventeenth century to provide producer and consumer with a regulated trading environment, by 1800 public markets provided retail space for not only farmers, gardeners and fishermen but also middlemen, like butchers, hucksters and other miscellaneous retailers.10

Early nineteenth century retail trade revolved around the "market house," a distinctive looking building roughly 100 feet long by thirty feet wide often topped by cupola and bell.
Doors at either end allowed access to a central corridor flanked by retailers' stands. Originally built as open-sided wooden sheds, by the nineteenth century these public buildings had become ornate structures of brick and iron. Figure 3.3 shows two typical market buildings.\textsuperscript{11}

![Figure 3.3 Upper and Lower Houses of Catherine Market, Viewed from the North, 1850](image)


Market clerks maintained close supervision over the allotment of space in these houses by grouping retailers of like items together. Retail merchants leased these stands on annual and multiyear bases. This highly structured approach permitted consumers to locate specific types of retail merchants easily within crowded market houses, although interior configurations varied. Brooklyn's James Street Market house, for example, contained space for twenty-seven butchers, ten hucksters and two fishermen. New York's medium-sized
Essex Market house held twenty-four butcher stands, twenty vegetable and poultry stands, eight butter and cheese stands, one tripe stand and two coffee and cake stands. Fulton Market, on Manhattan’s East side, “an elegant quadrangular structure” contained space for eighty-eight stands. Since farmers, gardeners and other purveyors of country produce generally chose not to lease their stands by the year, they paid a flat *per diem* rate to sell in a subsection of the public market called the “country market.” Between 1820 and 1860 farmers paid twenty-five cents for the privilege of selling in New York’s country markets. Brooklyn officials charged a dime.\(^{12}\)

Municipalities reserved space for their country markets in different fashions, depending on current needs, political sentiment, and the perceived importance of the institution. Villages and towns generally designated outdoor space where farmers could sell from their wagons. Brooklyn, Paterson, and Newark followed this scheme. In Paterson, New Jersey from sunrise and 10:00 A.M. weekdays and until 3:00 P.M. on Saturdays, farmers parked their wagons or stacked boxes and baskets along a 3,700-foot section of Main Street. In Brooklyn they gathered on the commons, and after 1826, at the lower end of Fulton Street near the East River ferry landing.\(^{13}\)

Manhattan’s country markets differed in two respects to the markets established by neighboring municipalities. First, not every public market had a corresponding country market subsection. This is because the success of a country market depended on its accessibility to the “country people.” As shown in Table 3.2 this meant a having a waterfront location. Figure 3.4 shows the precise locations of these markets, relative to one another. It is significant that no country market exists farther north than 11\(^{th}\) Street.
Table 3.2 Country Markets in New York City, 1820-1860

<table>
<thead>
<tr>
<th>Market</th>
<th>Year Opened</th>
<th>Location</th>
<th>River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fly</td>
<td>1706</td>
<td>Foot of Maiden Lane</td>
<td>East</td>
</tr>
<tr>
<td>Catherine</td>
<td>1786</td>
<td>Catherine Slip</td>
<td>East</td>
</tr>
<tr>
<td>Spring Street</td>
<td>1800</td>
<td>Spring &amp; Greenwich Sts</td>
<td>Hudson</td>
</tr>
<tr>
<td>Washington</td>
<td>1812</td>
<td>Washington &amp; Vesey Sts</td>
<td>Hudson</td>
</tr>
<tr>
<td>Fulton</td>
<td>1822</td>
<td>Fulton Slip</td>
<td>East</td>
</tr>
<tr>
<td>Franklin</td>
<td>1821</td>
<td>Old Slip</td>
<td>East</td>
</tr>
<tr>
<td>Clinton</td>
<td>1827</td>
<td>Canal &amp; West Sts</td>
<td>Hudson</td>
</tr>
<tr>
<td>Tompkins</td>
<td>1830</td>
<td>Bowery Rd &amp; 6th St</td>
<td>Inland</td>
</tr>
<tr>
<td>Jefferson</td>
<td>1832</td>
<td>Greenwich Ln &amp; 6th Ave</td>
<td>Inland</td>
</tr>
<tr>
<td>West</td>
<td>1858</td>
<td>Washington &amp; West Sts</td>
<td>Hudson</td>
</tr>
</tbody>
</table>

\[^a\] Closed permanently in 1821.

\[^b\] Closed permanently in 1829.


The physical space of New York’s public market facilities was highly regulated. At Catherine Market, for example, one end of “lower” market house contained room for the country market, although on busy days sellers spilled out into the surrounding streets. At nearby Fulton Market, the country people congregated under a roofed courtyard formed by the three wings of the market house. At Clinton and Washington Markets they gathered under open-sided sheds. Throngs of pedestrians moved through the market houses during peak hours. Maneuvering around cuts of beef and pork that hung low from the ceiling, past boxes of fruits and vegetables and fish in baskets, the market gave the appearance of a bazaar. Pungent odors filled the air; meat and fish, coffee, refuse as well as from the hundreds of women and men who hourly passed through the doors.  

New York’s public markets remained open six days per week, from midnight to noon Monday through Friday, and from midnight Saturday to midnight Sunday. They opened early in the morning for two reasons; technology and transportation. Since salability and price
depended on freshness, preservation was critical. In an era before mechanical refrigeration, producers relied on transportation and sale during the coolest part of the day, the early morning hours. Consumers willingly paid extra for quality, and demanded lower prices for

Figure 3.4 New York City's Country Markets, 1820-1860

anything less. Describing his desire to secure the best vegetables offered at Fulton Market, New York banker John Pintard wrote, "The difference of a single day is perceptible. Vegetables can only be tasted in perfection, gathered the same day. I can get asparagus, occasionally, cut the same morning by paying extra, 3d to 6d [3¢-6¼¢] a bunch." Both quality and price declined rapidly as the day wore on, and by seven o'clock only the picked-over leavings remained. Aware of this fact, fastidious consumers like Pintard finished shopping in the early morning.¹⁵

A trip to the retail public market in the early nineteenth century was no small affair. Agriculturists living within a few miles of the nearest country market departed at perhaps, some time between three and four o'clock in the morning. But for those women and men traveling ten, fifteen or more miles, a trip to market quickly became an all-night affair. There is much evidence to indicate that country roads and rural river landings were busy with city-bound farm traffic in the early morning hours. Invited to stay overnight at a dairy in upper Manhattan, the arrival of milkmen at 3:30 the following morning awakened Scottish visitor Patrick Shirreff. He observed that the men milked twenty cows in only ninety minutes and then "rushed" the milk to the city for sale at close to 5:00 A.M. Even 3:30 A.M. could be rather late for some farmers. In the late 1830s Daniel Lent, a Queens County farmer living in the town of Jamaica, (Figure 3.5) about fifteen miles from New York, left for Fulton Market at 1:00 A.M.¹⁶

Through the 1840s many -- probably most -- farmers and gardeners who attended the public markets arrived by boat. Poor road conditions and isolation, problems that effected farmers across rural America limited market access. In upstate New York farmers
circumvented the transportation problem by using waterways whenever possible. Yet except for lake traffic, attempts at poling and paddling only worked during periods of high water. In the Hudson Valley, around New York Bay, Long Island, the coast, and wide areas of northern New Jersey, farmers had access to navigable bodies of water. This effectively connected them directly to country markets in Newark, Brooklyn, Elizabethtown, New Brunswick, Brooklyn and New York City. Thus, farmers living near navigable watercourses tended to specialize in the production of items that could be retailed directly to urban consumers, such as fruits, vegetables, dairy products, eggs, poultry, fish and "small meats."
Proximity to the sea also served to tie agriculture and fishing economically and culturally. Farm diaries and secondary sources from across the Region indicate that farmers had more than a passing familiarity with the sea. There are frequent references to fishing as a commercial activity, to skilled use of the net, of boat use for daily farming activities, including of course, travel to market -- up to thirty miles one way. These observations in the historical record are important because along with production statistics they expand upon what Robert Albion has identified as a "maritime heritage" which pervaded rural life along the northeastern coast. Table 3.3 sheds light on the backgrounds of six men who attended New York's Washington Market in the 1840s. All six originated from counties with strong cultural ties to the sea. It is also significant that these men preferred small, sloop-rigged sailing vessels. These watercraft were designed to navigate both shallow tidal rivers and the deeper, less predictable open waters of the New York Bay area.

A true separation between agriculture and the sea did not occur until the 1860s or even later in some places. Up to that time, farm women and men came to market in canoes, row

Table 3.3 Selected Petitioners for Docking Rights at Washington Market, 1847

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Boat Name</th>
<th>Boat Type</th>
<th>Residence</th>
<th>Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard R. Bennett</td>
<td>Ocean Child</td>
<td>Periauga</td>
<td>New Utrecht (Kings)</td>
<td>Farmer</td>
</tr>
<tr>
<td>James Bowne</td>
<td>President</td>
<td>Sloop</td>
<td>Manaplan (Monmouth)</td>
<td>Farmer</td>
</tr>
<tr>
<td>John Dubois</td>
<td>Gazelle</td>
<td>Sailboat</td>
<td>Brooklyn (Kings)</td>
<td>Gardener</td>
</tr>
<tr>
<td>Joseph Ketcham</td>
<td>Revenge</td>
<td>Sloop</td>
<td>Oyster Bay? (Queens)</td>
<td>Farmer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Smithtown? (Suffolk)</td>
<td></td>
</tr>
<tr>
<td>Thomas Morford</td>
<td>Cyrus</td>
<td>Sloop</td>
<td>Middletown (Monmouth)</td>
<td>Farmer</td>
</tr>
<tr>
<td>John Holmes VanBrunt</td>
<td>Sop of the Dread</td>
<td>(b)</td>
<td>New Utrecht (Kings)</td>
<td>Farmer</td>
</tr>
<tr>
<td>James M. Walling</td>
<td>Wake</td>
<td>Sloop</td>
<td>Raritan (Somerset)</td>
<td>Farmer</td>
</tr>
</tbody>
</table>

a Actual petition contains thirty names.
b Not reported.

Source: DeVoe, The Market Book, 445; Seventh Census of the United States, 1850, Mss Schedule 1 (population), selected townships.
boats and “sloops” a generic term which identifies a sailboat by its rigging. A visitor to the farm of Elijah H. Kimball noted that Kimball and his neighbors used a nearby dock where:

Sloops, schooners and smaller craft can at all times land their cargoes; all kinds of market stuff can at little expense be carried to the city of New York, and articles of necessity, and particularly manure taken from the streets . . . can be brought back at a very cheap rate, thus affording a ready and easy way of communication to and from the city by water.

This statement, plus the information in Table 3.3 helps shed some light on how farmers and gardeners traveled to market. For example, the “periauga” *Ocean Child* used by Richard Bennett was essentially a large sailing canoe, of a type introduced to the New York area from the West Indies in the late eighteenth century. Thomas De Voe also cites numerous examples of the use of canoes as well as row boats (also called periaugas) by farmers attending the markets in New York. Queens County farmer Jacob Van Alst piloted a market boat for more than fifty years between his farm at Dutch Kills and the city of New York. Semi-retired and in his eighties, Van Alst made the seven to ten mile trip to Catherine Market in a rowboat. Decades of sailing in and around Newtown Creek and the East River gave Van Alst a knowledge of “the tides, currents, the time and place to cross, [and] when to hug the shore” and the elderly farmer arrived at the market even in the worst weather.19

Four of the farmers listed in Table 3.3 reported that they came to market in a “sloop.” Surviving farm records also include many references to the use of “sloops” to get to market. Although several popular types existed in the Region, the “New York Bay Sloop” held a position as a favorite because its operation required a small crew. Developed in the 1830s, and shown in Figure 3.6, this small centerboard vessel plied the waters from Long Island Sound to the Jersey Shore. An “excellent boat for protected waters,” a skilled captain could
sail this gaff-rigged vessel one in along shallow rural docks or safely up on to remote beach landings. Broad in beam, and ranging in length from eighteen to thirty-six feet, these boats displaced as little as fifty tons. Some farmers preferred a slightly deeper version designed for use on Long Island Sound, called the "Noank Sloop." Even larger boats like the "Long Island Sound Sloop," which ranged in length from fifty to seventy-five feet were also popular in

![Figure 3.6 “New York Bay sloop Laura built 1867 at Keyport, NJ”](image)


deeper waters and on the Hudson River, but few farmers piloted these because they required larger crews.  

Safe travel from farm to market and home again required technical skill and knowledge of local waterways, because a multitude of hazards awaited agrarian mariners. Inclement weather, such as fog, spring ice floes and summer squalls tested the most experienced pilots.
Knowledge of wind patterns and tidal schedules, the location of rocks, and knowledge of how to determine one's position in the open water (at night) were also necessary. In heading to and from the busiest seaport in the world farmers also carefully avoided larger, faster boats and steamers that might not see (or care) that they were on a collision course with a canoe, rowboat or small sloop. The final approach to lower Manhattan could be extremely hazardous as market boats powered by wind and oar ran gauntlets of powerful steam ferries that sped across crossed both river and the bay at intervals of five to twenty minutes. Finally, except for the months of June and July these trips were made in the darkness of the early morning hours.\textsuperscript{21}

Farmers possessed an understanding of local and regional tidal conditions out of necessity, and timed their departures carefully. Under ideal conditions market boats departed with one tide and returned on the other. A delay of even an hour could add considerable time to a trip. Almanacs included, in addition to meteorological predictions, estimated "high water" times for New York and other coastal cities. Armed with this single number and the understanding that peak tides occur at roughly twelve-hour intervals, but at times varying by approximately one hour per day, country people planned their trips to market. Table 3.4 lists four trips made by a market boat from Long Island to Manhattan. Based on the location of

\begin{table}[h]
\centering
\begin{tabular}{lcccccc}
\hline
\textbf{Day} & \textbf{Date} & \textbf{Tides} & \textbf{Tide} & \textbf{Tide} & \textbf{Departure} & \textbf{Type} \\
\hline
Tuesday & 10 June & Lo & 1:48PM & Hi & 7:48PM & Afternoon & Flood \\
Monday & 4 August & Lo & 10:30AM & Hi & 4:27PM & Afternoon & Flood \\
Saturday & 6 September & Lo & 1:00AM & Hi & 7:00AM & Morning\textsuperscript{*} & Flood \\
Wednesday & 15 October & Hi & 1:41AM & Lo & 7:45AM & Morning\textsuperscript{*} & Ebb \\
\hline
\end{tabular}
\caption{Voyages of the Sloop \textit{Dread} from Yellow Hook to New York City, 1828}
\end{table}

\textsuperscript{*} Departures took place “after breakfast.”

\textit{Source:} Diary of Adriance Van Brunt, Brooklyn Historical Society.
the farm it was desirable to depart for New York on the flood (incoming) tide. That three of
the four departure times correspond with this tide suggests that the owner, farmer Adriance
Van Brunt, planned his marketing based on the tides. Market-goers could generally plan on
two weeks of favorable tides per month. Well-timed weeks alternated with less favorable
ones during which farmers and gardeners could expect a longer trip or to arrive at their
destination either earlier or later than under ideal conditions. The schedule compelled
farmers attending New York’s Fly Market (1706-1821) to sometimes arrive early in the night
and wait, without benefit of cover for dawn and the opening of the market. By the mid-
nineteenth century such limitations would become unacceptable to both producer and
purchasers.22

Despite New York’s reputation for its excellent harbor, a combination of topography and
underwater currents sometimes made sailing rough for small craft. Shown in Figure 3.7,
portions of New York Bay, plus the “Narrows,” Kill Van Kull, and the mouth of the Raritan
River all experienced periodic tidal surges. Sudden squalls tested the skills of farmer-
fishermen on the open waters of Long Island Sound, New York Bay and the Hudson’s
Tappan Zee. Powerful currents buffeted boats on the Hudson River, at “Spuyten Duyvil” and
farther upstream at the “Highlands” where erratic cross winds also plagued travelers. Yet the
most well-known and dangerous natural hazard - finding mention in numerous travelers’
accounts - is the “Hell Gate,” a strait connecting New York Bay to Long Island Sound.
Traffic bound for Westchester, Queens and Suffolk Counties, as well as Connecticut and
New England passed through this narrow portion of the East River. Like a nineteenth century
Odysseus, mariners cautiously maneuvered their boats around a series of submerged rocks, while simultaneously taking care to avoid capture in the long arms of giant whirlpools caused by opposing tidal currents. Boats under sail pulled into a vortex became impossible to control and helplessly "twirled about in a most extraordinary manner."\textsuperscript{23}
Others than just the farm husband or wife carried produce to market. Household members participated in a variety of marketing arrangements that included sending hired hands, slaves, children, beneficent neighbors and others to market. Characterized by long nights and sometimes arduous journeys, repeated loading, unloading and dealing with the public, it is no surprise that farmers did not travel to markets alone. The evidence indicates that relatives frequently pooled resources and traveled to market together. For example, Albert Van Brunt who had marketing of his own to conduct, often accompanied his uncle’s foreman John Dye Walling on trips to Washington Market. Betsey and John Crane and their young daughter also made the twelve-mile trip together at night to sell butter and cucumbers at the public market at Elizabethtown, New Jersey.24

Agrarian retailers often filed petitions with the City of New York regarding business conducted at the public markets. The repetition of certain surnames in these documents is striking and suggests that many of the petitioners may have been related. A hypothesis that same-surname petitioners who signed in consecutive order and live near one another are related, may be tested using the federal manuscript census schedules. Table 3.5 contains the results of this analysis. A subset of petitioner names was drawn from four documents spanning twenty years and then located in the federal census schedules. Assuming that proximity within a census schedule equates to living nearby, the majority of petitioners examined were indeed related.

Farmers also shared marketing responsibilities with neighbors. For example, the mother of diarist Jane Keteltas traveled from the family farm on Staten Island to New York City almost every day. Sometimes she traveled with a neighbor Jane called “Old Maid” Simons.
Table 3.5 Petitioners with Identical Surnames

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Petition</th>
<th>Year</th>
<th>Township (State)</th>
<th>Location in Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles De Bevoise</td>
<td>A</td>
<td>1828</td>
<td>Bushwick (NY)</td>
<td>Same page as Jacobus</td>
</tr>
<tr>
<td>Jacobus De Bevoise</td>
<td>A</td>
<td>1828</td>
<td>Bushwick (NY)</td>
<td>Same page as Charles</td>
</tr>
<tr>
<td>Abram Debaun</td>
<td>B</td>
<td>1843</td>
<td>Clarkstown (NY)</td>
<td>Same page as C.A.</td>
</tr>
<tr>
<td>C.A. Debaun</td>
<td>B</td>
<td>1843</td>
<td>Clarkstown (NY)</td>
<td>Same page as Abram</td>
</tr>
<tr>
<td>William D. Haring</td>
<td>B</td>
<td>1843</td>
<td>Harrington (NJ)</td>
<td>Precedes Daniel by 4 pages</td>
</tr>
<tr>
<td>Daniel J. Haring</td>
<td>B</td>
<td>1843</td>
<td>Harrington (NJ)</td>
<td>Same page as Isaac</td>
</tr>
<tr>
<td>Isaac J. Haring</td>
<td>B</td>
<td>1843</td>
<td>Harrington (NJ)</td>
<td>Same page as Daniel</td>
</tr>
<tr>
<td>Cornelius J. Haring</td>
<td>B</td>
<td>1843</td>
<td>Harrington (NJ)</td>
<td>Page following Isaac</td>
</tr>
<tr>
<td>James Way</td>
<td>C</td>
<td>1844</td>
<td>Newtown (NY)</td>
<td>Precedes Abraham by 13 pages</td>
</tr>
<tr>
<td>Abraham Way</td>
<td>C</td>
<td>1844</td>
<td>Newtown (NY)</td>
<td>Precedes John by 5 pages</td>
</tr>
<tr>
<td>John L. Way</td>
<td>C</td>
<td>1844</td>
<td>Newtown (NY)</td>
<td></td>
</tr>
<tr>
<td>Garret G. Oldis</td>
<td>D</td>
<td>1846</td>
<td>New Barbadoes (NJ)</td>
<td>Same page as John</td>
</tr>
<tr>
<td>John G. Oldis</td>
<td>D</td>
<td>1846</td>
<td>New Barbadoes (NJ)</td>
<td>Same page as Garret</td>
</tr>
</tbody>
</table>

On other days Mrs. Keteltas did not attend the market and she "sent her things" with Ms. Simons. New Jersey farm diarist Betsey Crane also carried butter to the Elizabethtown public market for a neighbor, the widow Mrs. Bailey, and for her adult daughter Orpha. The shared arrangements made within the Van Brunt family have already been mentioned.\(^{25}\)

The marketing arrangements made by Samuel and Anne Megie are of special interest because of their complexity. Although Samuel worked as a sail maker in Manhattan, he and Anne lived on a sixty acre farm, twenty-five miles to the east of New York. Samuel commuted to work once a week by rail to Jersey City and then by ferry to New York. His
brother Daniel H. Megie, an accountant, and sister-in-law Jane lived in Jersey City. In all likelihood, this is where Samuel spent his nights during the week.²⁶

In addition to a wholesale trade with several local stores and retail trade with her neighbors, Anne Megie shipped large quantities of butter and eggs to her sister-in-law Jane who presumably disposed of it in New York. Samuel served as the primary carrier. Table 3.6 contains a sample of these transactions from the Megie diaries that shows Anne sending items to Jersey City with her husband on his way to New York. After Samuel left the sail-making business in May 1862, various family members acted as carriers. On at least one occasion Anne also shipped the items to her sister in law. The Jersey City relatives also picked up items during their social visits to the farm.²⁷

The original intent of the public market was to reserve a place where producer and consumer could come together for trade. Under these expectations, New York’s public markets worked well from the seventeenth century through the first quarter of the nineteenth. But after 1825 old problems which had plagued the markets for years, plus a new set of challenges began to take a toll on the antiquated system. Although the City attempted to respond, the dedication which once existed now lacked, and changes in the character of city government made market reform politically unpalatable. Besides these political problems, unprecedented population growth overwhelmed the entire system. By 1850 an entirely new marketing scheme based on a centralized wholesale market and private retail distribution system was in the making.

From 1810 to 1870, the population of the City of New York grew from less than 100,000 to nearly 1,000,000. All through this time the largest city in the hemisphere
Table 3.6 Selected Farm Produce Shipments from Anne Megie to Jane Megie

<table>
<thead>
<tr>
<th>Date</th>
<th>Item</th>
<th>Method of Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 February</td>
<td>12 lbs butter</td>
<td>Samuel, to NYC</td>
</tr>
<tr>
<td>12 March</td>
<td>49 eggs</td>
<td>Samuel, to NYC</td>
</tr>
<tr>
<td>26 March</td>
<td>7 lbs butter</td>
<td>Samuel, to NYC</td>
</tr>
<tr>
<td></td>
<td>72 eggs</td>
<td></td>
</tr>
<tr>
<td>10 April</td>
<td>12½ lbs butter</td>
<td>Samuel, to NYC</td>
</tr>
<tr>
<td>2 June</td>
<td>10 lbs butter</td>
<td>By rail, to Aunt Jane</td>
</tr>
<tr>
<td>30 June</td>
<td>72 eggs</td>
<td>Uncle Halsey, returning from visit</td>
</tr>
<tr>
<td>22 August</td>
<td>6½ lbs butter</td>
<td>Anne, to NYC</td>
</tr>
<tr>
<td>13 September</td>
<td>6 lbs butter</td>
<td>George, to NYC</td>
</tr>
<tr>
<td></td>
<td>80 eggs</td>
<td></td>
</tr>
<tr>
<td>6 November</td>
<td>11½ lbs butter</td>
<td>Samuel &amp; Anne, to NYC</td>
</tr>
<tr>
<td>2 December</td>
<td>11 lbs butter</td>
<td>Aunt Jane, returning from visit</td>
</tr>
<tr>
<td></td>
<td>1 pair ducks</td>
<td></td>
</tr>
</tbody>
</table>


maintained no more than fourteen public markets. Some effort was made to catch up before 1840. According to Figure 3.8, the Common Council nearly doubled the number of public markets and more than doubled the number of country markets between 1810 and 1835. But the national fiscal crisis of the late 1830s ended new construction, and by the recovery of the early 1840s, political support had eroded for continued expansion of the retail market system. From the 1840s forward the Council shifted its resources to small expansion projects such as the construction of new sheds at the Washington country market in 1843 and 1847, and limited maintenance of existing structures. This body also authorized the construction of one new market in the 1840s, one in the 1850s, and one in the 1870s to compensate for the closure of unprofitable markets. The reasons for resistance to expansion of the public/retail marketing system on the part of city aldermen merits its own study. Most important are concerns about increasing expense, personal political agendas and growing support for the establishment of a private/wholesale marketing system.28
While land acquisition and construction costs remained relatively low at the turn of the century, by the late 1820s real estate and market construction costs had more than doubled. Considering current population growth trends, unabated expansion of the system raised serious concerns about future expenses, given the scores of markets that would eventually be required. The markets also removed valuable properties from the tax rolls. In 1862 the land upon which New York’s twelve markets sat was worth 1.3 million dollars. Municipal construction projects also seemed to attract special problems of their own. Expansion projects in the 1840s that involved gradual extension of Manhattan’s western shore into the Hudson River to create land for a new market, brought protests from boatmen forced to sacrifice of dock space for land. Another project brought on a protracted legal battle with two individuals who alleged that the city built over water lots which they had leased from the state. Not surprisingly, the two sued the City for thousands of dollars in damages and back rent.39
The public retail markets also foundered due to city politics. Continued expansion of the market system would have served to increase the power of the Markets Department, a change that some aldermen opposed. In the 1850s, Streets and Lamps Commissioner Herman Childs, who oversaw the operations of the Markets Department actually moved to close some markets and spearheaded opposition to the construction of new ones. Even the Mayor opposed the system as it currently existed. In February 1856 Mayor Fernando Wood announced that the current system ought to be “abolished” and replaced with a new one.30

Besides slowing construction of new markets, city officials demonstrated their flagging interest in the retail market system by reducing maintenance to a bare minimum, creating “unmitigated nuisances . . . in the last stages of dilapidation, [which] from without present the most ungainly spectacles to be witnessed in New York.” For example, reports made over the years regarding Catherine Market indicate that it seldom stood in good repair. In 1825 the Market Committee of the Common Council noted that the twenty year-old “lower” market house, site of the country market was “a mere shell, in a ruinous state, and not worth preserving.” The City repaired the building, but in the mid-1840s the Clerk of the market testified before Council that the entire market was “in filthy condition and wants repairs and cleaning.” Not ten years later, an observer described the nearly seventy year old upper market house as an “old, dilapidated, sombre-looking, rat-infested and rat-undermined . . . festering sore.” At one point maintenance conditions grew so bad that the farmers sometimes preferred selling in the streets surrounding the market house rather than being forced inside.31

The situation at Catherine Market was not unique. Poor maintenance and structural problems plagued the system. A twenty foot-wide dirt pathway between two sections of
Jefferson Market became so thick with mud during rainstorms that consumers had difficulty crossing until the Council finally ordered the two halves joined by a covered platform. At Washington Market, a portion of West Street along the Hudson River located below the level of the river flooded during high tide to the degree that it became “frequently impassable to foot passengers” who attempted to access the country market. Rural retailers submitted numerous petitions to the Common Council over the years but redress, if and when it finally came, usually lacked. This is one reason why farmers turned to wholesale dealers, starting in the 1840s.\(^32\)

Overcrowding also posed a serious problem in both the market houses and country markets. The scenes in Figures 3.9 and 3.10 support contemporary descriptions indicate that throngs of buyers, and sellers, as well as performers, thieves, pickpockets and wagons so crowded the country market that traffic sometimes came to a standstill. Regarding conditions in the vicinity of Washington Market, one observer wrote that West Street was “so filled with Carmen, Grocers and Country Carts and wagons as to be difficult to cross even on foot.” Concerned about his loss of business because of arcane regulations and long lines at the central scale, Thurston Mabbitt, a Fulton Country Market stand holder claimed that in order to get to the scales at the center of the market, he was “obliged to pass across the middle row and that often filled with country Baskets and Boxes of Mutton, Poultry & etc.” Even after arriving at his destination, he encountered more delays, “for when I get to the scales, he will be weighing calf skins or veal or mutton & etc. - for which I have to wait, of course.” As a recent study of retail trade in New York City has shown, the overcrowding problem created opportunity for private retail grocery stores to divert business from the public markets.\(^33\)
Figure 3.9 Washington Market Scene, 1872

Corruption also served to drive farmers from the retail market. Corruption on the part of the market Clerks or their assistants, who handed hundreds of dollars in fees had always been a problem. But in the 1830s and 1840s the reached new heights through the illegal sale of stand leases. These leases extended from one to five years, depending on type and its location. For example, three year stand leases at Fulton Market house sold at auction for thirty to sixty dollars each per year. Other less desirable spaces went for an average of twenty-three dollars each. As shown in Table 3.7, market fees and stand leases amounted to rather hefty sums, and strong temptations existed for misreporting revenues. For instance, market observer Thomas DeVoe calculated in 1858 that the city received only $1,000 per week in fees from Washington Market, a figure far lower than what it ought to have been, considering the size of the market. Critics like DeVoe charged that corrupt market Clerks publicly auctioned off only some eligible stands and secretly sold the rest on the black market. These purchasers quietly paid the permit fees to give the appearance of a legal sale.

Table 3.7 New York’s Public Market Receipts\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>1813</th>
<th>1830</th>
<th>1836</th>
<th>1842</th>
<th>1844</th>
<th>1857</th>
<th>1861</th>
<th>1865</th>
<th>1869</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fees</td>
<td>7,000</td>
<td>20,000</td>
<td>21,000</td>
<td>28,000</td>
<td>27,360</td>
<td>78,001</td>
<td>61,839</td>
<td>(b)</td>
<td>(b)</td>
</tr>
<tr>
<td>Stand Rent</td>
<td>(b)</td>
<td>35,000</td>
<td>21,000</td>
<td>11,000</td>
<td>15,911</td>
<td>15,278(^c)</td>
<td>76,479(^d)</td>
<td>(b)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7,000</td>
<td>55,000</td>
<td>42,000</td>
<td>39,000</td>
<td>43,271</td>
<td>93,279</td>
<td>138,318</td>
<td>178,894</td>
<td>350,025</td>
</tr>
</tbody>
</table>

\(^a\) Cellar rentals not included.
\(^b\) Value not reported.
\(^c\) Butcher stands only.
\(^d\) Stand rent for West Washington Market (opened 1859) $58,432.

but re-sold the leases to third parties and remitted a kickback to the market Clerk who looked
the other way. They could cheat other ways as well. The *New York Atlas* charged that one
market Clerk "gave" fifteen permits to an associate who subsequently erected stands and sold
both stand and permit for $400 to $1,000 each.\(^{34}\)

The failure of the City to control corruption in the stand auction system effected farmers
because it set a tone that the Council tolerated such illegal practices. A set of violations
grouped under the term "forestalling" created the biggest headaches for farmers and
gardeners. Forestalling, meaning "to interfere in any way with trade so as to cause prices to
rise or fall unnaturally, as by buying and holding marketable produce in order to create a
scarcity on the market" was not new in the nineteenth century. Yet the City's lack of success
in battling it, is an important reason why farmers ceased attending the retail markets after
1850. Although contemporary observers never said so, in retrospect we can see that the
forestallers were really trying to forcibly convert the retail market into a wholesale market.\(^{35}\)

One of the most effective ways forestallers attempted to create a "scarcity on the market"
was by reducing the number of retailers, a method I call *forestalling by occupation*. In this
aggressive tactic individuals working singly or in groups attempted to occupy as much space
as possible in the country markets in order to crowd out legitimate sellers. Figure 3.10
illustrates the haphazard organization of the Washington Country Market. By arriving early
and taking the best spots, the forestallers gradually concentrated the farmers into smaller and
smaller spaces and in some instances pushed them out of the market altogether. In this
fashion many country people removed from the Washington country market in 1842, and
their places turned over to "forestallers and agents" and "persons with foreign dialect[s]."\(^{36}\)
Contemporary sources relating to the situation in Washington Market indicate that officials allowed this process to continue but that they also supported the construction of a new shed for use by the country people. This building opened in the spring of the 1843, yet by the end of the year the rural retailers had again been pushed out by various persons to whom (the complainants charged) the Clerk of the Market had leased the spaces! The following season, nearly 300 Bergen County agriculturists requested direct intervention on their behalf by the City Council:

We the undersigned Farmers and Gardeners of the State of New Jersey, having been Accustomed to bring our produce to the Washington Market . . . humbly petition your Honors for the purpose of obtaining a place where we can peaceably dispose of our produce having been driven from our Market and Nothing to protect us from the Scourching Sun or the Stormes and compelled to every inconvenience and insult. 37
Prevented from entering the market, these farmers and gardeners parked their wagons or stacked their baskets in any available open space, such as in the streets and along sidewalks surrounding the market. This brought a storm of protest from local merchants whose stores they blocked. Forty-six “Citizens and Occupants of Stores” near Washington Market charged: “The Market Waggons from the Country take possession of the Street opposite our respective Stores at the Dawn of Day, and so completely blockade the Street, as to shut out the Carts and Waggons of our Customers.” Since many mercantile firms devoted to the wholesale trade were located in the vicinity of Washington Market, the genuity of such a claim might be questioned. But the words of thirty somewhat more sympathetic merchants who wrote to the Common Council in 1847 indicate that “the State of things in the Washington Market . . . has become intolerable.” In addition,

Your petitioners ask that a portion of the Market may be set apart for the exclusive use of the Country people who are now excluded by a set of dealers in Country produce that appear to hold their stands by the year, and occupy them with Articles not belonging to market produce, many of the stands are frequently not occupied but if a Countryman offer to use them he is told he must find another place, as that one they pay for.

In response the City embarked upon a long-term shoreline extension project by filling in between Hudson River piers twenty and twenty-three. In the summer of 1847 the City opened two new sheds for the farmers, both well away from the Washington Market house. Here they relocated the country market, along with “a small settlement of Hucksters” who crowded the slip with “various scows containing vegetables produce of various kinds.” In the late 1850s this site became home of the new West Washington wholesale market.38

How did the farmers and gardeners respond to those who engaged in forestalling by occupation? Upon the discovery of a full market, some rural retailers refused to find a place
outside. Tempers raged, given the early hour, and the difficulties and frustrations that must have accompanied the process of finding an open space. Agriculturists who arrived by boat must have felt additional pressure due to their having to depart at a certain time with the tide. Thomas De Voe wrote that some farmers would simply pull up in front of the stand of a known forestaller in an attempt to block him or her, a move resulting in "warm words" between the two parties. At a minimum, these situations resulted in arguments between farmers and "butchers and speculators, who are very abusive [and] crowd us into the walks." Sometimes these situations turned violent, with the rural retailers being "assailed" by "speculators" who "occupy every available space with boxes." Stubborn farmers faced having their produce "upset and in some cases destroyed."39

Farmers and gardeners could not expect much assistance from aldermen dedicated to replacing the entire system or the corrupt market clerks with pockets lined with kickbacks. A group of farmers reported that Clerk of Washington Market had informed them that they would have to "make do" with the limited space available. Rather than "make do" or sell to the forestallers at wholesale prices, many farmers parked their carts on sidewalks, pulled up in front of stores and residences or simply parked in an adjacent street where they sometimes blocked traffic. Such sales, being outside the market were technically illegal, although this regulation went unenforced. By 1850 forestalling by occupation had convinced many rural retailers to seek wholesale markets for the sale of their produce.40

A second method of forestalling the market, which I call forestalling by deceit involved tricking farmers and gardeners into selling at lower than market prices. Men and women working alone or in groups misrepresented themselves as merchants or "agents" representing
legitimate wholesale firms. Seeking out farmers and gardeners on lonely highways, roadside
taverns and boat landings where a brisk pre-market trade already took place, they attempted
to dupe the rural retailer. A typical ploy involved the forestaller making casual conversation,
peppered here and there with fraudulent market intelligence designed to confuse the farmer.
Sometimes the forestallers even made an offer, to be settled up later at the market. In reality,
the con hoped the seller would set prices too high out of confidence that the person met hours
earlier would show up and make good on his or her original offer. Unfortunately for the
farmer, prices only fell as it grew later in the morning. Of course the confidence man never
showed up and, reluctant to return home laden with produce, the farmer eventually sold out to
purchasers who drove hard bargains for prices below what the farmer had refused hours
earlier. Little did the agrarian retailer know (although surely some suspected) that at least
some of these buyers were confederates of the individual encountered on the road or dock
hours earlier. This scheme may sound rather foolish to modern readers, and the farmers
perhaps a bit too gullible, but given the evidence that so many fell for the ploy so frequently
suggests that many similar, but legitimate deals were struck in the early morning hours while
in transit to the marketplace.41

Deceitful forestallers did not limit their tactics only to isolated highways in the night.
Ingenuine offers and price misquotations made the market a dangerous place for the unwary.
For example, in the spring of 1827, Joseph Strong arranged to sell some sheep to a New York
butcher named Geary. He hired Captain Kinner, a trusted friend to transport the animals to
the butcher and close the deal. Yet upon his arrival in New York, Kinner ran afoul of a
forestaller’s trick. According to Strong:
Kinner says when he brought the Sheep over and before Geary sent for them, he was offered 20/ [$2.50] a head for them. I asked Geary a few days since what he thought of allowing for them he said $2 a head. I then told him what Kinner was offered for them - he said there certainly must be some mistake about it, as no Butcher could give that price for them - he thinks the offer must have been in this way - Butchers to plague one another will when they find any Stock sold or sent to any one, offer the Owner considerably more than it is worth when they know that it is already engaged - he says this is a common trick of the trade -

Whether Joseph Strong believed butcher Geary that this was really a trick of the trade is not clear. Apparently it did not matter, because he decided to try and take advantage of the situation by pushing butcher Geary for the higher price. Commenting on the claim that the offer of twenty shillings was a ruse, he wrote "this may be so, or not - at any rate I shall hold him to 20/ and get as near it as I can." Shrewd dealings were not only reserved for the forestallers. 42

Some farmers, frustrated with the ways in which forestallers limited their retail trade, engaged in what I call forestalling by consent. Essentially an example of the old adage "if you can't beat 'em, join 'em" in this situation farmers met with the forestallers or hucksters outside city limits and sold them their produce at wholesale prices. It is these transactions where farmers were sometimes tricked by deceitful speculators. Others farmers hired "agents," sometimes known forestallers, to sell on their behalf in the marketplace. The city moved to regulate the designation of agents in the 1840s, but since clever forestallers dressed and spoke in the manner of the country people, market clerks had difficulty identifying them. Forestalling by consent offered advantages to both parties. For producers, it meant that he or she did not have to attend the market. It also permitted forestallers to achieve their goal of "causing prices to rise" by buying wholesale and selling retail. While this option offered
obvious attractions, it did not become the new marketing strategy of the 1850s. Instead, changes in the American economy brought about the emergence of a new wholesale market. By 1860, farmers had other options to the retail marketplace.  

Although escaping the attention of many historians, retail transactions made up an important part of farm income in the early nineteenth century. Farmers and commercial gardeners sold directly to the public at the farm gate, through peddling and by selling at municipal public markets. The reason for this is that in the relatively dense population of the New York City Region, the frequent villages and scattered large towns and cities, agriculturists found no shortage of customers who preferred buying directly from the producer. Except during times of national financial crisis, the majority of these retail transactions involved cash. This is significant given that previous studies of the rural economy of the northeastern United States emphasize the non-cash aspects of retail trade before 1850. 

Beginning in the 1840s, changes in the local and national economies encouraged the development of an urban-based wholesale market. The growth of this market and its function are discussed in Chapter 4. Rural retailing declined, although unevenly. Some farmers and gardeners continued to engage in farm gate sales since they required expenditure of little effort on the part of the farmer compared to the returns. A few also continued to peddle farm products under the narrow circumstances that directed this form of retail trade. The most significant change in rural retailing involved the decline of urban public retail markets which many farmers and gardeners patronized. Simply put, the public markets fell victim to changing times. When surging immigration boosted urban population levels to
unprecedented heights, reluctant to build more markets, municipalities like New York allowed their deteriorating market houses to be overwhelmed with crowds of consumers. Political infighting, rooted in the debate over the future of the retail markets served to stymie any real reform from the public sector. Private initiative, through the expansion of the retail grocery sector of the economy filled the void. These grocers bought on the wholesale market. Finally, rampant corruption in the markets literally drove frustrated agriculturists out of the retail markets and into the arms of a growing class of wholesale merchants. By 1860 these merchants controlled not only the trade from urban and near-urban farm trades, but also much of the national produce trade.
Notes


2 Today farm gate sales are recognized as an important source of income for small farms near urban areas. Ralph E. Heimlich and Douglas H. Brooks. "Metropolitan Growth and Agriculture: Farming in the City’s Shadow," USDA Agricultural Economics Report 619 (September, 1989): 4-6; John Wall, "Finding the Common Ground," *PennState Agriculture*, (Spring/Summer 1997): 15; Surely some of the persons mentioned in the farm account books and not “ultimate consumers” but middlemen. This does not diminish the importance of farm gate sales; For examples of farm gate sales, see Diary of Rebecca Vail 12 March 1847, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey; Abridged entries, 1831-1832, Noah Youngs Day Book contain repeating names of men with whom Youngs conducted a retail business. Noah Youngs Day Book, Typescript. Hallockville Museum Farm, Northville, New York; Account Book of John C. Ditmas, 29 March 1838, 2 January 1844, Brooklyn Historical Society; Diary of Adriance Van Brunt, 25, 26, 28 August 1828, various entries for November 1828, New York Public Library, Manuscripts Collection; Journal and Account Book of James Hawxhurst, 9 February 1827, New York Public Library, Manuscripts Collection; Diary of Jane Ursula Merrell Keteltas, 18 June 1864, Merrell Sisters Papers, Folder 9, MS-38, Staten Island Historical Society; Farm Account Book of John H. Wicks, 12 April 1857, Huntington Historical Society; Seventh Census of the United States, 1850, Mss. Schedule 1 (population), Huntington, New York, microfilm, Newberry Library, Chicago; Daybook of James S. Cory, 25 June, 1840, MG-19, New Jersey Historical Society, Newark; Seventh Census, Mss. Schedule 1, West Orange, New Jersey.

3 On urban requirements for hay and oats see New York State Agricultural Society (hereafter NYSAS), *Transactions of the New York State Agricultural Society for the Year 1841* 1 New York State Assembly Document 131 (Albany: T. Weed, 1842), 157; and, NYSAS, *Transactions* 3 (1843) New York State Assembly Document 115 (Albany: Carroll and Cook, 1844), 463; According to Paul Gates, Hinton Helper claimed that the volume of hay sold in small quantities to cities made it the true “king” of all crops. Gates, *Farmer’s Age*, 249, 252;
Diary of Samuel Megie, Jr., 5, 6, 19 May 1862, New-York Historical Society; Henry Parkhurst sold large quantities of salt hay on a regular basis to likely Newark stable owners. Henry Parkhurst Account Book, March-April 1835, MG-150, New Jersey Historical Society; Elisha Wells Account Book, March 1833, January 1834, Typescript, Hallockville Museum Farm, Northville, New York; Account Book of John C. Ditmas, July 1837 - August, 1840; Sometimes delivery was included in the sale, see Diary of Adriance Van Brunt, 25, 26 August 1828.

4 Account Book of James H. Weeks, vol. 2, 3 April 1846, 17 September, 13 November, 5 December 1849, Manuscripts Collection, New York Public Library; Weeks charged the railroad heavily for his services. At 44 cents per bushel for oats, they paid 10 cents over the going market rate. S.E. Ronk, “Farm Prices in New York State, 1841 to 1935,” Cornell University Agricultural Experiment Station Bulletin 643 (1936): 49.

5 Elizabeth Mulford Crane Diary see various entries for December 1826, 28, 29 December 1827, 2 January 1828; John Disturnell, A Gazetteer of the State of New York (Albany: J. Disturnell, 1842), 176.

6 Wicks may also have peddled turnips. Diary of Selah Wicks, 24, 28 October, 13 November - 6 December 1855, Suffolk County Historical Society. On April 4, 1856 Wicks began to dig up the cabbages for sale in Brooklyn or New York; Lucius Hallock cut and peddled 500 cabbages over 2 days in November rather than selling them in the usual Connecticut markets. He does not say why he chose to sell them this way, but it may have been because of rough weather on Long Island sound, or because these were too few cabbages to make the trip worthwhile. Like Wicks, this is the last harvest activity of the season. Halyoke Farm Diary, 27-28 November 1876, and 17-24 November 1877, typescript, Hallockville Museum Farm, Northville, New York; Not comments about freezing of the ground. On burying cabbages see entries from 21-27 November 1874.


9 For details on the Long Island strawberry season see Halyoak Farm Diary, 15 June - 3 July 1877. For peddling and weather references see 22-23 June 1877.

10 No histories of the public markets for municipalities in the Region other than New York have been written. An ambition project was undertaken by Manhattan butcher Thomas F. De Voe in the mid-1850s to write the histories of the markets in New York, Brooklyn, Newark, Philadelphia and Boston. Unfortunately, De Voe completed only one volume of this series *The Market Book* (1862) which provides a detailed history to 1860. Only shreds of information are available on public markets outside New York. City business directories, guidebooks, and state gazetteers provided some statistical information. Readers should also consult the *Tenth Census* (1880) Social Statistics volumes (note 11), which provide some information on municipal public markets. For an overview of early market legislation in New York City see Arthur Everett Peterson *New York as an Eighteenth Century Municipality Prior to 1731* Studies in History, Economics and Public Law 75 no. 1 (New York: Columbia University Press, 1917), 56-63. After 1731 the Common Council passed a series of new regulations and replaced the per diem stand fee with long term renewable leases which ranged from 1 to 5 years in length. Since farmers and gardeners did not sell year-round they did not lease stands and moved from the "public market" to the "country market" where per diem fees still existed. George William Edwards, *New York as an Eighteenth Century Municipality, 1731-1776* Studies in History, Economics and Public Law 75 no. 2 (New York: Columbia University Press, 1917), 64-7, 78-83; Eugene P. Moehring, *Public Works and the Patterns of Urban Real Estate Growth in Manhattan, 1835-1894* (New York: Arno Press, 1981), 193-94.


22 De Voe, Market Book, 310, 489; Carmer, The Hudson, 143; Longworth, American Almanac [1827], 8-18. Almanacs, city directories and farm journals included tide tables among the meteorological data they published.


24 De Voe, Market Book, 369-70, 408; Kings County farmer John Bergen sent hired farm hands to market, although given the late date, it is likely they were making deliveries to wholesalers and not retailing to the general public. Account Book of John C. Bergen, 29 June 1865, 23 August 1865; During John Dye Walling’s absences, Van Brunt’s nephew Albert carried his uncle’s produce to market by himself. Diary of Adriance Van Brunt, 6 September, 24 September, 15 October 1828. My claim of Albert’s kinship is an educated guess based on entries in the Van Brunt diary. See 10 June, 20 June, 4 October, 15 October 1828; Diary of Elizabeth Mulford Crane, 20 June, 15 August 1826; Valentine Velsor and his brother-in-law “Ess” traveled together on day trips to New York by train to sell hay. Letters from Ruth Velsor to Elizabeth Van Cott, 27 December 1861, 25 August, 16 September 1863, box 5, Velsor Papers, Long Island Studies Institute, Hofstra University Library, Hempstead, New York.

25 Woman farmers and gardeners retailed farm produce in the public markets through the first half of the 19th century, but references later than 1850 (i.e. wholesale) are sparse. On the “Jersey Dutch” women who patronized the markets through the 1830s and wore “linsey-woolsey short gowns and petticoats” see De Voe, Market Book, 408. On farm women receiving awards for butter (pp.408-09). On huckster-gardeners (pp.423-24); A telling petition to the New York Common Council reported that countrymen “cannot send their wives and daughters with butter and eggs as formerly.” Petition of Peter A. Meiser and Others, 9 September 1844, City Clerk’s Papers, Markets Folder, MARC; Jane Keteltas’ father was an alcoholic who did not work. Her mother made daily trips from the family farm to New York City, which I believe were to the public market. See entries for July and August, and 27 September 1855 in Diary of Jane Ursula Merrell Keteltas; Diary of Elizabeth Mulford Crane 28 June 1828; On women (nonfarm) retailers in the public markets see Beal, “Selling Gotham,”387; Haswell, Reminicences, 35 and De Voe, (pp.423-24, 585).

26 Seventh Census, Mss. Schedule 1, New Providence, New Jersey; Seventh Census of the United States, 1850, Mss. Schedule 4 (agriculture), microfilm, New Jersey State Archives, Trenton; Eighth Census of the United States, 1860, Mss. Schedule 1 (population), microfilm, New Providence, New Jersey, microfilm, Newberry Library, Chicago; Eighth Census of the
United States, 1860, Mss. Schedule 4 (agriculture), microfilm, New Jersey State Archives, Trenton; Diary of Samuel Megie Jr., January-April 1862; Diary of Samuel Megie Sr., 18, 20 September 1862, New-York Historical Society; Eighth Census, Mss. Schedule 1, Jersey City Ward 3, New Jersey.

27 The Daniel H. and Jane Megie household consisted of only three people, which suggests to me that they could not consume all the produce received from the farm. Eighth Census, Mss. Schedule 1, Jersey City Ward 3, New Jersey. Diary of Samuel Megie Jr., 3 May 1862.


29 Moehring, Public Works and the Pattern of Urban Real Estate Growth, 196-97, 199; Building regulations prohibiting new wood construction also increased building costs (pp.5, 7); The estimate that "scores" of markets would be required is my own.; Valentine, Manual for 1863, 179; De Voe, Market Book, 445, 450-53.

30 Moehring, Public Works and the Pattern of Urban Real Estate Growth 198, 199, 201, 202-03; Stokes, Iconography, 5: 1805, 1871.

31 Moehring, Public Works and the Pattern of Urban Real Estate Growth, 196, 198; McCabe, Lights and Shadows, 487; For Washington Market, see De Voe, Market Book, 422, 435-36, 548-49, for Catherine Market (pp.355, 365, 369). On country people selling illegally outside the markets in other parts of New York City (pp.465).

32 De Voe, Market Book, 514; Remittance of A. Haley and Others Against Erecting a Fish Market, 17 March 1842, City Clerk's Papers, Markets Folder, MARC.

33 Remittance of A. Haley and Others, 17 March 1842; Petition of T. Mabbitt, 21 February 1842, City Clerk's Papers, Markets Folder, MARC; Beal, "Selling Gotham," 422; Gates, Farmer's Age, 268.

34 De Voe, Market Book, 448 495; 450, 563-64. For New York Atlas quotation see (pp.450); Valentine, Manual for 1862, 201.

35 De Voe, Market Book, 216; For example, the Council targeted male hucksters in the 1830s by increasing the fees they paid to sell in the country market, but at the same time relaxed restrictions prohibiting women hucksters from buying wholesale from farmers (pp.426). For a story about one countrywoman's encounter with a forestaller, see (pp.425); Webster's Unabridged Dictionary of the English Language, (Springfield, Massachusetts: G. & C. Merriam, 1902), 718.
De Voe, 441; “Petition of Peter A. Meiser and Others” 9 September 1844, City Clerk’s Papers, Markets Folder, MARC.

De Voe, Market Book, 442-444, 489. For forestalling at Catherine Market see (pp.353-55); Petition of Peter A. Meiser and Others, 9 September 1844; Petition of Farmers and Gardeners Frequenting Washington Market, 26 August 1844, City Clerk’s Papers, Markets Folder, MARC.

Petition of Citizens and Occupants of Stores on Vesey Street, 10 May 1848, City Clerk’s Papers, Market Folder, MARC; Petition of Peter A. Meiser and Others, 9 September 1844; De Voe, Market Book, 216, 447; Petition of Morean and Parker and Others, 26 May 1847, City Clerk’s Papers, Markets Folder, MARC.

De Voe, Market Book, 441-42; Petition of Farmers Attending the Washington Country Market, October 1846, City Clerk’s Papers, Markets Folder, MARC.

Ibid, n.p.; De Voe, Market Book, 442; Remittance of A. Haley and Others, 17 March 1842; Haswell, Reminiscences, 412; Petition of Farmers Attending the Washington Country Market, October 1846; Petition of Citizens and Occupants of Stores on Vesey Street, 10 May 1848.

De Voe, Market Book, 186-88 426-27; Henry Onderdonk Jr., Queens County in Olden Times: A Supplement (Jamaica: Charles Welling, 1865), 87;

Joseph Strong to Thomas S. Strong, 20 June 1827, Strong Collection, Emma S. Clark Public Library, Setauket, New York.

De Voe, Market Book, 186-87, 441-42.
CHAPTER 4. SELLING WHOLESALE

In addition to the retail sales alternatives discussed in Chapter 3, farmers and gardeners also had numerous opportunities for wholesale trade. Like retailing, location, culture, economy and individual behavior also influenced the realm of wholesale trade. Wholesaling, defined as a form of commerce in which agriculturists sell to middlemen, assumed a more important role in the rural farm economy than in the urban agricultural economy. Positioned between the two, near-urban farmers engaged in healthy doses of both retail and wholesale trade. Three main wholesale exchange options existed: with general stores, wholesale grocers, and through forwarding merchants. As retail markets became less important in the 1840s, wholesale markets became significantly more so. Traders in farm products: producers' agents, general stores and freighters became secondary to a new class of market specialists. Dealers in country produce, produce commission merchants, and the agents they employed, worked from stands and warehouses on Manhattan's west side in the vicinity of Washington Market. By 1860 they controlled wholesale non-staple food distribution not just in New York and New Jersey, but across the United States. Utilizing steam transportation they played a critical role in the agricultural transformation that so many historian see occurring in the Northeastern and Middle Atlantic states in the second third of the nineteenth century. Beginning in the 1840s and extending across wide areas of the New York City region, farmers turned to commercial production of fluid milk, fruits and vegetables. Although western competition, crop diseases, insect depredations and improved transportation all influenced agricultural trends, the transformation would not have been
possible without the services provided by city wholesale merchants. Historians have failed to
discuss this change.

In 1820, as they had since the colonial period, sales to general stores and wholesale
groceries made up an important part of wholesale marketing in the New York City Region.
Competitiveness characterized the wholesale farm economy. The many villages and towns
sprinkled across the (then) sixteen county region supported a large number of stores which
helped foster a competitive environment for wholesale trade in agricultural products. This
contrasts with usual descriptions of antebellum rural America which are really characteristic
of more isolated and less densely populated areas. In those places, limited competition
allowed storekeepers to hold virtual monopolies. Farm families accepted whatever their local
country store happened to have in stock in barter for their produce. In many instances
chronic indebtedness, the unfortunate result of overused store credit, "virtually compelled"
farm families to trade at their creditor's store in order to pay down balances. Indebted
farmers also paid higher prices for merchandise than cash customers and in exchange
received discounted prices for their barter.¹

These limits existed to a lesser degree in the New York City region. For example, in
April 1847, New Jersey farmer Rebecca Vail discovered that "Theodore's Store," the local
firm where she bartered butter and clothing for various merchandise, was out of yellow ocher.
Rather than being required to wait for the next shipment, or feeling obliged to select some
other color, Vail and her husband went to the village of Plainfield, about four miles distant,
where they located and purchased the pigment.²
To evaluate competitiveness, a rough index of the business climate may be made by using a procedure developed by historian Lewis Atherton. In his study of country stores in the rural South, Atherton used census store valuation estimates to measure the level of competitiveness among stores by county. These valuations reflected stocks of goods on hand. Atherton argued that high values indicated the prevalence of general merchandise. Low values indicated stocks of specialty items. He then hypothesized that the predominance of specialty stores must indicate a greater concentration of retail firms and thus, a competitive business climate. Conversely, prevalence of stores offering a more general line of goods indicated a lower concentration of retail firms and a less competitive business climate.\(^3\)

Table 4.1 applies the Atherton hypothesis to twenty-eight counties in Connecticut, New Jersey and New York State. It shows that the italicized counties within the New York City Region tended to report lower capitalization values than those outside. Since lower values indicate the existence of specialty stores, the census data indicate that a more competitive commercial environment existed within the Region, than in counties immediately outside.

Given contemporary descriptions of the New York City region and surviving farm financial records, the results in Table 4.1 are not surprising. The many villages and cities in the area supported a large number of stores, and farm families benefited from the competitive situation that resulted. To give some idea how this translated into a benefit for the average rural producer, Table 4.2 provides a sense of the number of stores a New Jersey farmer would pass on a hypothetical trip from the village of Morristown (pop 2,000) to Elizabethtown (pop 2,500). Driving a team and “Jersey wagon” through five townships and three villages, a farmer would have passed (potentially) sixty-seven stores in 1840. Logically, farm families
Table 4.1 Capital Invested in Retail Stores, 1840

<table>
<thead>
<tr>
<th>County (NY)</th>
<th>Capital Invested</th>
<th>County (NJ)</th>
<th>Capital Invested</th>
<th>County (CT)</th>
<th>Capital Invested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond</td>
<td>$1,201.43</td>
<td>Bergen</td>
<td>$913.24</td>
<td>Windham^</td>
<td>$2,693.48</td>
</tr>
<tr>
<td>Putnam</td>
<td>$2,254.26</td>
<td>Hudson</td>
<td>$1,173.91</td>
<td>Tolland</td>
<td>$2,892.83</td>
</tr>
<tr>
<td>Rockland</td>
<td>$2,294.34</td>
<td>Passaic</td>
<td>$1,790.48</td>
<td>Fairfield^</td>
<td>$3,102.06</td>
</tr>
<tr>
<td>Kings</td>
<td>$2,467.94</td>
<td>Monmouth</td>
<td>$1,829.98</td>
<td>New Haven</td>
<td>$3,578.20</td>
</tr>
<tr>
<td>Orange</td>
<td>$2,525.29</td>
<td>Essex</td>
<td>$2,197.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westchester</td>
<td>$2,656.06</td>
<td>Somerset</td>
<td>$2,221.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>$2,694.63</td>
<td>Middlesex</td>
<td>$2,505.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greene</td>
<td>$2,792.32</td>
<td>Morris</td>
<td>$2,716.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queens</td>
<td>$3,059.04</td>
<td>Hunterdon</td>
<td>$3,129.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dutchess</td>
<td>$3,128.14</td>
<td>Mercer</td>
<td>$3,754.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulster</td>
<td>$3,208.90</td>
<td>Warren</td>
<td>$3,922.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Lawrence</td>
<td>$3,600.00</td>
<td>Sussex</td>
<td>$4,023.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>$2,672.26</td>
<td>Average</td>
<td>$2,474.25</td>
<td>Average</td>
<td>$3,066.64</td>
</tr>
<tr>
<td>Median</td>
<td>$2,656.06</td>
<td>Median</td>
<td>$2,363.57</td>
<td>Median</td>
<td>$2,997.44</td>
</tr>
</tbody>
</table>

Note: Counties within the New York City Region are italicized.

^ Borders Dutchess County, New York.
^ Borders Westchester and Putnam Counties, New York.


Living near large population centers had more options for such trade, including access to city-based wholesale grocery stores. A visitor to the village of Paterson, New Jersey (pop 7,600) reported, for example, forty grocery and provisions stores, two dry goods and crockery stores, two hardware stores, plus twenty-five specialty stores in 1840. Newburgh, New York, a Hudson Valley manufacturing village of 6,000 boasted 120 retail stores in 1848 that attracted farm families from as far away as fifty miles. A greater density of population in the New York City region translated to more, and larger towns with multiple alternatives to the old country store.
Table 4.2 Stores between Morristown and Elizabethtown, 1840

<table>
<thead>
<tr>
<th>Township</th>
<th>Distance (miles)</th>
<th>Number of Stores</th>
<th>Cumulative Number of Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morris</td>
<td>0</td>
<td>23(^a)</td>
<td>23</td>
</tr>
<tr>
<td>Chatham</td>
<td>7</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Springfield</td>
<td>10</td>
<td>7</td>
<td>40</td>
</tr>
<tr>
<td>Union</td>
<td>13</td>
<td>1(^b)</td>
<td>41</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>17</td>
<td>22</td>
<td>67</td>
</tr>
</tbody>
</table>

\(^a\) Village of Morristown.
\(^b\) Not reported 1840. Number from 1832 enumeration substituted.


Farm families surely engaged in some comparative shopping, which provided a certain amount of leverage for producers to dictate under what conditions transactions took place, including the terms of credit (if any) and if the arrangement would be for cash or in barter.

The Essex County, New Jersey farm family of John and Betsey Crane provide an example. The Cranes dealt with four different stores and merchants in the middle 1820s. Sixty-year old John Crane traded cordwood for tea and sugar at a local store in the village of Springfield (1840 pop 1,651). A skilled carpenter, Crane also sold three-dozen handmade rakes to Jonathan Osborn's store in the village of Scotch Plains (Figure 4.1), five miles from the farm. Other family members made trips to "Britten's" and "Little's" stores, visiting the former monthly and the latter firm more frequently. Twenty-year old Sylvester traded John Little oats for molasses and muslin, while nineteen year-old Mary sold the storekeeper butter. Fifty-one year old Betsey Crane also sold Smith Wood, a local merchant, chickens and ducks.\(^5\)

Wholesale merchants also had the power to reject the conditions of a sale, but refusal to
Figure 4.1 New Jersey Villages Referenced in Chapter Four

buy at, or pay a certain price did not necessarily cause problems for the seller when so many marketing options existed. For example, Putnam County farmer Isaac Oakley sold apples by the barrel in the village of Peekskill, (1865 pop 4,733) New York. One autumn day, Oakley noted in his diary that "Mason" in Peekskill refused to buy his apples. Instead of returning home with a wagon of unsalable produce, or carrying them to the mill for cider, Oakley
brought them over to the "Center Dock Store," which "took the apples for what Mason would have paid."^6

Besides location and competitiveness, other factors directed farmers to conduct business with certain wholesale merchants. These include a store's level of specialization or inventories, and they type of relationship that existed between producer and purchaser. As Lewis Atherton demonstrated for southern country stores, farmers directed their business to merchants who dealt in certain lines of merchandise. For example, Queens County farmer Joseph King bartered farm produce with Isaac Peck and Company for muslin, starch and lime. He also bartered for farm tools and grocery items from Thomas Cornwell, another local merchant, and engaged in business dealings in similar items with other firms as well. Both Peck and Cornwell allowed King to run long term accounts with them and both accepted periodic payments in eggs, corn, hay and cash. King also purchased boatloads of city street sweepings from the Pecks and paid cash, probably because of requirements by the New York City Inspector's office.^7

Some storekeepers offered special services to attract business. Isaac Peck and Company operated a hay scale probably similar to the one pictured in Figure 4.2 as a service to farmers in the Flushing area (Figure 4.3), but also to lure travelers along the road to New York. Other merchants operated "market wagons" which circulated through the countryside picking up produce and taking orders for store goods. Mill owners enticed regular customers to trade for stocks of merchandise they kept on hand. Wood and Whitlock's Mill and Store in Katonah, New York conducted a booming wholesale business in addition to their mill work, selling items like dye, tobacco, nails, muslin, even books and medicine. Like many general stores
the mill accepted barter in the form of grain, apples, cider, butter, potatoes, animal skins, fish and knitted items. In addition to their feed and lumber business, Robert and James Udall bought grain and sold Brooklyn horse manure, delivering the fertilizer to the dock or landing of their customers’ choosing. Small town firms used a variety of measures to attract farm families’ attentions, and their business.  

In an age when commercial relationships placed tremendous emphasis on reputation, country storekeepers, city wholesale merchants and farmers sought business relations with persons they could trust. Dissatisfaction at the retail level boomeranged back on both wholesaler and producer. It affected business and credit ratings. For instance, when New York grocer John Stickler sold an important customer butter for shipment to New Orleans, he placed his reputation, his faith in his wholesale supplier, and the producer’s name on the line. Describing the transaction to his daughter, the intended butter recipient, John Pintard wrote:
I have just seen your tub of butter nicely packed in a half barrel of salt. It will be sent aboard the Lavinia this morn[ing], I hope in time to go in the run. Stickler says that it comes from one of the best dairies in Orange Co[unty] & equal in quality to what he has sent us this morn[ing] . . . The butter comes from Mr. Ellison's dairy near Newburgh & is superior in quality.9

Figure 4.3 Regional Reference Diagram for Chapter Four

There is also some indication that farmers sought connections with merchants based on kinship ties and cultural familiarity. For example, Isaac Oakley sold farm produce to the Peekskill firm of Banker and Oakley, a grocery store owned in part by his son Ferris. Kings County farmer Adriance Van Brunt conducted business with Nicholas Van Brunt, a merchant located at Sixteen South Street in New York City. N.R. Van Brunt and Co. also purchased melons and potatoes from Teunis Bergen, another Kings County farmer. These facts indicate
the existence of two types of bonds that helped farmers choose mercantile business partners. First, kinship. In the case of Oakley the link is obvious, but for Van Brunt, more tangential. Second, cultural heritage. Both the Van Brunts and Bergen shared a common ethnic background and cultural heritage, and it is no surprise that the New York merchant conducted business in ethnically homogenous Dutch-American Kings County. For example, David S. Cohen has documented that a creole dialect of the Dutch language, called “Jersey Dutch” survived in the rural districts surrounding New York City into the early nineteenth century and that Dutch-American families spoke this and English. Teunis Bergen’s biographer noted that he too was bilingual. Others sources mention that “Dutch” was spoken by farmers in the marketplace, although by the middle nineteenth century this would have been rare indeed. Thus, some evidence exists that Dutch American farmers sought out merchants with similar backgrounds with whom to conduct business.¹⁰

Besides country storekeepers and wholesale merchants, farmers made use of the services of an individual known as a forwarding merchant or “freighter.” Acting as agents for both rural producers and country storekeepers, freighters transported, or “forwarded” agricultural produce to wholesale merchants and butchers in New York. Freighting made up a portion of the larger “coasting trade,” a form of maritime commerce open only to American citizens in which seafaring traders bought, sold, traded and transported products from farm, forest and the sea to port towns and cities up and down the coast. That all but two counties in the New York City region had access to “easy, cheap and uninterrupted” transportation because they touched a navigable body of water, the forwarding trade in agricultural productions reached large proportions well before the beginning of the nineteenth century.¹¹
Port villages and towns, large and small participated in the forwarding trade. In the late 1840s a correspondent to *Hunt's Merchant's Magazine* reported details of this commerce in Newburgh, New York, which consisted of “nine storehouses and 5 freighting establishments which give employment to 3 steamboats, 2 barges and 6 sloops.” More important, however, were the dozens of small river settlements like Aquacknonk, New Jersey (Figure 4.4), and isolated landings where farmers and freighters congregated to conduct their trade. For example, Hackensack New Jersey, a village of 1,000 people with turnpike connections and a favorable location at the head of the tide, had ten stores in 1834. A description of the village speaks of its coastal trade activity: “Considerable business is done here with the adjacent country, and several sloops ply between the town and New York, carrying from it wood, lumber and agricultural products.”\(^{12}\)

Counties with considerable lengths of waterfront boasted numerous ports, large and small. Table 4.3 lists the major port settlements in Westchester County, New York in the late

Figure 4.4 Gaff-rigged Sloop on Passaic River at Aquacknonk, New Jersey, c.1845

1830s. The list ranges from small settlements of only a few hundred persons to larger
villages containing more than 1,000 people. Combined, they represented the potential for
substantial trade between the Westchester County countryside and the city of New York.

Given the difficulty of obtaining reliable statistics on the use of small sailing craft in the
coasting trade, Table 4.3 almost certainly underestimates the number of these boats in

Table 4.3 Sloops and Retail Stores in Westchester County, 1836

<table>
<thead>
<tr>
<th>Village</th>
<th>Location</th>
<th>Dwellings</th>
<th>Distance to NY</th>
<th>Stores</th>
<th>Sloops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peekskill</td>
<td>Hudson River</td>
<td>220</td>
<td>42</td>
<td>16(^b)</td>
<td>6</td>
</tr>
<tr>
<td>Croton</td>
<td>Hudson River</td>
<td>12</td>
<td>36</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sing Sing</td>
<td>Hudson River</td>
<td>200</td>
<td>34</td>
<td>18(^d)</td>
<td>3(^c)</td>
</tr>
<tr>
<td>The Sawpits</td>
<td>LI Sound</td>
<td>100</td>
<td>27</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Mamaroneck</td>
<td>LI Sound</td>
<td>55(^a)</td>
<td>23</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>48</strong></td>
<td><strong>22</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) "From 50 to 60 dwellings."
\(^b\) "16 large general stores, 2 large hardware stores, 1 book store, 1 apothecary, and bakery."
\(^c\) "Several sloops belong to the village."
\(^d\) Gordon reported "many" stores here. Figure is from Disturnell.

(Albany: J. Disturnell, 1842), 375.

Westchester County. Sloops moored at country docks or beached on private landings passed
uncounted. For example, writing about commercial activity of a single eastern Long Island
township, Horatio Spafford observed "the trade with New York necessarily employs a great
number of vessels, probably not less than 100, of 30 to 100 tons."\(^13\)

Because it was based on second and third party involvement, forwarding, like other
forms of wholesale trade placed considerable emphasis on reputation of the freights.

Forwarding merchants trusted farmers not to misrepresent the quality or quantity of goods
sent them. Farmers trusted that freighters would honestly report the prices they received and
services rendered. City wholesale merchants trusted that forwarding merchants would not short them on weight or otherwise mislead them. Kinship networks also helped facilitate solid business relationships. Mark Carnes’ study of mercantile families in Newburgh, New York revealed that forwarding mercantile families in the Hudson Valley village intermarried with families of New York-based wholesale and export merchant families. These relations provided an added layer of assurance of the quality of farm product shipments and credit worthiness. Thomas Beal’s recent study of New York City’s retail trade also emphasizes the importance of trust between city merchants and country storekeepers.¹⁴

Freighters competed for the farm trade with country storekeepers and millers who made their own arrangements for shipping agricultural products to New York. Storekeepers owned many of the boats that participated in the coasting trade, sometimes piloting them, other times hiring boat captains to do so. Among the steam and sail powered craft he commanded over the years, Captain James Peck sailed the sloop Atlantic for the store he and his brother James operated in Flushing, New York. Through the 1840s freighters offered stiff competition to storekeepers whose prices reflected overhead costs, bad debts and profit margins. The fact that these skilled boatmen could guide their shallow draft boats into coves, or on to beach landings to make for convenient loading and unloading, and that they paid cash made them a popular alternative to the general store.¹⁵

Compared to transactions with wholesale merchants, the forwarding trade had certain drawbacks for farmers. One is that freighters did not always seek the highest prices in the market. Rather, upon arrival in New York the boatmen sought out wholesale merchants with whom they had forged long-term relationships. For example, while in New York the captain
of the Hudson River sloop *Eclipse* conducted business only with three firms, B & H Haight, Barker and Son, and J.V. Nostram and Co. As opposed to selling on commission or simply "shopping around," this method minimized risk and the time spent marketing. Freighting also transferred risk which otherwise would have been assumed by the storekeeper to the producer. Liability for private carriers extended only to their using "diligence and care" in transporting cargoes. Goods damaged in leaky holds or wilted on decks, or worse, lost through fire or the not infrequent collapse of deteriorating wooden docks reduced the farmer's receipts, but not the freighters take. In fact, it is likely this system contributed to keeping the quality of farm products at minimal levels.\textsuperscript{16}

Established freighters probably advertised their services by word of mouth and reputation. Newcomers used the newspaper. Late in the winter of 1849, H. and W.R. Knapp notified Orange County residents that their sloop *Sarah Francis* would soon begin carrying "any freight and produce" to New York, thirty-five miles down the Hudson River. Since the *Sarah Francis* left the village of Haverstraw Tuesdays at 2:00 P.M. and did not depart from New York until Fridays at 3:00 P.M., it is unlikely that the Knapps expected farmers to make the trip. Forwarding merchants did carry passengers from time to time. One unidentified sloop captain scribbled in the margin of his account book "this not Exspected" next to an entry for the sale of two passages to New York for seventy-five cents in 1825.\textsuperscript{17}

At seventy to ninety feet in length and displacing from fifty to two-hundred tons, these "North River" and "Long Island Sound" sloop-rigged sailing vessels, as well as larger schooners contained space to transport the products of many people. For example, on 8 July 1826 the sloop *Eclipse* carried (among other items) six batches of butter in lots ranging from
8½ to 45½ pounds for five men and one woman, plus 12½ pounds for J.T. Conklin and Company. The sloop Monmouth which operated out of Middletown Point, New Jersey in the 1830s carried items for ten people in one cargo, including; fifty-seven baskets of peaches, six baskets of pears, nine baskets of potatoes, 8½ barrels of apples, and a calf.¹⁸

Freighters often carried small livestock to New York for sale to butchers. Urban demand for poultry, veal and lamb and a preference for fresh over salt pork, created a strong market for these livestock products. Too young or awkward to drive to market, farm families sent these animals in care of freighters alongside crates, baskets, barrels and firkins. Orange County farmer James Hawxhurst frequently sent calves, oxen and geese by Captain Nathaniel Ketcham for sale in New York. On 17 November 1827, he sent seven lambs with the Captain, who paid Hawxhurst $5.25 the following week. On the other hand, farm woman Catherine Orland sent ten pigs by a freighter to New York and received £14.10s.1d ($36.26) upon his return.¹⁹

The diversity of items sent, variations in quality and price, and cargo size required that boatmen maintain accurate records. Butter, sent to market in qualities ranging from rancid to fresh probably received the most extreme prices. The seven batches of butter sent down river on the Eclipse in July 1826 brought four prices ranging from 1s.2d (14½¢) to 1s.6d (18¾¢) per pound. This could translate into large sums of money for high-volume customers. For example, one merchant’s cargo consisting of thirty-five dozen eggs, 100 bushels of corn, and 4¼ loads of oak firewood sold for £36.17s.6d ($92.21).²⁰

For basic service boatmen charged “freight,” a fee based on the object being transported. A barrel cost a shilling (12½¢), a pig two shillings (25¢) and a basket, sixpence (6¼¢).
bale of pressed hay weighing 150 pounds ran 1s.2d (14p). Farmers could expect freight charges to absorb approximately 5 to 8 percent of the value of their cargo plus additional deductions for animal feed, inspection and cartage.\textsuperscript{21}

Municipal inspection ordinances involved imposing a rudimentary grading system on grain, wool, firewood and hay before it could be sold. Inspectors also checked to see that producers had initialed containers and properly labeled weight and tare. In New York City, buyer and seller split the small fee for these services, and freighters passed them on to the farmer. For example, in the fall of 1834, Nicholas Coteral paid $2.04 to a freighter who had paid for inspection of sixty-nine loads of wood. In New York cartage services became necessary if the freighter needed to transport items within city limits. Driving two-wheeled carts, licensed cartmen charged $1\frac{1}{4}$ cents for carrying a load of grain up to two miles. Other country items: hay, hoop poles or small livestock cost $3\frac{3}{4}$ cents. On a return trip from New York, the captain of a New Jersey market boat passed on cartage charges for barrels amounting to three pence ($3\frac{1}{4}$p) each.\textsuperscript{22}

In addition to transportation and sale, freighters performed factor services. For example, they directed proceeds to storekeepers or other third parties upon request. When Hannah Lefever sent a cow and calf to New York, which sold for £5.4s, ($13) the freighter paid her son the balance. Boatmen also made purchases, and carried letters and packages. Not infrequently do accounts show deductions for items purchased or picked up in New York. For example, writing from his home in New York City, Benjamin Strong sent by "Captain Skinner" correspondence regarding the operations of the family farm plus two "Connecticut Scythes" to his brother Thomas.\textsuperscript{23}
Farmers conducting high volume wholesale trade engaged in partnerships to share costs. Since a work boat could cost as much as $600, some farmers purchased them on shares. Other times farmers split operating costs with boatmen. An agreement made in 1835 between Captain Abiather Munsell and Suffolk County farmer John H. Weeks stipulated that Weeks would sell Munsell firewood for twenty-seven shillings ($3.37½) per cord, measured and delivered to a certain dock on the Great South Bay. They also agreed to split the charges for dockage during the loading process. Munsell piloted Weeks’ boat, the Woodman, and took responsibility for sales in New York and all other expenses. Some farmers even negotiated items such as maintenance. In an agreement between merchant-farmer John Wood and Captain James Kelsey, Kelsey received an extra share of the profits in exchange for assuming maintenance of Wood’s sloop, Tennessee.24

By the middle 1840s the wholesale market had started to undergo some important changes. Country storekeepers, forwarding merchants and wholesale grocers moved, and were moved, out of the business of buying farm produce or acting in agency for farmers. They were replaced by a class of merchants who specialized in certain aspects of the wholesale trade, which included the purchase, sale, packaging and transportation of lines of farm products. Generally called “dealers,” but also known for the items by which they conducted business: produce, eggs, butter, milk, fruit, they and the agents they employed helped bring about a system of marketing which lasted late into the twentieth century. This replacement of one set of wholesale merchants with another is really symptomatic of larger changes effecting American society and economy. It includes development of affordable forms of improved transportation, changing patterns of agricultural production, rising urban
population and consumption levels. Specific to New York City, the failure of the retail
public market system also contributed to the emergence of a new wholesale market.

Technological innovation encouraged concentration of the wholesale trade. According
to Ulysses P. Hedrick, cost-effective steam transportation – railroads and steamboats – finally
became widely available in New York in the 1840s. Possessing the ability to move large
quantities of time sensitive freight against both wind and tide, and offering heretofore
unheard of speeds, it extended the area in which farmers could produce highly perishable
items. Steam transportation brought remarkable changes in previous concepts of marketing.

Queens County farmer Charles King asked in 1851:

Who before the Erie Railroad became a reality [1842], ever heard of tons of
strawberries, the daily measure of the quantity of that delicate fruit . . . or
gallons of milk reckoned by the ten thousand . . . almost warm from the
milking . . . . and so of butter, vegetables, poultry, eggs and all the riches of
the dairy and the farm-yard, and the orchard and the garden. Think of such an
incident, which only steamboats and railroads could bring about.

Considering the supremacy of its port and that the city was the terminus for so many railroad
lines, specialized city wholesale merchants located in New York (and later Brooklyn and
Newark) were in an excellent position to benefit from these advances.25

Farmers took advantage of new transportation technologies by specializing in products
for which they enjoyed a comparative advantage with western farmers. This is a story which
historians have told and retold. Since the 1830s eastern farmers had been reeling from the
blow of declining yields and western competition in cereal and livestock production. Steam
and rail transportation permitted large numbers of farm families to switch from grain to
commercial production of milk, fruit, vegetables, butter, hay and oats.26
Although it exhibited a profound effect on American agriculture, the story of the growing dominance of produce dealers and commission merchants in the wholesale economy of New York City after 1840 has not been told. These merchants located their offices on Manhattan's west side near Washington and West Washington Markets. In addition to dealing with customers on a national and international level, they also supplied private retail grocery stores, boarding houses and hotels with foodstuffs. From such places of business they, and an army of country agents used railroads and steamships to tap into country and national markets. They quickly absorbed (sometimes with serious consequences in river towns) the wholesale trade previously controlled by country storekeepers and wholesale grocers (who had been gradually moving away from these types of transactions). They also bypassed forwarding merchants. Near-urban and urban agriculturists also discovered that it was more convenient to cart their produce to a central place where they could meet with produce dealers rather than dealing with the hassles of the retail public market. As shown in Table 4.4, the produce dealer, produce commission merchant, milk, butter and egg dealer all emerged as the chief participants in this new marketing system, and within two decades the business had been completely transformed.27

Chapter 3 outlined many of the problems agrarian women and men encountered when they attempted to sell in the retail public markets. Equally important are consumers changing shopping habits. While newspapermen like Walt Whitman periodically strolled through the markets and emphasized the liveliness and excitement swirling about, the average consumer who encountered the crowds, dirt, noise, fighting and pickpockets three times a week held a slightly different view. These men and women voted with their pocketbooks, and when a
Table 4.4 Selected Mercantile Occupations in New York City, 1840-1865

<table>
<thead>
<tr>
<th></th>
<th>Produce Commission Merchants</th>
<th>Produce Dealers</th>
<th>Milk &amp; Butter</th>
<th>Butter Dealers</th>
<th>Egg Dealers</th>
<th>Wholesale Grocers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840-41</td>
<td>30</td>
<td>16</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>172</td>
</tr>
<tr>
<td>1841-42</td>
<td>45</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>231</td>
</tr>
<tr>
<td>1853-54</td>
<td>151</td>
<td>166</td>
<td>337</td>
<td>80</td>
<td>13</td>
<td>240</td>
</tr>
<tr>
<td>1859-60</td>
<td>147</td>
<td>213</td>
<td>380</td>
<td>142</td>
<td>48</td>
<td>202</td>
</tr>
<tr>
<td>1865-66</td>
<td>428</td>
<td>308</td>
<td>319</td>
<td>180</td>
<td>13</td>
<td>164</td>
</tr>
</tbody>
</table>

\[ ^a \] “Butter, Cheese, Lard, etc”
\[ ^b \] Milk only.

Sources: Wilson’s New York City Business Directories, 1840-1866.

grocery store opened nearby, the patronized the vastly more pleasant surroundings, despite higher prices. In addition to extending credit to customers and offering a place for social banter, groceries sold items like butter in smaller quantities than could retailers in the public market. This even appealed to the poor, who constituted a large proportion of the public market patrons. Recognizing the loss of business, Fulton Country Market butter dealer Thurston Mabbitt wrote:

> Now those who are wealthy can come to the market and get his 5 - 10 or 20 lbs or more of Butter and take it - home because he can buy it 1, 2 & sometimes 3 cents pr. lb Cheaper than he can get it at the groceries about the City - but the poor man or woman is obliged to leave their wants behind & go to the groceries & pay more for what they get.

By one estimate, made in the early 1870s, fully two-thirds of New Yorkers shopped at grocery and provisions stores rather than the public markets, because they “save[d] time and trouble.” City officials agreed with this decision. Facing skyrocketing land acquisition, construction and maintenance costs, the Common Council effectively ceased building new markets after 1835. Figure 4.5 shows that owners of private retail grocers rushed to fill the
void. By 1867 nearly 6,000 opened stores in Manhattan, most of them north of Fourteenth Street, where, recalling from Chapter 3, no country markets existed.28

Produce merchants used improved transportation and related technologies to market items like milk and berries which country storekeepers and freighters could never handle. As early as 1838 farmers in New York and New Jersey consigned fluid milk to firms which arranged for shipment by steamboat and sale in New York City. The profitability of this early trade for farmers, shippers and milk distributors promoted its rapid expansion. By the middle 1840s nearly 30,000 quarts reached New York every day by boats from Orange and Rockland Counties. Around the same time, farmers in New Jersey started shipping "country milk" to the city by rail.29

Figure 4.5 Grocers and Markets in Manhattan, 1810-1870

Sources: Stokes, Iconography, v.3 pp.958-960; Ira Rosenwaike, Population History of New York City A New York State Study (Syracuse: Syracuse University Press, 1972), 36.
Thomas Selleck, a surveyor turned milk dealer first consigned milk from several Orange County farmers in the spring of 1842. Shipped on the newly opened Erie railroad steamboat link to New York and received at the company’s Duane Street dock, Selleck paid the farmers two cents and the railroad a half cent per quart, and sold fresh “country milk” in New York City. Others mimicked his success and from these small beginnings began a trade that soon could be measured in the tens of thousands of gallons.  

Farmers carried milk to depots and docks in wooden churns but spoilage problems encouraged adoption of the tin can. When placed in spring water the tin helped quickly cool the milk to (ideally) between fifty and sixty degrees, which prolonged its life long enough to survive the journey from farm to market. Milking occurred twice daily in the summer and once in the winter but farmers made only one daily trip to the depot. Pickup times varied by location. On the Erie line, farmers at Otisville, New York rose early to complete the morning’s milking and transport it to the depot before the departure of the 5:30 train. Milk shipped from the most remote stations on the Harlem Railroad line had to be ready by mid-afternoon. Overnight and in the pre-dawn hours, milk trains threaded their way through hill and valley at speeds of up to twenty miles per hour, stopping every five or six miles at places with names like “Golden’s Bridge,” “Purdy’s,” “Willow Tree” and “Jerusalem.” At Monroe, fifty miles from New York City, 200 fifteen-gallon cans lay waiting in the dissipating heat of the early evening. At Piermont, literally the end of the line for the Erie Railroad, engineers pulled the cars out on a fifty foot wide yellow pier that stuck one mile into the Hudson River. Here, “milk cans, strawberry-baskets, butter-tubs, and immense deer” were dumped in “heaps” on the company steamboat. Returning to his home in New York City this way in the
spring of 1844, Philip Hone watched with amazement as workers loaded 5,500 gallons of milk on board. Steamer, passengers and cargo then made their way downstream twenty-five miles to the company dock at the foot of Duane Street. Table 4.5 provides a snapshot of the volume of milk carried to New York by steamship and rail in the early 1850s. It does not include milk carried by wagon, which accounted for half of all consumption.31

<table>
<thead>
<tr>
<th>Mode of Transit</th>
<th>Point of Origin</th>
<th>Daily Average (Gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NY &amp; Harlem RR</td>
<td>Westchester, Putnam, Dutchess (NY)</td>
<td>10,700</td>
</tr>
<tr>
<td>Hudson River RR</td>
<td>Westchester, Putnam, Dutchess (NY)</td>
<td>941</td>
</tr>
<tr>
<td>NY &amp; New Haven RR</td>
<td>Westchester (NY), Fairfield (CT)</td>
<td>853</td>
</tr>
<tr>
<td>NY &amp; Erie RR</td>
<td>Rockland, Orange (NY)</td>
<td>8,795</td>
</tr>
<tr>
<td>Ramapo &amp; Paterson RR</td>
<td>Rockland (NY), Passaic, Bergen (NJ)</td>
<td>250</td>
</tr>
<tr>
<td>New Jersey RR</td>
<td>Middlesex, Essex (NJ)</td>
<td>566</td>
</tr>
<tr>
<td>Steamboat Red Jacket</td>
<td>Elizabethport (NJ)</td>
<td>375</td>
</tr>
<tr>
<td>Barges</td>
<td>Newburgh (NY)</td>
<td>375</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>22,853</td>
</tr>
</tbody>
</table>

* Carried by railroad to Piermont, Rockland County and then conducted by steamboat to New York City.


Thomas Selleck’s method of consigning milk from Orange County and managing the shipment and distribution from offices on Manhattan’s west side set precedent for milk marketing for the next thirty-five years. Milk “associations” and dealers followed his lead and competed to gain farmers’ business and consumers’ trust. Dating to the mid-1840s, milk associations predate similar activities by cheese and butter makers to control production and distribution of their products. At least four such associations existed in the New York City Region in the early 1850s. The largest and oldest of these was the Orange County Milk
Association, a firm financed by twenty individuals at $250 per share in 1844. By 1852 the Association reported assets of $10,000 and a membership of ten, half of whom were farmers. Members elected a “country agent” and a city counterpart to oversee the supply and distributive branches of the business. Since the Association sold more milk than its five country members could provide, the country agent traveled through Orange and Dutchess Counties convincing farmers to consign their milk. Together members and contractors shipped some 1,750 gallons daily by rail to New York. Of this amount, about one-third went to families in New York, Brooklyn and Jersey City. From offices on Washington Street, the city agent sold the remainder to grocery stores, hotels, restaurants and institutions such as New York Hospital.32

Milk dealers used advertising to take advantage of consumers’ concerns about the quality of their dairy products. For many years health reform advocates had been alleging connections between the low quality of the city’s milk supply and high rates of infant mortality. Honest and less virtuous milk dealers together claimed their dairy products came from Orange or Westchester Counties, Long Island or Connecticut, all of which had reputations for producing pure milk. Here, far from the city, clean and content cattle and honest country folk made quality butter and sold wholesome milk. “We would call the attention of our city subscribers” began an advertisement for the Orange County Milk and Butter Company, “to a milk and butter depot, lately established at the corner of Reade and Washington streets. Pure milk and choice butter is punctually furnished directly from the best dairies of the several counties, through which the New York and Erie Railroad passes. Price of milk delivered to customers, 5 cents a quart, or 4 cents at the depot.”33
Grocery stores and “small dealers” who catered to a poor clientele sold milk purchased from urban dairymen who raised cattle in unhealthy conditions and fed them a diet of spent distillery mash. Two milkmen are seen in Figure 4.6 attempting to support a sick dairy cow against a rail fence while a third milks her near a distilleries operated in the Manhattan’s Sixteenth Ward. A poor substitute for fresh (although diluted) country milk, these retailers often passed off the “swill milk” to their customers as the genuine article. According to John Mullaly, some dealers painted the sides of their wagons with misleading information while others went to greater extremes, such as the grocery store described below:

Some of them exhibit a sign, which informs the gullible public that the best pure country milk, from Orange county [sic] or Westchester . . . is sold inside. The business of the establishment is also indicated by a plaster of Paris cow, which is displayed in the window, with one or more geraniums . . . . Upon entering, you will see three or four large cans, which contain pure country milk, and which is sold for four cents a quart in the summer, and five cents in the winter.\(^{34}\)

Figure 4.6 Swill “Milkmaids” at Work in Sixteenth Street, Manhattan

Source: Frank Leslie’s Illustrated Newspaper 6 (26 June 1858): 61.
Farmers and dealers wrestled with the challenge of keeping the milk cold in an era before mechanical refrigeration. Despite numerous inventions designed by ingenious milk producers to keep milk cold during transit, the distribution system relied on spring houses and transportation during the coolest part of the day. Erie’s milk boats arrived at the Duane Street dock twice daily at 11:30 and 4:00 in the morning. The Harlem Railroad train arrived at its Thirty-second Street depot some time after midnight. These places must have been scenes of confusion as railroad workers unloaded cans amidst cartmen, milk dealers and wholesalers, with much pushing and scrambling to claim cans. Hundreds of single and double team milk wagons, many stenciled with lettering indicating the country origins of their milk crowded the docks and streets near the depots in the darkness of the early morning hours. Since farmers filled their cans inconsistently, milk dealers estimated the volume of each can with a measuring stick before transferring the milk to their own containers. Milkmen loaded the cans directly into the carts and drove through the winding streets making deliveries from house to house, and crying out to “sleepy housemaids” with “unearthly shrieks” to come out into the street for their orders. They distributed the milk directly from the can with a long dipper, exchanged a quick greeting and moved on.\

Eventually the cans were returned to their owners in countryside, a feat made easier when farmers painted their names on the outside. Carriers received endless complaints about lost and mistreated cans, “piled...tossed about and battered” by cartmen, employees of the transportation companies, and probably the farmers themselves. Contemporary observers reported that farmers used cans as small as ten quarts and as large as sixty, but most farmers used the forty quart (ten gallon) size, which became the standard for 100 years.
In the new wholesale market, farmers lost the ability to set their own prices as they had as retailers. For many years milk producers and buyers negotiated prices amicably and farmers received monthly payments, and not until the 1870s did farmers realize what they had given up. Wholesale prices ranged from 1¼ cents to 3½ cents per quart and many farmers reported receiving two cents per quart for “summer milk” from the 1840s through to the 1860s. Dealers offered higher prices during the winter months when supplies dipped and they paid freight ranging from half to one cent per quart by rail or water.37

Commercial milk production proved a more attractive alternative to making butter and farm families changed modes of production as soon as they possible. Milk sales provided regular income in the form of a monthly check. Farmers also believed that, pound for pound, milk was more valuable than butter, and country editors provided considerable evidence to support this assertion. It is also likely that farm women supported commercial milk production over butter because they recognized the savings in labor costs. Despite this, only families within four or five miles of a steamboat dock or railroad depot could switch to fluid milk production. John Mullaly estimated in the early 1850s that this included fewer than 300 farmers in Orange and Rockland Counties, out of thousands in the two county area who remained with mixed farming and commercial butter production.38

So, despite perceptions about price, butter remained more important than fluid milk through the Civil War. But changes in butter marketing also occurred after the 1840. Recognizing the enhanced value of fresh butter, city produce merchants and their country agents enticed producers to sell rapidly and with regularity. Encouraged by high prices farmers who at one time packed butter in firkins weighing up to 100 pounds and shipped
them to the country store twice annually, now loaded their wagons with tubs weighing from ten to fifty pounds, and made frequent trips to the butter merchant. Isaac Oakley’s, “Cash Accounts” for example, contain weekly entries of butter being “Sent away” in quantities ranging from six to fifteen pounds. New Jersey farmer Jessie Cameron also consigned butter to William Walton, a New York City merchant at twenty-five cents per pound for spring butter and twenty cents for butter made during the summer and fall.39

Other producers also disposed of their butter on commission. Responding to a query from the New York State Agricultural Society in 1859, a correspondent wrote that commission sales represented an excellent way to sell butter because these merchants understood the inner workings of the market and could obtain the highest prices. Not all these merchants located in New York - the writer commented that local merchants known to the farm family were often the best customers.40

Soft fruit, like fluid milk also required extra care. Losses due to negligence could easily approach 100 percent. Farm journals like The Horticulturist and New Jersey Farmer printed regular contributions from wholesale specialists designed to inform farmers about the importance of careful packaging and shipping. In one oft quoted article a pear grower noted that a bushel of unripe pears sold for only two dollars, a third of the value of a ripe bushel. Given these price variations, plus the uncertainties brought about by supply, produce merchants sold fruit on commission and bought on consignment. Volatility required that they make frequent trips into the countryside to gauge the market. On these trips the merchants met with farmers and examined crops. Where necessary they secured labor, placed orders for
containers, and arranged for storage and transportation. For both merchant and farmer, the busy weeks approaching harvest were nearly as important as the event itself.\textsuperscript{41}

In mid-June 1854, a month before the commencement of the peach harvest, local and city produce merchants began showing interest in Somerset County farmer Isaac Webster’s maturing peach crop. Later that month “some men” again came to look at the orchard. Every week another delegation of potential buyers arrived. William Wanser, a “Produce Commission Merchant” at New York’s Washington Market inspected Webster’s ripening crop on 19 July. Apparently that visit convinced the merchant that the time had come to make a bid for Webster’s peaches. The following day Webster wrote in his diary, “Wanser called here again today and bargained for our peaches at $1 per basket.” Besides this the two men determined that Webster would be responsible for picking, packaging and delivery by wagon (Figure 4.7) to a dock in New Brunswick.\textsuperscript{42}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\linewidth]{Figure_4.7.png}
\caption{Hauling New Jersey Peaches to Market}
\end{figure}

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On 10 August Webster wrote in his diary "Picking peaches today. Wanser up for a visit." Similar entries appear on other days. Wanser frequently turned up in the orchard and at the boat offering to help out in one way or another. Yet the merchant’s presence in the orchard is significant not because of his helpfulness, but because it reveals the business acumen of a New York produce dealer. Had he "bargained" a commission sale, Webster would have had a direct interest in supervising the pickers since lower prices would result in lower returns for both producer and seller. But the agreement stipulated a guaranteed price, so fruit damaged at the hands of the laborers or teamsters would come out of the Wanser’s pockets. Enough cannot be said about the value wholesale merchants placed on their reputations. They complained bitterly upon the discovery of rotten or unripe fruits and vegetables hidden in the bottoms of boxes and baskets. A slow and costly process awaited owners of tarnished reputations, deserved or not.43

Merchants confined to their desks in New York had little control over goings on in the field, and could only urge care from a distance. "Watch your pickers closely." warned commission merchant John Ryer in a letter to his country agent. Another wholesale merchant complained about receiving boxes of "matted, mouldy rotten and worthless" wild blackberries from his rural suppliers. Farmers soon learned a second lesson from the new wholesale market; the price of dealing with produce merchants, as opposed to country storekeepers and freighters required accepting greater responsibility for quality control.44

Fruit and vegetable producers generally accepted responsibility for packaging and transportation to the depot or landing. Some merchants provided farmers with bags, few provided baskets. Islip farmer Selah Wickes received bags from F.E. Wheeler, a Brooklyn
merchant to whom he sold potatoes. Meanwhile, Isaac Webster procured peach baskets (Figure 4.8) on his own from Sylvanus Grover, a local farmer. Like dairy farmers concerned about the return of their milk cans, these farmers also hoped that their baskets would be returned because they represented an investment. Staten Island farmer Alfred Cutting expected that “Archdeacon,” the Washington Market produce dealer to whom he sold watercress, would return Cutting’s handmade baskets or pay for them. Baskets frequently came back damaged and dirty and like the milk producers, berry growers wrote off many containers as losses.45

Figure 4.8 New Jersey Peach Basket

Source: Edwards, Industries of New Jersey, 38.

Wholesale merchants offered a variety of services to their agrarian customers. Many sold on commission, which meant searching the market for the best prices and charging the producer a fixed percentage against the proceeds. Augustus Hasbrouck, a New York commission merchant who purchased vegetables in Bergen County, New Jersey charged a
standard 10 percent fee for his services. Commission merchants, like freighters also deducted for freight, cartage and incidental fees. When Selah Wickes decided to sell thirty-three bushels of potatoes to "Case on commission" he could expect the merchant to deduct 10 percent for commission plus freight. The firm of P. Werselis and Company deducted $10.64 for cartage and $16.23 from watercress and mint sales made on behalf of Alfred Cutting. These fees could add up, which is a likely reason farmers often chose consignment over commission. On top of paying commission fees, Joseph King paid freight and turnpike tolls to Josiah Rogers for the sale of thirteen baskets of currants.46

The new developments in wholesale markets after 1840 exhibited a profound effect on the rural economy. For example, when the Erie Railroad bypassed the Hudson River port of Newburgh New York, it drew away a tremendous amount of trade from interior farmers and merchants. In the first year alone the railroad carried from Orange County three and a half million pounds of butter, 2,000 tons of apples 321 tons of grain and seeds, fourteen tons of potatoes, plus wool, hay, hoop poles, and livestock -- all items which used to pass through the hands of country storekeepers, steamboat interests, and merchants in Newburgh.47

In response the Newburgh merchants hired agents to scour the countryside and offer higher prices for farm products than city merchant competitors. Although they succeeded at attracting trade, it had limits because the prices they offered could not be sustained over time. A more wise move on the part of the merchants was to lobby for the construction of a branch line to Newburgh. They succeeded, and upon its completion in the early 1850s, trade temporarily reoriented back to Newburgh, but the new market permanently devastated the forwarding trade.48
Freighters now faced serious competition not only from steamboat and the railroad companies, but also from city dealers seeking to cut them out. Investments tied up in boats and storage space, once advantageous, were now liabilities. Not just milk and peaches, but apples, hay, grain, butter, and even livestock bypassed them by rail and steamer to city merchants. Steamers out of Perth Amboy, New Jersey carried thousands of baskets of peaches to New York which previously would have been sold locally or shipped by sloop. More than one steamboat traveler commented with surprise upon hearing noisy livestock moving about in the holds of the boats. Logbooks from the *D.R. Martin*, a steamer that traveled between the north shore of Long Island and New York City in the late 1860s carried horses, pigs, sheep, calves and poultry along with cargoes of merchandise.49

That freighters like Captain Jenk of the sloop *Sea Gull* continued to advertise their services in local papers indicates that some boatmen remained in business. By one estimate more than 200 sloops continued to sail in and out of Hudson River Ports as late as 1860. Farm records also indicate that boatmen continued to find employment, although on a more limited basis. For example, in the 1870s Isaac Oakley shipped forty-eight gallons of cider on “Captain Storms vessel” and Selah Wickes, a regular patron of the Long Island Railroad shipped 100 bushels of potatoes on board the *Susan Brewer*.50

The extent to which an area retained its maritime heritage also influenced the survival of the boatmen. In those places where agriculture and the sea remained closely linked, freighters continued to find employment. Geography surely played a role. On far eastern Long Island, one-hundred miles from New York City, farming and fishing remained inseparable. Here, despite steamship and rail competition, sailing ships continued to trade
well into the 1880s. Lucius Hallock, a farmer living near the village of Orient, New York did business with several boatmen, such as Captain John Rackett of the sloop *Amelia*. Rackett sold potatoes, turnips and cabbages for Hallock not in New York, but across the Sound in Norwich, New London, and other Connecticut towns. Yet Hallock also embraced the new wholesale market and sold cauliflower by the barrel to the firm of Titus and Company which probably arrived there via the side-wheeler steam ship *W.W. Coit*. Surviving freight registers also indicate that at this time many farmers on Long Island's North Fork shipped cauliflower, potatoes and other items by rail to commission merchants and produce dealers in Brooklyn, New York and Long Island City.\footnote{51}

Other freighters adjusted to the new market conditions by turning from sea to land and depot to dock. Retaining the title of “Captain” they leased railroad cars and accompanied their cargoes to New York where they sold them on commission. Some freighters also leased warehouse space and pasture to merchants and drovers from the interior. They were not alone in this endeavor and competed with merchants who had no previous connections to the sea. Suffolk County merchant-farmer John Downs purchased eggs, potatoes, fresh meat and grain and shipped these items in leased rail car to wholesale merchants in New York or Brooklyn. Freighting by rail, then, appears to have been a healthy adaptation to new wholesale market conditions.\footnote{52}

The gradual sale and development of coastal real estate in the 1830s and 1840s (see Chapter 2) and the geographic expansion of the production of highly perishable foodstuffs meant that increasing numbers of producers would be located inland, away from navigable waterways. Near-urban farmers less adept in their seafaring skills who chose to attend the
wholesale markets arrived in wagons, rather than boats. For example, Richard and John Cooper began farming together in the mid-1840s. In 1847 they raised for market 342 bushels of peas, 1,500 bushels of potatoes, and an equal number of tomatoes, plus numerous other highly perishable items. Since their thirty-two acre farm was located some ten miles from New York Harbor, they could only get to market by wagon.\(^5^3\)

Agriculturists also found that sailing to market was less convenient than it had been in an earlier day. Continuous building and poorly planned construction projects along the waterfronts of New York, New Jersey and Long Island made it increasingly difficult to find space for farmers to moor their boats. In past years the Common Council had granted special rights to retailers to dock near the some markets. Over the years this privilege turned into a “right” which agriculturists and marketmen wasted no time reminding the Common Council. For example, the construction of a fish market at the head of Fulton slip so limited space that “many have been compelled to abandon [Fulton] Market on account of their being no dock birth [sic] to come in at and have been driven over to the Washington Market.” But expansion of the shoreline near that market throughout the 1840s also limited space for market boats.\(^5^4\)

Nor did a legislative body that increasingly questioned the future of the public retail market system always agree that market boats should received preferential use of valuable waterfront space. A May, 1822 a petition from William Daskarm and others requesting that the City reserve space for market boats along the East side of Peck slip was denied because of a concern of “favoritism” on the part of the Council. This indicates that the Council viewed appearances more heavily that the need of special protections for farmers and gardeners.
Market boats also brought in less income through wharfage fees than larger boats. In the spirit of raising revenues, the Common Council also leased a portion of Fulton slip to a ferry company in the early 1820s. This compelled market-goers who arrived in boats as small as canoes to share dock space with steamboats. Despite complaints that the turbulence created by paddle wheels caused small boats to capsize and smash against their moorings, a generally dangerous situation, Fulton slip remained a major ferry landing.\textsuperscript{55}

Regulating the slips also posed a special challenge even though municipal regulations required that boat owners paint their names on the stems of the craft. It is apparent from petitions from the area around Washington Market that boat owners simply ignored restrictions and moored their boats in slips reserved for marketmen. This meant that the farmers had to find other places to dock and pay wharfage and then cartage to get their produce to market. The boat owners also faced other miscellaneous nuisances which must have made the trip to New York difficult. For example, boat owners attempting to dock near the west end of Chambers and Reade Streets in the late 1830s faced the unpleasant fact that they shared berths with manure boats. In addition to a stench so bad that market boatmen tying up “almost turned sick,” upon returning from the market farmers frequently discovered that refuse from the ongoing loading process had filled their boats.\textsuperscript{56}

Farmers and gardeners also found that in the new age of steam transportation it was inconvenient and anachronistic to depend on tides that restricted time and direction of travel. Competitors from local, as well as southern ports whom also sold to New York wholesalers shipped by steam. Finally, sailboat owners faced the usual hazards associated with sailing at night in New York harbor and vicinity. A correspondent to \textit{Harper's Weekly} noted in March
1857 that navigation on the Hudson had just resumed for spring and that consumers could expect a flood of farm produce in the markets in the near future. Certainly, farmers would have preferred to sell these items gradually rather than all at once. Wholesalers offered relief from all these problems.\(^57\)

Statistics on market wagons indicate that this form of transportation became important after 1815. Before this date the major obstacle to farmers and gardeners wishing to drive to New York City lay with the ferries. When loaded with large items like wagons or livestock, sailing ferries sometimes capsized. Out of caution, many farmers chose to leave wagon and team on shore and load their produce directly on board the boat. Unfortunately, upon crossing the farmer then had to pay a cartman to carry the goods to the country market. After 1815 the introduction of “team boats” and steam ferries permitted farmers to board less dangerously, but given the advantages of market boats and cultural practices it took another generation for large numbers of farmers to drive to market. Turnpike construction in the 1820s and a gradual understanding of the importance of good roads helped increase wagon traffic. Table 4.6 provides an idea of the relatively small number of wagons crossing at Fulton Ferry, a major terminal in Brooklyn in the middle 1830s. Even in the 1840s the Clerks of Union, Centre, Catherine and Washington Markets reported only eight to forty

<table>
<thead>
<tr>
<th>Conveyance</th>
<th>13 Sept</th>
<th>3 Oct</th>
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<tbody>
<tr>
<td>Milk Carts</td>
<td>49</td>
<td>51</td>
</tr>
<tr>
<td>Loaded Carts</td>
<td>313</td>
<td>321</td>
</tr>
<tr>
<td>Empty Carts</td>
<td>138</td>
<td>140</td>
</tr>
<tr>
<td>Loaded Wagons</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>Empty Wagons</td>
<td>27</td>
<td>30</td>
</tr>
</tbody>
</table>

wagons arriving daily in the summer months. Given that Catherine and Washington country
markets were two of the most important in the city, these low numbers suggest that the
agrarian retailers arrived by other means.\textsuperscript{58}

Reports from the 1850s and later show heightened interest in use of vehicles called
"market wagons" (Figure 4.9) rather than the older Jersey farm wagon. Business owners
displayed market wagons at local fairs such as the one built by the Jamaica firm of Reeves
and Co. that held sixty bushels of potatoes. Travel statistics also report increased wagon
traffic. One report claimed that nearly three hundred strawberry wagons crossed the Hudson
River at Hoboken one night in the spring of 1856. A gate keeper on the Bergen Turnpike
counted 170 farm wagons bound for New York pass between the hours of 8:00 P.M. and 4:00
A.M. Another toll gate keeper counted 124 farm wagons on the Jamaica Turnpike over a six-
hour period in 1859. Many -- probably most -- of these were destined for Washington
Market, the center of the wholesale trade. Thomas DeVoe claimed that 300 farm wagons
arrived every morning at Washington Market in the early 1860s, a number which swelled to
as many as 2,000 during peak season. Farm wagon traffic continued to grow through the
1860s, to the point where it caused traffic problems in the streets of New York and
Brooklyn.\textsuperscript{59}

One characteristic of marketing that did not change for producers regardless of whether
they sold retail or wholesale, or their chosen mode of transportation, is leaving early in the
morning. In fact, wholesale merchants required that deliveries be made even earlier than
consumers in the retail market. According to an observer in the early 1880s, “nearly all the
produce raised within twenty-five miles of New York is carted in with teams by the
proprietors in the night" and this appears to have been true. Thomas De Voe and others claimed that the busiest hours at the Washington wholesale market were from midnight to seven o'clock in the morning. Considering these early hours, producers left home the evening of the previous day. Made two and sometimes three days a week in-season, trips of fifteen, twenty and more miles became commonplace for farmers who raised perishables for the New York market.60

Thus the urban wholesale market created a new set of expectations special to farmers and gardeners living near cities. Frederick Van Wyck, a Long Island farmer recalled as a young man that market days involved long hours without sleep. He helped pick vegetables in the morning and departed by wagon after the midday meal. The trip to the Washington Market took around six hours and he arrived in the evening. After feeding and watering his team at a local stable, Van Wyck parked them in the street outside the closed market. Then the young farmer would grab dinner at a local tavern (he preferred Smith and McNeil's Chop House) and rent a room for a few hours sleep. Awaking around 3:30 he would drive into the market, park and face the team into the front of the wagon where some hay had been placed.
By 7:00 A.M. he had sold all this produce to grocers and returned home by noon, fully twenty-four hours after departing. Others made stops along the way at places like the Kings County’s East New York House (Figure 4.10), conveniently located along well-traveled routes where drivers could get a bite to eat, and give the team a rest.  

![Business Card, c.1875](source)

**East New York House,**
Corner of Jamaica Plank Road and Furman Place, East New York, L.I.

Edward N. Duryee, Jr., Proprietor.
Open Day and Night.
Excellent Accommodations for Farmers and their Horses.
MEALS AT ALL HOURS.

Figure 4.10 Business Card, c.1875

Source: Carman Collection, Long Island Studies Institute, Hofstra University, Hempstead, New York.

Within two decades after the development of the new wholesale market, it had taken control of the sale and distribution of farm produce in the New York City Region. At the same time agriculture in New York and New Jersey underwent an important shift from grain-livestock culture to one emphasizing local markets. Dairying, fruits and vegetables, veal, and lamb became the hallmarks of agriculture here. Although slightly later in occurrence, similar changes in the structure of the market took place in other parts of the country. The concentration of grain marketing and meat processing at Chicago is one important example.

Farmers embraced the new wholesale market because it had so much to offer. It saved grain farmers from destruction at the hands of their Western competitors and the ravages of
Eastern insects. It provided more regular income. It released families from the influence of country storekeepers, and allowed these merchants to switch to an all-cash business. It provided an alternative to the horrors of the retail public markets. On the other hand, agriculturists received some things for which they did not bargain. The most important of these is price. Wholesale prices are lower than retail. As retailers, farmers could set their own prices, but as wholesalers, they transferred this control to someone sitting behind a desk in New York. It took many years for this realization to occur, because prices remained more or less satisfactory for many years. The gravity of this decision became apparent to vegetable growers in the 1860s and milk producers and fruit growers in the 1870s. It fueled participation in organizations like the Patrons of Husbandry, which enjoyed strong membership in the rural Northeast, and the Farmers Alliance, and smaller local organizations such as the Bedford Farmers’ Club, the Queens County Farmers’ Mutual Protection Organization, the Suffolk County Berry and Cauliflower Growers’ Association, and the Dairymen’s League.
Notes


2 Diary of Rebecca Vail, 29 April 1847, 24 May 1847, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey.


5 Clark, *Roots of Rural Capitalism*, 164; Barber, *Historical Collections of New Jersey*, 191; Peter O. Wacker and Paul G.E. Clemens, *Land Use in Early New Jersey: A Historical Geography* (Newark: New Jersey Historical Society, 1995), 25; Mary carried butter “to town” [Springfield]. Since Gordon’s Gazetteer reports only 1 store here in 1832, I am assuming she is trading with John Little. Diary of Elizabeth Mulford Crane, 11 June 1824, 22 March 1825, 4 October 1826, typescript, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey. Crane does not indicate what form of payment she received for her butter trade, but on 1 February 1825 storekeeper John Little paid John Crane $20. Given the large quantities delivered to Little, it is likely this was for butter. For poultry sales see 30 June 1824, 28 June, and 11 August 1826.


Untrustworthiness lead to reduced business and willingness on the part of creditors to lend money. Carnes, “Rise and Fall of a Mercantile Town,” 23-4; Beal, “Selling Gotham,” 419-20.

Allan Keller, *Life Along the Hudson* (Tarrytown, New York: Sleepy Hollow Restorations, 1976), 96; Gary Karasik, *New Brunswick and Middlesex County: The Hub and the Wheel, An Illustrated History* (Northridge, California: Windsor Publications), 39; Marcus, “Patterns of Power.” 53; For information on Captain James Peck, see entries for the year 1846 in Udall Saw Mill Account Book; New Jersey merchant Thomas M. Leonard piloted the a schooner between New Jersey and New York City. See Thomas De Voe, *The Market Book* (New York, 1862), 445; and Seventh Census of the United States, 1850, Mss. Schedule 1, Middletown, New Jersey; Clark, *Roots of Rural Capitalism*, estimates (pp.166) that bad debts to storekeepers could run as high as 12 percent.

Harriet Andrus says that boat captains sold on commission which would indicate that they sought high prices. Although unusual, captains surely offered this service. Harriet G. and Andrus T. Valentine, *An Island’s People “One Foot in the Sea, One on Shore”* (Huntington,

17 For example, see Duncombe, 87; David Cole, *History of Rockland County, New York* (1884; reprint New City, New York: Historical Society of Rockland County, 1986), 180; "59th Trip of Sloop Eclipse" [December, 1834], vol. 1, William Little and Company Records, Middletown Point, New Jersey, MG 1244, New Jersey Historical Society, Newark, New Jersey. Note that account books have survived for two different boats named Eclipse. One operated on the Hudson River in the 1820s and the other out of Middletown Point, New Jersey in the 1830s.


20 Account Book of Sloop Eclipse, 8 July 1826, 10 April 1826, NYHS.
21 "59th Trip of the Sloop Eclipse, NJHS; “Sloop Monmouth 30th Trip, August 30, 1834,”; Day Book of the Hicksville, Long Island Nursery, 1 September, 16 October 1857, New-York Historical Society; Account Book of Sloop Eclipse, 10 June 1826, NYHS.

22 Harrington, New York Merchant, 280; State law and local ordinances (which changed periodically) regulated inspection and related aspects of marketing, such as the use of standard weights and measures. On inspection in New York City, see Gordon, Gazetteer of the State of New York, 249-52; On labeling see (pp.244); On state law regarding weights and measures see J.H. French, Gazetteer of the State of New York, (Syracuse: R. Pearsall Smith, 1860), 38-9; Coteral grossed $134.63 on the sale of firewood. “Sloop Monmouth 46th Trip November 24, 1834;”; Ezekiel P. Belden, New York Past, Present and Future 3d (New York: Prall, Lewis, 1850), 51-52; “59th Trip of the Sloop Eclipse, NJHS.

23 Atherton, Southern Country Store, 28-29; For a variation on this theme with storekeepers see Clark, Roots of Rural Capitalism, 168; Account Book of Sloop Eclipse, 10 June 1826, NYHS: Benjamin Strong to Thomas S. Strong, 20 June 1827, Strong Collection, Emma S. Clark Library, Setauket, New York.

24 Adriance Van Brunt purchased the Dread second-hand for $500 in 1828. Diary of Adriance Van Brunt, 10 June 1828; Receipts, Thomas S. Strong to Smith and Darling for $300, 12 March 1836, and $100, 2 May 1836, Miscellaneous Receipts of Thomas S. Strong, Strong Collection, EMSC; “Inventory and Appraisal of the Personal Property of Thomas S. Strong, dec[eased] May 23 1840” Strong Collection, EMSC; Lucius Hallock wrote in his diary “Friday, February 4, 1876 Bought the Caraway Sea Gull of T.F. Rice for $500. & John Latham agreed to run her for me this Season for two thirds of her freight, the boat to draw one third.” Halyoake Farm Diary, typescript, Hallockville Museum Farm, Northville, New York: Account Book of James H. Weeks, 27 April, 27 June, 8 July 1835 vol. 1 New-York Historical Society; Marcus, “Patterns of Power,” 52.

listings of local and national steamboat and railroad service. According to Phelps' New York City Directory (New York: Ensign, Bridgman and Fanning, 1857), (pp.54-55) 12 steamboats ran between Manhattan and New Jersey, 7 between Long Island, 5 between Staten Island and 16 between New York and the lower Hudson Valley; For a list of completion dates and routes for railroads, see Hunts Merchants Magazine 33 no. 1 (January 1855): 124; Robert Hartley, An Historical, Scientific and Practical Essay on Milk (New York: Jonathan Leavitt, 1842), 18.


27 A sudden increase in the appearance of wholesale merchants' business cards may be observed in various farm archives collections. For example, see the Carman Collection, LISI; NYSAS. Transactions 21 (1861) New York State Assembly Document 252 (Albany: Charles Van Benthuysen, 1862), 267-68; An examination of New York City business directories shows that increasing numbers of “dealers” in farm produce were located near Washington Market. For Washington Market expansion of 1843-47 and the opening of West Washington Market see De Voe, Market Book, 444-45; Stokes, Iconography vol. 5, pp.1805, 1871; The editor of the New Jersey Farmer 1 no. 9 (May 1856) commented that farmers sold potatoes at railroad stations and boat landings. This is a trademark of city wholesalers merchants; Beal, “Selling Gotham,” 419; James D. McCabe Jr., Lights and Shadows of New York Life (Philadelphia: National Publishing, 1872), 489; In the Mid-Hudson Valley storekeepers began to reject barter for cash-only for purchases between 1840 and 1860. Stuart M. Blumin, The Urban Threshold: Growth and Change in a Nineteenth Century American Community (Chicago: University of Chicago Press, 1976), 59-61; For the farmers’ preference for wholesale markets, see De Voe, Market Book, 426, 441-42.


31 Mott, Between the Ocean and the Lakes, 381, 408; John Mullaly, The Milk Trade of New York and Vicinity (New York: Fowlers and Wells, 1853), 75-76; Commissioner of Patents, Annual Report, 1861, Agriculture, 216, 218; The stations mentioned are on the Erie, Harlem, and Long Island Railroad lines; Disturnell, comp., The Traveler's Guide to the Hudson River, 13, 15-16, 38; Allan Nevins, ed. The Diary of Philip Hone, 1828-1851 (New York: Dodd, Mead, 1936), 711; Petition of John M. Wood and Edward Phillips, 23 October 1847, City Clerk's Papers, Finance Folder, MARC.


34 On swill milk, see Ibid, 237-38; Mullaly, Milk Trade of New York, 55-6.

35 Mott, Between the Ocean and the Lakes, 381, 408; Commissioner of Patents, Annual Report, 1861, Agriculture, 216, 217-219; Mullaly, Milk Trade of New York, viii, 73, 84; John J. Dillon, Seven Decades of Milk (New York: Orange Judd, 1941), 4; Burrows, Gotham: A History of New York City, 656; New Jersey Farmer 5 no. 1 (September 1859): 18; Disturnell, Traveler's Guide, 13-14; A reprint of a water color sketch made in 1859 of a loaded milk wagon may be see in John A. Kouwenhoven, The Columbia Historical Portrait of New York [Garden City, New York: Doubleday, 1953], 262. Note the stenciled words “Orange County” on the side of both wagon and on milk cans.


The Horticulturist n.s. 3 no. 11 (November 1853): 517; The same story appeared in the New Jersey Farmer 1 (October 1855); For an examples of proper packing suggestions, see Long Islander n.s., 3 (15 July 1859): n.p., or similar articles in Horticulturist by “City Cartman” and “West Washington Market” 18 (June 1863): 178, 189-90; Wholesale strawberry dealers generally sold on commission and charged a 10 percent fee for this service. Complaints about cheating by New York commission merchants prompted the New Jersey Cranberry Growers Association and the Peach Growers Association of Maryland and Delaware to lobby the New York State legislature for regulatory relief. Annual Report of the New Jersey State Agricultural Society for the Year 1874 (Newark: Newark Daily Journal - W.B. Guild Steam Book and Job Printer, 1875), 65-7; According to David Ellis in Landlords and Farmers (pp.205) butter merchants usually made arrangements in the autumn, but such decision appear to be more connected to the purchasing of crop than the calendar year.

Diary of Isaac Webster, 20, 30 June, 8, 20 July 1854, see also various entries for the month of August 1854, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey; Wilson’s Business Directory of New York City [1865-66], 384.

Diary of Isaac Webster, 10 August, see various entries for August 1854; Horticulturist n.s., 3 (November 1853): 517; A “New York Dealer” also took responsibility for transporting blackberries purchased in Westchester County, rather than letting the grower make such arrangements. Ibid, (May 1853): 240.


Diary of Selah Wicks, 9 March 1855, 19 January 1856, Suffolk County Historical Society, Riverhead, New York; Diary of Isaac Webster, 11 July 1854; Seventh Census, Mss. Schedule 1, South Brunswick, New Jersey; “Watercress Sales” Lots 1-15, March-June 1874, Berry Book of Alfred Cutting, MS-3, box 1, folder 7, Staten Island Historical Society; Account Book of Alfred Cutting, 2 March, 5-6 April, 1870, MS-3, box 1, folder 3; Wilson’s Business Directory of New York City [1865-66], 384; S.W. Fletcher, The Strawberry in North America (New York: Macmillan, 1917), 86; Lucius Hallock “Went to Greenport and got 2,000 Berry Baskets” on 7 June 1877, Halyoake Farm Diary.

Account Book of Augustus Hasbrouck, Account with L.B. Van Order, August-October 1861, New Jersey Mss., Farleigh Dickinson University, Teaneck, New Jersey. It is likely that Augustus Hasbrouck had kin in the Saddle River area where he conducted business as the
census and other sources indicate that Hasbrouck is a common Bergen County name; Diary of Selah Wicks, 1 February 1856; Account Book of Alfred Cutting, 5, 21 May 1877; Receipt of Josiah Rogers, 22 July 1843, Joseph King Financial Papers.

47 Mott, *Between the Ocean and the Lakes*, 379; Statistics are for the year 1845, see *Hunts Merchants Magazine* (October 1850): 438-439.


50 Duncombe, *Katonah*, 118; Diary of Isaac Oakley, 10 October 1874; Diary of Selah Wickes, 24-25 March 1856. Wickes may have used this boat because heavy, late-season snowfall had delayed the railroad.


The Common Council did not grant special docking rights to farmers who attended the Fly Market. This is one reason why farmers supported the construction of the new Fulton Market in 1821. De Voe, *Market Book*, 489; The tone used by petitioners and their sometimes outright use if the word “right” indicates they confused privilege with right (pp. 445); Petition of Farmers and Market Boat men, 3 August 1842, City Clerk’s Papers, Markets Folder, MARC.


*Laws and Ordinances*, 199; De Voe, *Market Book*, 445; Petition of Morean and Parker and Others, 26 May 1847, City Clerk’s Papers, Markets Folder, MARC; Petition, 9 March 1841, City Clerk’s Papers, Cleaning Streets Folder, MARC; Petition from a Number of Citizens, 3 June 1839, City Clerk’s Papers, Cleaning Streets Folder, MARC.

Moehring, *Public Works and the Pattern of Urban Real Estate Growth*, 3; For problems with tides, see De Voe, *Market Book*, 489, towing, (pp.137-38); Even though the Hudson River was choked with ice during the off season, this condition prevented farmers from disposing of stored produce. For a calendar of River closure and opening dates see *Hunts Merchants Magazine* 2 (June 1840): 346; *Harper’s Weekly Journal* 1 (7 March 1857): 159; S. Barker, a marketman at Washington Market recommended to readers that they hold potatoes off the market until after the Hudson River froze because the price would then rise. *New Jersey Farmer* 1 no. 2 (October 1855): 35.

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On crossing the East River by steam ferry, see John Fowler *Journal of a Tour in the State of New York* (London: Whittaker, Treacher and Arnot, 1831), 31n; One August night in 1830 Fowler counted 11 wagons containing fruits and vegetables cross the East River from Brooklyn (pp.25); Wagon counts for Union (1 August), Centre (1 August), Catherine (31 July) and Washington (931 July) Markets are filed together in City Clerk’s Papers, Markets Folder, 1846, MARC.

59 Peter Neilson, *Recollections of Six Years Residence in the United States of America* (Glasgow: David Robertson, 1830), 126; NYSAS, *Transactions* 9 (1851): 594; Hessler, “The Spirit of Progress,” writes (pp.134) that beginning in the second quarter of the 19th century rural Long Islanders developed “a more distinct awareness of the specialties attributable to all forms of transportation generally.” This idea that farmers viewed horse drawn vehicles as having specific purposes fits with my observation during the same period of increased use of market wagons. See also (pp.121-22, 135). For a photo of a late century market wagon see (pp.134); *Bergen County, New Jersey History and Heritage*, 4:77; NYSAS, *Transactions* 19 (1859) New York State Assembly Document 181 (Albany: Charles Van Benthuysen, 1860), 543; The observation of heavy traffic on the Jamaica Turnpike may be suspect as it appears in different sources as occurring on very different dates. Hessler, “The Spirit of Progress, 122; De Voe, *Market Book*, 448; Stiles, *History of Kings County*, vol. 2:971; An estimated 175 farm wagons lined up every day along Broad Street in Newark c.1880 during the summer months. Waring, *Report on the Social Statistics of Cities*, 711.


CHAPTER 5. THE AGRICULTURAL YEAR BEGINS: SPRING

More than anything else, spring weather marks the start of a new agricultural year. In early March, warm spring winds release the New York City region from three months of captivity in snow and ice. Melting snow, frequent rains, strong winds and mud mark the arrival of spring. By late March the frost has left the ground across much of the region. Daytime temperatures rise into the forties and higher, although freezing nocturnal temperatures continue into April, and even May in higher elevations. Spring brings forth new life that is visible not only in the greening of the landscape, but also with the birth of lambs, calves, colts and various barnyard fowl. Two full months after the start of the calendar year agrarian Americans quietly noted the beginning of the agricultural year.

The new year was a time for business relationships to be renewed, supplies ordered, and tools and equipment purchased. Annual farm hands returned to work after being “dismissed” back in December and farmers sought out fresh supplies of hired labor. Ground leases were signed or renewed. For twenty-eight year old Kings County farmer John C. Bergen, March 1, 1854 held tremendous significance as it was the day “father gives me charge of the farm.” Across the New York City region, a bit earlier in some places and later in others, the month of March held cultural significance because it heralded the arrival of spring, the start of the agricultural year.1

As explained in Chapter 1, an irony exists that agrarian residents of the New York City region lived by a seasonal calendar, located as they were in the shadow of the largest non-farming concentration of population in the United States. Differing conceptions of the passage of time is one fundamental difference between rural and urban. In New York and its
bustling sister cities, by all accounts commerce dominated life. Birthplace of the steamship and packet boat, where ferries and trains arrived and departed on regular schedules, and the telegraph and daily paper provided information faster than ever before, urban life in New York and New Jersey was fast-paced, to say the least. Life on the farm was much slower paced and regulated not by clocks and calendars, but the sun, the tides and seasonal variation.

Spring activity on the farm and garden involved some of the heaviest work of the year and also included the greatest variety of tasks. Agriculturists engaged in three main types of work from March to June: working in the fields, with livestock, and performing miscellaneous seasonal tasks. Commercial gardeners and nurserymen inaugurated the new agricultural year first by readying structures called “hot beds” (Figure 5.1) in early March. Horticulturists used hot beds to start garden seed well before plants could survive outdoors on their own. Essentially a miniature greenhouse, the hot bed consisted of wooden frame carefully positioned over a manure (or tan bark) filled pit. The decomposition of this organic matter provided heat that lasted for weeks. Every bed had a glass top that allowed light to enter, while protecting tender plants from exposure to the elements. Simple in design, but with expensive component parts, hot beds held a central place in European gardening for more than a century before their importation to America around 1800. Like many agricultural innovations, immigrant horticulturists carried this technology overseas. Where long winters and cool springs prevailed, they were critical to the existence of a commercial gardening industry.²

Hot beds extended the growing season backward in time, and herein lay their importance. Seed sown in beds in March matured weeks earlier than those sown later,
outdoors. Since market prices peaked early in the season, gardeners received significant financial rewards for early maturing crops. Yet in the New York City region eager (or inexperienced) gardeners sometimes sowed seed in the beds too early. Then, when the plants reached a size large enough to be transplanted outdoors, few could stand the cold weather. More than one gardener learned this the hard way. Cold weather in the third week of April, 1834 set back New York area vegetable growers and occasioned some replanting. And in the spring of 1821 New York gardener William Curr lost fully 25 percent of his broccoli crop, because he transplanted them outdoors before the threat of frost had subsided.  

Only in the mildest sections of the region, located near the water, could gardeners sow hardy, cool weather crops in the outside air before April first. Crops like lettuce, spinach and watercress could stand frosty nights and still mature for harvest toward the end of April. Flower growers, seeking "showy annuals early in bloom" also sowed in hot beds in March. Horticulturists raising larger and more delicate plants like cabbages, cucumbers, tomatoes, peppers and eggplants waited to sow in hot beds until late March or early April, and then transplanted outdoors in mid-May after the threat of frost had subsided.
Hot bed construction took one to two weeks and entailed a level of planning not usually characteristic of American agriculture. Gardeners started out by collecting quantities of fresh horse manure, to place in pits two or three feet deep. They spaded six to eight inches of soil on top and positioned homemade wood “frames,” sloped to promote runoff and maximize solar radiation, over the pits. Large (3’x6’) sashes with glazed panes slid carefully into place on top. Gardening handbooks recommended two to four of these “lights” per frame. Built in this fashion, hot bed lights spread down rows hundreds of feet in length. For example Flatlands, New York farmer and gardener Elijah Kimball built 300 feet of beds in the spring of 1851, in which he raised, among other vegetables, 20,000 celery plants.5

Gardeners could expect to pay from $1.50 to $4.50 per foot for the construction of a bed. Long Island farmer and gardener Lucius Hallock provides insight into the cost and construction of a set in the early 1870s:

February 28th [1873] Have made a hot bed 42 ft long and 6 ft wide, in which to raise cabbage plants. . . . 12 ft of it are covered with oiled cotton cloth and 30 ft with glass. The part covered with glass is dug out 1 foot deep and the other is made entirely above ground. It is filled with horse manure to the depth of one foot; on which is 3 inches of soil. Sash cost $3.15 each. Total cost of bed including manure $50.95.

Glass window sashes represented the greatest portion of this investment, adding up to considerable sums, considering that the average farmer in the region owned only $150 worth of tools and implements. For example, upon his death in the winter of 1865, Newark gardener William Richards left standing “in the field” five “old sash” worth a total of $2.50, twenty-nine “light sash” rated at a dollar each, and forty “heavy sash” valued at $100. Not every gardening family could afford such an investment, but those who did had a distinct advantage over their competitors.6
Properly constructed, a bed remained warm for up to twelve weeks even when outside temperatures plunged below the freezing mark. Excessive heat actually posed a problem, because with the sashes closed internal temperatures could rise to seventy-five degrees on an overcast day and far higher in sunshine. Seeking more moderate temperatures of fifty to sixty degrees gardeners took care to lower or raise the sashes throughout the day as necessary to retain or to permit warm air to escape. In severe cold they piled manure around the sides of the frames and covered the sashes with "shutters, boards, mats or the like" to retain heat. Sometimes windbreaks were built to protect against the cooling effect of wintry blasts. Although greenhouses replaced the need for hot beds, these larger structures were even more expensive, so the beds remained critical to producers of early and late season garden crops into the twentieth century. The hot bed permitted horticulturists in temperate climates to produce garden crops for two to three months longer than they would otherwise have been able.7

Like gardeners, farmers also began preparations for outdoor planting in spring. Obtaining a supply of manure also rated among their primary concerns. Two centuries of cultivation had long depleted the natural fertility of soil in eastern New York and New Jersey. Contemporary writers and later, historians emphasize through the first half of the nineteenth century most farmers either did not understand or care about replacing fertilizing nutrients into the soil. They note a few exceptions: along the Mid-Atlantic coast; in Southeastern Pennsylvania; and near large cities. Yet within the New York City region agriculturists added a variety of fertilizing elements to the soil. They did this during field preparation, at planting time and even after germination. Well before 1800, soil exhaustion had forced
farmers in northern New Jersey and eastern New York State to exploit the nitrogen fixing capabilities of clover and peas, to rotate crops, and to add supplements to the soil like gypsum, marl, lime and animal dung. This is just one of the ways agriculturists in the New York City region distinguished themselves from the average Northern farmer.  

Years before an agricultural press even existed to support such practices, farmers and gardeners added potash, fish and seaweed, night soil and street manure to their soils. They also remained open to new methods, using "muck" and ground bones in the 1830s, poudrette and guano in the 1840s, super-phosphate in the 1850s and eventually concentrated commercial fertilizers. The extent to which agriculturists in nine downstate New York counties used fertilizers stands out in contrast to their agrarian peers in the rest of the state. Although it was true far earlier, the fact became statistically evident in New York when State Census Marshals asked agriculturists for the "value of special manures, including lime, guano, poudrette," used on the farm for the year 1854-1855. While incomplete, the results, shown in table 5.1 reveal a pattern of heavy fertilizer use in eight New York State counties. National data from the Tenth Census (1880) indicate that this pattern continued late into the century.

Animal dung remained the most important fertilizing additive throughout the nineteenth century because it was available and it worked so well. Farmers generally spread manure in the spring and again in the autumn, but gardeners applied it spring, summer and fall. Thawing spring rains and warmer temperatures permitted commencement of the Herculean task of cleaning out winter accumulations from stables, stalls and enclosed yards. Sometimes improving farmers preceded this activity by adding straw or salt hay to pens and yards in
Table 5.1 Quantity and Value of Special Manures Used in Eight New York Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Ashes (Bushels)</th>
<th>Bone Dust (Tons)</th>
<th>Guano (Tons)</th>
<th>Gypsum (Tons)</th>
<th>Lime (Bushels)</th>
<th>Miscellaneous (Value in Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kings</td>
<td>1,730 (6)</td>
<td>150 (2)</td>
<td>45 (5)</td>
<td>0</td>
<td>0</td>
<td>21,491 (2)</td>
</tr>
<tr>
<td>Orange</td>
<td>330 (12)</td>
<td>101 (4)</td>
<td>27 (9)</td>
<td>1,596 (14)</td>
<td>1,485 (11)</td>
<td>1,302 (10)</td>
</tr>
<tr>
<td>Putnam</td>
<td>200 (15)</td>
<td>85 (5)</td>
<td>27 (8)</td>
<td>616 (33)</td>
<td>300 (18)</td>
<td>95 (30)</td>
</tr>
<tr>
<td>Queens</td>
<td>0</td>
<td>0</td>
<td>1,207 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Richmond</td>
<td>0</td>
<td>60 (6)</td>
<td>13 (12)</td>
<td>0</td>
<td>0</td>
<td>130 (26)</td>
</tr>
<tr>
<td>Rockland</td>
<td>0</td>
<td>0</td>
<td>250a(35)</td>
<td>0</td>
<td>5,300 (6)</td>
<td>4,437 (5)</td>
</tr>
<tr>
<td>Suffolk</td>
<td>50,632 (1)</td>
<td>11,721 (1)</td>
<td>1,059 (2)</td>
<td>3</td>
<td>15,735 (2)</td>
<td>120,756 (1)</td>
</tr>
<tr>
<td>Westchester</td>
<td>0</td>
<td>4,112 (2)</td>
<td>172 (3)</td>
<td>426 (38)</td>
<td>7,700 (3)</td>
<td>9,155 (3)</td>
</tr>
</tbody>
</table>

|                | Subtotal         | 52,892           | 16,229       | 2,523         | 2,025         | 30,520                          | 157,366                          |
|                | Percent of Total | 78%              | 99%          | 90%           | 3%            | 28%                             | 86%                              |
|                | State Total      | 67,498           | 16,439       | 2,800         | 60,811        | 110,022                         | 182,162                          |


* Measured in pounds

Note: There were 60 counties in New York State on June 1, 1855. No report was received for New York County. Rank out of 59 counties is expressed in parentheses.

In order to increase the bulk of available material, coastal farmers routinely forked seaweed into hog pens in the early spring and late winter for this very reason. In March and April, from Montauk to Monmouth they carted manure to the fields and either spread it over the ground or piled it in heaps for later application. Eager men plowed it in on the same day, but often up to a month could pass before plowing, especially if poor weather intervened. This caused the manure to leach its nitrogen, which reduced its value as a soil additive.9

Cities and towns provided farmers and gardeners with a source of animal manure and other organic waste products. As explained in Chapter 1, these materials were critical to sustaining intensive horticulture, but farmers purchased them as well. In fact, an urban-rural fertilizer trade took place through much of the year, although the majority of transactions
were made in the spring. The City of New York actually sold manure as early as the 1760s to farmers residing within hauling distance of docks or landings and to commercial gardeners on the fringes of densely populated areas. Retail market-goers and others filled their boats and wagons with animal dung at public wharves, or from private stables. This exchange of food for fertilizer has been described by one historian as a "recycling system" and use of these resources yielded powerful financial rewards. Writing in 1804 Timothy Dwight noted that farmers in western Long Island had "grown rich" through the use of organic waste and stable dung purchased in the city of New York. Referring to high rents paid by city gardeners another writer observed "the urban farmer can afford to sell his produce off the farm because the very market which consumes it furnishes him with an abundance of cheap manure."

Farmers and gardeners accessible to these resources took full advantage. This contrasts greatly with the image of the soil-miner, as depicted by "progressive" farmers and agricultural journal editors.10

The New York City manure trade evolved from a public to a private system over the course of a century. From the 1760s to the 1840s farmers and gardeners purchased "street dirt" directly from the Corporation of the City of New York. Charged by the Common Council to "sell all manure and garbage ... in the best manner, at the least cost and most profit" the Superintendent of Streets sold sweepings at twenty-five to thirty-five cents per fourteen bushel load. Scraped from crowded urban thoroughfares between the months of March and November, this combination of horse, cow and hog manure, household garbage and other organic matter was piled high in vacant lots in upper Manhattan, dumped in the East and Hudson Rivers, or carried to special wharves to be sold as fertilizer.11
Residents living the near manure piers braced on market days as farmers and gardeners stopped by in such numbers that they sometimes brought neighborhood traffic to a standstill. Farmers residing at greater distances, but near navigable water routes opted to purchase street dirt from private boatmen, a service for which they paid freight of fifteen to twenty cents per load. This resale trade was truly extensive. For example, in May 1847 the New York City Inspector recorded fifty transactions made with twenty-nine different sailing craft for manure. The boats held an average of sixty loads (845 bushels) each, valued at twenty-five cents per load. Freighting manure in the 1840s provided the captains of average-sized craft about $10 per trip, enough to persuade hundreds to engage in the trade.\textsuperscript{12}

The municipal government made it easy for such third party relationships to exist. Independent boatmen could run credit accounts for purchases made from the City. Under such an arrangement a sloop captain presented a certificate to the purchaser listing load size, unit price and total amount due, less freight. In signing the certificate, the recipient promised to pay for the cargo plus any penalties incurred as late payment. For example, on 14 August 1835, Joseph King received eighty loads (1,020 bushels) of New York City street dirt by way of Captain Duvall of the Meridian Sun. Duvall presented King with a certificate obligating him to pay $24 to the City within twenty days and $28 thereafter. Since King lived about fifteen miles from Manhattan, he likely paid Duvall $36 ($24 for early payment and $12 for freight). Upon his return to New York, Duvall would have delivered the payment to Street Superintendent Abraham Hatfield who would then mark King’s account paid.\textsuperscript{13}

This system worked well for many years, but by the 1850s rampant corruption, skyrocketing costs and the inability and outright unwillingness of private contractors to keep
streets clear of debris caused its demise. Even more important the agriculturists themselves found a better source of fertilizer: horse manure purchased from private stables and livery companies.\footnote{14}

Gardeners already used “old reliable stable manure” for hot beds because it produced even heat that lasted for weeks at a time. They also understood the product’s top rate fertilizing qualities. Street dirt on the other hand was almost certainly leached of its nitrogen due to long term exposure to air and water. Agriculturists surely recognized the limits of its fertilizing power without having to understand the chemistry. For example, Benjamin Strong urged his farming brother to buy the “first scraping” of the streets in the spring of 1836 because in his opinion, it made the best manure. Unlike stable manure, street dirt also contained impurities consisting of anything and everything New Yorkers threw out their front doors. One writer cautiously described street dirt as containing a variety of organic and vegetable “substances” from markets and residences and also certain \textit{inorganic} matter. Barbadian sugar planter Nathaniel Carrington penned a somewhat more detailed description while on a visit to New York in 1837, noting that “every filthy stuff is thrown into the streets; dead rats, cats and every kind of refuse are thrown into the streets.” These materials also ended up in New York City street dirt.\footnote{15}

Meanwhile, expanding cities and towns required more and more livestock to sustain their growth. In New York City, the establishment of omnibus service in the 1840s and rapid settlement north of Twenty-third Street fueled increasing demand for horses. Urban dairies consisting of cattle numbering in the thousands provided another supply of manure. The old recycling system took on a new dimension in the 1850s as increasing numbers of stable
owners purchased hay and oats and sold manure. Low quality street dirt sold by the City of New York could not compete with better quality manure sold by private suppliers. One Queens County farmer held the "opinion that nothing is equal to the horse and cattle manure . . . and has given a fair trial, having large quantities of both on his farm." Another "insist[ed] that the manure made by cattle and horses, be it ever so good, is by no means equal to the manure they procure from the sweepings of the streets in New York, a great deal of which is sand, with refuse matter thrown out of the house. He declares the difference is plainly visible." Thus while politics played some role in the awarding of street cleaning contracts, a more likely reason for the drastic decline in street dirt sales is agriculturists of the 1850s realized that stable manure was a better alternative for practical-minded agriculturists.16

Private sector traders (manure dealers, mill owners, country storekeepers and later commission merchants and agents for agrarian organizations) replaced municipally-run systems of highly-regulated sales. Richard and James Udall, owners of a saw mill some thirty miles east of New York City ran a profitable business in the 1840s reselling literally hundreds of loads of horse manure annually to area farmers. An advertisement from the Flushing, New York firm of Henry A. Peck and Company in the 1850s indicates "rail and water" were used to ship horse manure to "all points." Still later, farmer-run organizations, the predecessors of cooperatives, sold organic fertilizers. For example, the Farmers Protective Union of Queens County sold "clear horse manure" for 50 cents per ton in the 1870s. Commission merchants also entered the business. Finally, some farmers sought to eliminate the middlemen by contracting directly with stables. Privatization did not necessarily bring lower prices, but did allow a city of one million plus numerous smaller
towns to dispose of waste products efficiently while providing farmers and gardeners with an endless supply of nutrients for their soil. Far from rejecting the pleas of the agricultural press to improve their lands, agriculturists in the New York City region stood squarely at the vanguard of this effort.\textsuperscript{17}

The dunging of their fields and gardens now complete, agriculturists plowed it under or spaded it into the soil. Spring tillage began immediately after frost exited the ground in March, and continued through early June. For commercial gardeners planting late-maturing crops, the ground preparation process extended into the summer months. In addition both farmers and gardeners also performed a small amount of fall plowing, either for winter wheat and rye or for late season vegetables and root crops. The soil tillage technologies selected by these agriculturists provides a view of the level and rate of acceptance of modern tillage instruments. Like their choice to apply heavy doses of fertilizers on their lands, agriculturists in the New York City region recognized and accepted the advantages of improved tillage implements introduced after 1815. Although nationally farmers also accepted such new technologies rather quickly, they did so sooner in downstate New York and northern New Jersey.\textsuperscript{18}

The case of the cast-iron moldboard plow (Figure 5.2) provides one example of the rapid adoption of these improved implements. In much of the eastern United States wooden moldboard plow designs prevailed from the early colonial period through the 1860s. Yet farmers near New York City began to discard their wooden plows for cast iron moldboard designs far sooner. Cast iron plows appealed to practical minded agriculturists for several reasons. First, users easily recognized that the plows required less draft than their wooden
predecessors. Second, use of interchangeable parts offered more consistent performance and lower maintenance costs. Third, iron plows cut into the soil deeper than either wooden ones or iron "shovel plows." Near-urban farmers surely observed neighboring gardeners' ubiquitous use of spades to turn the soil deeply, and marveled at their impressive yields. Given the fact that in the 1820s these farmers already mimicked local gardeners by purchasing large quantities of manure, it is reasonable to believe that they might also be open to the idea (new at the time) of deep plowing. Falling implement prices through the 1820s and design improvements the following decade ensured widespread adoption of this improved implement beyond the boundaries of the region.19

Figure 5.2 Spring Plowing with a Cast Iron Moldboard Plow


New York City figures prominently in this story as a manufacturing center and urban proximity gave local farmers a first crack at testing out new plow types. For example, in 1800 a New York City iron founder was the sole manufacturer of the first American cast iron plow design. During the following two decades as better designs emerged, innovations by Peacock, Wood, Stevens and Ducher as well as foreign imports were available locally. For example, in 1818 Richard N. Harrison's agricultural implement store at 211 Front Street,
New York City "the only Establishment of the kind in the United States" offered ten English and six American designs. These early plows ranged in price from $2.25 for Small's 1-horse Scotch Plow to $16 for Peacock's no. 11 three-horse plow. In addition to Harrison's store, Gideon Freeborn, the largest plow manufacturer of that era sold nearly 7,000 cast iron plows over two years from a factory in lower Manhattan. Another New York City iron founder, self-described "plow manufacturer," John Mayher, commenced business around 1831 and continued to sell plows and other agricultural implements for forty years. Design improvements and mass production technology caused plow prices to fall through the 1820s and 1830s. The Patent Office registered 124 improvements for cast iron plows alone between 1800 and 1830. During this time the iron plow became competitive with, and then surpassed wood as a construction material. Implement prices were critically important because the low incomes prohibited costly up front investments in new technologies, as later implement manufacturers discovered. This is certainly true for the cast iron plow. According to one scholar the price of a single-horse plow fell by 50 percent between 1819 and the middle 1820s, to the affordable neighborhood of five dollars. Prouty and Mears designs, favorites in the 1840s and 1850s, sold for around ten dollars. In the early 1860s implement dealer Charles Mapes offered the popular "Eagle" plow (Figure 5.3) at prices ranging $3.25 for the "light horse" no. 14 and $8 for the "two horse" no. 21. Better plows at affordable prices permitted ownership of more than one. For example, in 1828 Kings County farmers Adriance Van Brunt owned two "common" plows, three Peacock plows and two Bergen patent plows.

While large implement manufacturing firms concentrated in New York City, a handful
Figure 5.3 Eagle no.78 Lock Coulter Cast Iron Plow

Source: Mapes, Illustrated Catalog, 35.

of factories engaging in small-scale production of plows and other tools grew up not far away. The lower Hudson Valley, where iron plows were in “limited use . . . by 1825” became something of a center of production. Gordon’s 1836 Gazetteer located one implement foundry in the village of Newburgh, two in Ramapo and three in Peekskill. A sprinkling of similar firms also existed across northern New Jersey.  

These local foundries flooded the surrounding countryside with plows and improved implements of their own design, with regionally popular designs manufactured under license, and with spare parts for both. The Westchester County firm of Minor and Horton, for example, inventors of the wildly successful “Peekskill” plow in mid-1830s sold this design throughout the Hudson Valley. In addition a million and a half casts of Peekskill plows were produced nationally between 1835 and 1867. Heavy advertising campaigns and plowing matches held under the auspices of the American Institute of the City of New York in the late 1830s and county agricultural societies in the 1840s attracted hundreds of people and helped increase use of cast iron through the region. The availability of spare parts, still a novel idea in the 1830s, meant that after the initial investment, farmers spent less to make their plows
almost new again. For example, in early 1839 Kings County farmer Teunis Bergen bought a brand new no. 10 plow for six dollars. He also purchased spare parts: a “land[side]” for sixty-three cents, a “gripe” for thirty-nine cents, plus two shares and two points at 2s ($0.25) a piece, for a total of only two dollars.\(^23\)

Competition gradually led to a concentration in the agricultural implement manufacturing industry and a corresponding increase in the retail side of the trade. Farmers and gardeners in New York and New Jersey benefited by proximity to both. For example, New York City plow manufacturer John Mayher established a foundry in 1831, but soon opened the “Agricultural Warehouse,” a store that sold, in addition to Mayher’s patent plows, a wide variety of tools and implements for the farm and garden. Clarence Danhof notes that similar firms were established throughout the East “in every important city and in many smaller towns before 1860” and offered local favorites and nationally popular brand names. For example, Freeborn and Hitchcock’s “Agricultural Repository” sold their own patent plows plus the well-known Prouty and Mears and Norse Eagle plows, (as did Mayher’s nearby Agricultural Warehouse).\(^24\)

By the 1860s some of these firms evolved into giant catalog and showroom operations with exclusive rights to sell certain implements. Located in a multi-story building at the corner of Nassau and Beekman Streets in New York City, the Charles V. Mapes agricultural warehouse advertised “Every Variety of Agricultural Implements and Machinery” as well as horticultural supplies, seeds, nursery products, fertilizers, Peruvian Guano, and the proprietor’s patented Nitrogenized Super-Phosphate of Lime fertilizer. New York City’s position as a manufacturer and later as a distribution center helped bring plow technology to
local farmers and gardeners. The first (practical-minded agriculturists) to try out cast iron designs recognized the advantage of lower costs and superior design and for these reasons discarded their wooden plows. A similar pattern is observed in the adoption of the improved harrow, but not for all implements.\textsuperscript{25}

The acceptance of the harrow mirrored that of the iron plow. Harrowing smoothed the surface of newly tilled ground. In the eighteenth century farmers used “brush” harrows made from tree branches to cover seeds, and slightly more sophisticated wooden-toothed implements to smooth the soil. Introduced around 1815, the “Scotch harrow” added functionality and versatility to this old square harrow and transformed it into a better tool. Framed in the shape of a parallelogram, with hinged sections and iron teeth, these improved harrows clogged less, pulled over rocks, and broke fewer teeth than their homemade wooden predecessors. Yet they remained as simple to use as the brush harrow, plus cost little when skillful farmers copied frames and local blacksmiths installed the iron teeth. An added incentive is that the new harrows could perform functions, in addition to smoothing newly plowed ground such as covering seed and cultivating out weeds. For example, gardeners sought harrows that would imitate hand raking. New Jersey horticulturist Peter Henderson recommended a small square “garden harrow” ten inches long with seven rows of five teeth. Others owned several. At the time of his death in 1840, Suffolk County farmer Thomas Strong owned a “large iron tooth harrow,” a “corn harrow,” and two “wooden tooth harrows.” Adjustable designs like the Geddes Harrow (Figure 5.4), introduced in the middle 1840s, reduced the need for owning more than one. Soon adjustable teeth, detachable sections and (by the late 1850s) all-steel construction became available.\textsuperscript{26}
Like the cast iron plow, farmers and gardeners in the New York City region adopted the improved harrow for spring seasonal work. This is further evidence that large numbers of "average" agriculturists, rather than a few "progressive" farmers embraced specific types of improved implements. Blanket charges of conservatism, cheapness and resistance to new ideas, while perhaps accurate characterizations of agrarian attitudes outside the region are less accurate, within.

Despite Peter Henderson's observations, for many commercial gardeners purchase of a harrow did not make sense. The tasks of smoothing flower and plant beds, working fertilizer into the soil, and covering seed was best done with hand rakes. Working small plots without draft animals, hand rakes served purposes irreplaceable by the harrow. A tremendous assortment of hand rakes, made in a variety of shapes, sizes and tooth widths filled garden sheds and performed a necessary and useful role in urban agriculture during the spring and in other seasons.²⁷
Now fertilized, turned and smoothed, both garden and field were ready for planting. Outdoor planting of hardy crops began as early as mid-March in the mildest parts of the region, but in most areas crops were not safe from frost until April. Table 5.2 provides a rough estimate of the latest spring frost dates for portions of the New York City region. Local conditions, such as elevation and proximity to water also influenced climate. The counties are ranked by the average date of the last hard frost (28°F). There is a 50 percent chance that a frost will occur after the date listed. Hardy plants can stand overnight temperatures of 28 degrees Fahrenheit (and sometime lower) but tender plants will not survive even mild frost.

Successful planting requires good seed. Before experiment stations and seed dealers began systematic testing, agrarian practicality dictated that farmers and gardeners raise their own seed and keep two years’ supply on hand. Following the ancient rule of thumb “like begets like,” agriculturists collected seed from parents with desirable traits. Gardeners, for instance, sought early maturing crops, and until the late nineteenth century many persons

<table>
<thead>
<tr>
<th>County</th>
<th>Hard Frost 28°F or lower</th>
<th>Mild Frost 32°F or lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queens</td>
<td>24 March</td>
<td>3 April</td>
</tr>
<tr>
<td>Suffolk</td>
<td>30 March</td>
<td>14 April</td>
</tr>
<tr>
<td>Orange</td>
<td>5 April</td>
<td>18 April</td>
</tr>
<tr>
<td>Middlesex</td>
<td>7 April</td>
<td>17 April</td>
</tr>
<tr>
<td>Rockland/Bergen *</td>
<td>12 April</td>
<td>28 April</td>
</tr>
<tr>
<td>Somerset</td>
<td>15 April</td>
<td>27 April</td>
</tr>
<tr>
<td>Morris</td>
<td>17 April</td>
<td>2 May</td>
</tr>
<tr>
<td>Passaic</td>
<td>30 April</td>
<td>17 May</td>
</tr>
</tbody>
</table>

Sources: USDA County Soil Surveys (1975-95)

Note: *Readings made at Suffern, New York
believed that seed taken from such plants would result in even earlier-maturing progeny. Farmers sought out seed stock based on the size and weight of parent crops, a preference reinforced by agricultural society premium lists and farm journal editorials. An example of this, so prevalent among improving farmers, is the favorable comment by the editor of the *New Jersey Farmer* regarding a giant cornstalk brought into his office which measured twelve feet in height and sprouted eight ears.²⁹

In the days preceding planting agriculturists carted out bushels of seed from storage and exchanged some of it to introduce “fresh” strains and avoid “degraded,” that is, inbred plants. Each spring rekindled informal exchange networks that extended through and beyond local communities. Some agriculturists dealt with specific individuals who provided a known product, such as Westchester County farmer J.A. Hammond, who secured a portion of his corn seed from a farmer on Staten Island, some thirty miles away. Most secured locally and with less concern. For example, James Hawxhurst obtained a supply of “Lady and English White” potatoes from “an Irish Man” on neighbor John Nichols’ farm. Seed became a commodity and assumed an exchange value based on considerations other than price. For example, Adriance Van Brunt swapped a full half-bushel of “Boutons Peas” for a peck of “Early Charltons.” Demand for good seed was strong enough that retail stores, merchants in the public markets and professional seedsmen could conduct a thriving business. In New Jersey, Elizabeth Crane purchased radish seed at Britten’s, a local country store.³⁰

Starting in the 1830s “agricultural warehouses” began to advertise seed in addition to the tools, implements and patent fertilizers they already sold. Urban fringe gardeners shopped at a growing number of nursery stores which like the warehouse (only smaller)
provided everything for the horticulturists, from seeds and plants to tools and supplies. Immigrant nurserymen also retained ties to overseas growers who, amazingly, provided the bulk of garden seed used in nineteenth century America. They and their American-born counterparts also imported seedlings, cuttings, and plants of all kinds. Through connections forged with Consuls, ship captains and overseas gentlemen travelers, they introduced new species and varieties. In an address given before the New York Horticultural Society in 1828, botanist and physician Dr. David Hosack, listed nine vegetables “cultivated in abundance” around New York City, and “scarcely known in this country” at the turn of the nineteenth century. One of these, the “Cape Brocoli,” popular among consumers in the public markets had been introduced by two New York City (and immigrant) nurserymen, Grant Thorburn and Michael Floy, about ten years earlier. By the middle of the century growth within the nursery industry and increasing capital costs permitted a handful of individuals to specialize in seed production. In 1844 Queens County horticulturist Garret R. Garretson began to specialize in garden seeds, a risky venture given the narrowness of the market and the sensitivity of plants to cross pollination, insects and disease. The business was a success. By the Civil War, Garretson cultivated fifty acres of plants for seed and reportedly sold 3,000 boxes annually.31

Some historians have faulted farmers for failing to be more “aggressive in seeking out the new and unfamiliar in search of greater effectiveness.” In the New York City region at least, farmers and gardeners understood that “aggressiveness” did not equate to commercial success. With each swap or purchase made, farmers and gardeners engaged in risky behavior because seed suppliers, honest or not, distributed bad and corrupt stock, incorrectly identified
and sometimes laced with the seeds of various weeds. Itinerant humbugs and agricultural editors alike waved colorful seed packets and assured amazing yields. Such promises often proved untrue. Rather than aggressively seeking out new sources, practical minded agriculturists merely wanted to conduct business with someone they could trust. William Cobbett, summarized this attitude, warning in 1819, “find a seedsman that does not deceive you, and stick to him.” There was reason to be concerned. Even “good” seed might contain a certain amount of weed seed. New varieties of weeds spread rapidly through locales in spite of attempts to arrest their advance, and once established a colony spread new seed by natural means with devastating effects. In western New York State repeated infestations forced wheat growers to adopt a less efficient system of summer fallow. Writing in 1840 a contributor to the *Cultivator* reported:

> It is unhappily too true, that on a large portion of our best cultivated wheat lands, the soil has become so infested with a variety of foul and noxious plants [Canada thistles, oxeye daisies, white daisies, johnsworth] that a course of naked summer fallow, thoroughly performed, has become necessary to counteract them, and prevent their increase and spread.”  

In fact, the arrival of Canada thistle convinced some farmers to adopt the mechanical binder, because hand binding became impossible in overrun areas. Even for well-intentioned farmers who carefully selected their seed, things could go terribly wrong, and for tenant gardeners and marginal producers, bad seed could drive a family out of business. For example, New Jersey horticulturist Peter Henderson recalled purchasing hardy “Silesia” lettuce seed one spring from a trustworthy colleague. After sowing acres of it he discovered the seed was really a summer variety unable to survive cold spring weather. The “blunder entailed on me a loss of over a thousand dollars” he later wrote, ironically in a best-selling
gardening guide, from which he surely earned far more than had been lost. Accidental planting of similar varieties in close proximity, or mixing seed resulted in cross pollination, which could ruin the fruit and any future seed stock.\textsuperscript{33}

Nor did the risk end here. Even correct varieties from trusted sources simply failed to germinate. Again, this problem threatened everyone, but was acute for commercial gardeners working small plots of land. Growers lost advantages gained through early sowing and incurred additional expenses of replanting. All this cost extra time during the busiest season of the year. For example, in April 1830 Kings County farmer Teunis Bergen twice replanted an acre of “white spine” (Figure 5.5) and “Shaker” cucumber seed. Initial planting occupied almost five days. Replanting a second took nearly six, and four days were devoted to a third pass. Viewed another way, Bergen spent three weeks sowing a single acre of cucumbers. So agriculturists had good reason not to be “aggressive” when it came to obtaining seed. Not until the 1870s when germination tested seed first became available and through the efforts by agricultural experiment stations did this threat subside.\textsuperscript{34}

Their seed supplies obtained, farmers and gardeners began to plant. As mentioned earlier, gardeners sowed hot bed vegetable seeds like tomatoes, peppers, eggplant, broccoli, cauliflower, and brussel sprouts in March. Outdoor planting on farms began in April and at first consisted of hardy crops like oats and grass, which could withstand cold nights and occasional snow cover. Gardeners staggered planting of turnips, carrots, peas, lettuce and radishes, potatoes and onion sets also in April. As the days grew longer and threats of a late frost melted away, they planted hills of cucumbers, corn, melons and squash. In May while farmers planted field corn, gardeners transplanted seedling vegetable plants from beneath the
protective cover of hot bed frames to open fields. For instance, on 1 May 1839 Teunis Bergen transplanted about 600 tomato plants outdoors all of which had been started by seed in hot beds six weeks earlier. By mid-June spring planting reached a peak not met again until August and September, when commercial gardeners sowed late season vegetables and farmers seeded winter wheat and rye.\textsuperscript{35}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{fig44.png}
\caption{Frosted White Spine Cucumber.}
\end{figure}

\textit{Figure 5.5 Improved White Spine Cucumber}


Farmers and gardeners planted small seeds by hand, sowing broadcast or in "drills." In contrast to their acceptance of the iron plow and improved harrow they rejected mechanical seeding devices, due to low labor costs, design problems, and for environmental reasons. In addition, small scale farmers who planted limited areas in grain or grass had little need in purchasing machinery to perform this task. Even larger producers failed to find the additional speed made available through mechanization significant enough to entice them investment. Finally, like all new implements, design problems plagued seeding machines for fifteen or twenty years after their introduction.

Most farmers broadcast grain and grass seed by hand, an ancient method for sowing tiny seeds over large areas. The key to the longevity of hand broadcast seeding lay in its
simplicity, although to do it well required some skill, favorable weather conditions and a certain amount of luck. A bag of seed slung over his shoulder, the farmer strode down field in straight parallel lines, tossing handfuls of seed in even swaths across freshly harrowed ground. A harrow or roller drawn across the ground immediately after seeding covered it lightly which improved the rate of germination and reduced losses to birds. Since air currents helped – and hindered – the scattering of seed, farmers waited for favorable weather conditions to sow. For example, in the spring of 1850 Noah Youngs successfully sowed oats on a moist, cloudy day with a light wind out of the east. The overcast sky and damp soil would have permitted Young to better see his footprints and observe the pattern of the falling grain. Moisture also promoted seed germination.36

Nineteenth century promoters of improved agriculture correctly pointed out that broadcast seeding is less efficient than “drilling,” that is, planting seed in “drills,” or rows. This is because some seed is always lost when it is thrown in the air. Because of this and the intensive nature of urban agriculture, gardeners “drilled” their seed. But until late in the century horticulturists drilled manually rather than by machine. Drilling in this fashion involved marking out a shallow trench using a hoe or “garden marker,” a tool resembling a hand rake that, when dragged across the ground marked out shallow drills. The market pictured in Figure 5.6 could mark out six or eight evenly spaced rows simultaneously. Gardeners then dropped seed at regular intervals into the trench and covered it with a hoe, hand rake or harrow. In dry weather they rolled the seedbed or treaded it by foot. These two methods of sowing by hand were most commonly followed on farms and in gardens in the New York City region through the 1870s.37
The story of various attempts (successful or not) to mechanize sowing is well documented. First, hand-operated broadcast seeding machines, powered by a cranks or bows were designed to replicate hand broadcasting by ejecting a blizzard of seed. A testimony to their usefulness, similar devices remain on the market today. Applied on a larger scale to horse-drawn machines in 1840s, innovations such as the Pennock broadcast seeder permitted more even coverage of larger fields at a faster rate than if done by hand. Single-row drilling machines designed for garden, such as the one shown in Figure 5.7, became available in the 1830s. These tools dug a shallow trench, dropped and covered the seed. Large horse-drawn mechanical drills that planted and covered seed in a uniform fashion soon followed these single-row devices. Nevertheless widespread adoption of these devices remained limited until after the Civil War because of mechanical problems with their “force-feed” design.38

Few agriculturists in the New York City region adopted mechanized seeders. Before 1870 only large scale gardeners and commercial wheat growers in the mid-Atlantic and western states had adopted mechanized seeding. One reason is that wealthy producers could afford the heavy investment in these machines. Second, such an investment was attractive only to specialized grain growers seeking to achieve greater efficiencies in order to increase
production. Historians point out this ruled out most agriculturists in eastern New York State and New Jersey because they grew so little grain. Yet they did raise large quantities of hay. The fact that farmers here rotated crops required that they re-seed only a portion of their entire grass crop every few years. So even someone with twenty acres in grass would never plow the entire amount during a single season. As part of his rotational scheme, Orange County farmer James Hawxhurst sowed four acres of clover over two days in March of 1827.

Figure 5.7 Howe’s Eagle Seed Sower


This represented only a portion of the total area under grass. Given the small area being re-seeded, use of a mechanical seeder would not have saved him more than a day, and with daily wages at 2s (25 cents) sowing by hand remained a more efficient option.39

Hand sowing remained common for other reasons besides economics. The increased speed offered by mechanical seeders found no particular advantage where hand broadcast
crops (oats, rye, buckwheat, hay) were consumed on the farm or sold in local markets with minimal extra-regional competition. Any advantage gained by getting the crop in the ground quickly, which grain growers selling wheat on the national markets might desire, was largely absent in the New York City region. Hand broadcasting also offered greater flexibility by permitting farmers to sow into standing cover crops. For example, Riverhead farmer Moses Conklin sowed clover into a crop of young winter rye (sown the previous autumn) that in early April would have been crushed by the wheels of a heavy mechanical drill. Similarly, hand broadcasters could also traverse fields too wet for heavy machinery.40

Mechanical broadcast seeders and drills had other drawbacks. They could not be used to plant larger seeds, in hill culture crops like corn, potatoes, squash, melons or for many other garden vegetables. Hill culture had well-established roots in northeastern agriculture and not until the technology of weed control advanced did the practice of planting in hills decrease. The concept of the hill itself is curious. Rather than a mound, it is really more of a small ridge raised from the surface of a smooth field. Horticultural expert Thomas Bridgeman described the making of a hill in the middle 1840s:

The term hill is frequently made use of by gardeners and farmers, to designate a situation allotted for a given number of seeds, whereas, such seed are more frequently deposited below the level of the surface than above it; yet as the plants progress in growth, hills are frequently formed around them, which makes the term applicable.41

Various efforts to mechanize planting of larger seeds enjoyed most success with corn, and mechanical “corn planters” were introduced in the trans-Appalachian West in the late 1840s. First hand-operated, then towed by horses, these devices, along with special drills gradually came into use for planting corn in the 1850s and 1860s. Yet in the New York City
region, agriculturists continued to plant corn and other large seeds in hills by hand and hoe. Why? Clarence Danhof attributed this to simple “resistance against changing long-established customs,” while other scholars have argued that large scale producers sought greater efficiency through mechanization. New York State agricultural historian Ulysses P. Hedrick explained it in terms of size: “It was the West and its great corn fields that developed machinery for planting. Long after the Civil War most of the corn planted in New York and the northeast was dropped by hand and covered with a hoe.” The effectiveness of weed control also influenced the amount of corn planted.42

It is useful to ask why farmers who bought new plows and harrows, failed to invest in corn planters? Besides mechanical problems involved making the seed fall from the hopper in regular intervals, early planters worked best on level land with deep, stone-free soil. Such conditions existed over only a small portion of the New York City region. More important, the older method worked. On many eastern farms family members worked together in the fields, and children universally “dropped” seeds at planting time.

Hand planting also worked with hill culture. Before sowing corn, potato, melon or garden seeds, fields were “marked out” by plowing furrows at right angles to build up ridges at each intersection. This made for evenly spaced hills and easier cultivation. Given that greater weed problems existed in the East than in the trans-Appalachian west, hill culture and its associated methods remained in use. For example, agriculturists spaced potato hills at three feet and corn at four. In April 1830 Kings County farmer Teunis Bergen plowed out fifty hills for watermelons at nine foot intervals and spaced cucumber hills at 4½. One
outcome of this is that hill cultivation prevented the concept of yield from catching on until the twentieth century.  

Planting involved the efforts of a small army of persons who followed behind the plowman. First came someone who made holes in the hills preparatory to their receiving fertilizer and seed. This was done with a hoe or blunt object. Many northern New Jersey farmers used a "dutch hoe" for this task, while farmers in eastern Long Island used a "peg." Peter Henderson recommended that gardeners use a pointed stick he called a "dibbler." Depending on the crop, some commercial vegetable growers spaded down a foot to turn the soil before adding fertilizer while farmers typically deposited a forkful of manure into the hill. Horticultural writer Robert Buist recommended applying three to four inches of manure on potato hills. Next in line came the seed droppers, usually children who placed four or five seeds in each hill. For example, Benjamin Conklin hired "Phinies Tuthills boy" over two days to help planting potatoes in April 1851. This use of child labor is one important reason that agriculturists could continue to follow labor-intensive planting methods. After planting the seeds were covered with soil by a hoe or the heel of a boot.  

By early June planting season on the farm had ended, but gardeners continued to transplant vegetables from hot bed to field through May and June. This process was completed entirely by hand and involved digging shallow holes with a shovel, setting the plants and covering their roots. In most localities June ended the planting season, but on the sandy soils along the Atlantic coast fishermen-farmers spent their summers netting fish and drawing them to their fields to spread as raw fertilizer. The fish of choice for this noxious purpose, the menhaden, swim in large schools off New York and New Jersey from late May
through August. So for many coastal farmers fishing and fertilizing occupied much of their
summer. By 1860 oil factories began to purchase these fish and the sale of menhaden
became a secondary source of income. Some farmers continued to spread raw fish on their
fields, but many purchased "scrap" (which served the same purpose) from the factories
instead.45

By mid-May farmers were also preparing to drive their livestock to summer pastures.
Through the first third of the nineteenth century many cattle on farms ran loose to fend for
themselves during the warmer months. In the middle 1820s, for example, Betsey Crane's
family turned their steers to a local swamp for the summer. The continuance of such
practices are evident in the numerous fencing laws passed which required that farmers
maintain fences along public roads to keep animals out of crops, rather than within
enclosures. Local governments also maintained books that recorded ear notch marking, used
to identify ownership of strays. By the 1850s as more farmers began to engage in commercial
milk production, they began to enclose pastures to keep their stock confined. Coincident
with this was a drastic decline in the price of wool that freed up additional pasture once used
for sheep. For example, before 1845 literally thousands of sheep herded in common on Long
Island's Hempstead Plains. Late spring also commenced the season for boarding cattle. This
business assumed some importance near Manhattan. For example, on 6 May 1864 Henry
Wicks boarded a "yearling heifer" for Brooklyn butcher Henry Weeks. Landowners in
Hudson County New Jersey provided a similar service.46

Until record low wool prices forced thousands out of the business of raising sheep,
warm May afternoons foreshadowed the spring shearing. Depending on the number of sheep
raised in a given neighborhood, the annual washing of the sheep in a stream or millrace might be attended by many families with hundreds of sheep. Shearing followed a week or so later and required the services of a professional. One old farmer recalled "to shear sheep with the old-fashioned shears, quickly, smoothly, and without cutting the animals was a job requiring a skill to be attained only through long experience." This they did. Orange County farmer James Hawxhurst hired Henry Miller to shear for him in May 1827. Paid in bread and potatoes at a per diem rate of 2s ($.25), Miller sheared sixty-three merinos and eighteen common sheep over two days. Wool weights averaged two or three pound each. After shearing the animals were turned out to pasture and the wool sent to a local mill.47

Spring work was also characterized by harvest activities. Through the use of hot beds, cold frames and hand glasses gardeners reaped rewards of early spinach, lettuce and kale, sometimes even in late April. Hand glasses, jars placed over plants in order to protect them from the cold, helped extend the season. The expense and small size of these glasses limited their use, and most agriculturists seeking early markets planted outdoors, taking a chance that unfavorable weather would not wipe out an entire crop. For example, Peter Cock estimated loss of his asparagus crop to frost at ten percent during a late season cold snap on Long Island in early May 1861. Yet for Cock and others the risks were worthwhile because consumers paid dearly for greens and fresh vegetables that had been absent from their tables since November. Before 1890, when southern growers preempted northern producers, late fall frost severed local supplies of fresh vegetables. Families consumed dried and otherwise preserved supplies through the winter, but by early spring even these supplies had run low. Writing in his 80s in 1953, Jared Van Wagenen recalled his mother referring to the "six
weeks’ want,” a period of time in the spring after the exhaustion of winter supplies and before fresh food appeared in the market.⁴⁸

Numerous other sources echo the reality of this opportunity. Writing in 1819, William Cobbett said that the ability to supply the New York market with broccoli in early May “is the thing!” because by that time desperate consumers were willing to pay “up to 4 cents for a handful for wild dock leaves.” Farm women skilled in the identification of wild plants combed the countryside in March and April in search of "dock leaves, shepherd's purse, lamb's quarter, dandelions" and wintergreen. They used some of these greens at home, but sold most, generating a useful infusion of cash at a time when farm expenditures reached a peak. The family of Staten Island farmer Alfred Cutting made an extensive business selling wild watercress in the spring. Over twelve weeks beginning 11 March 1874, Cutting received $60 for fifteen “lots” of watercress sent to New York produce merchant Thomas Archdeacon. The Cuttings also sold wild mint.⁴⁹

In addition to selling wild greens, farmers raised two important spring perennials: asparagus and rhubarb. Wintering under beds of mulch over the winter, these crops matured early and sold for large sums in May and early June. For example, Queens County farmer Peter Cock sold 9,100 bunches of asparagus worth $1,923 from six acres between 30 April and 9 June 1860. Down in Kings County, farmer John C. Bergen sold $71.50 worth of rhubarb and asparagus between mid-May and mid-June, 1867.⁵⁰

Summer in the agricultural calendar arrived before the date of the solstice. Early June heat and humidity heralded the coming of summer. Spring seasonal work was also finishing up around the same time. Farmers planted the last of their corn and crops sown earlier such
as grass, grain and potatoes were well along by now. Gardeners continued to transplant vegetable and flower seeds into the summer months in order to have a succession of maturing plants through autumn. June nights remained warm enough for frame sashes to be put away until October. By early June the cattle had been turned to summer pasture and the sheep sheared.

Agriculturists in the Northeastern United States were practical women and men who used great prudence before considering changing the ways in which they lived their lives. Often, but not always, the old ways worked as well or better than the new. New ideas, whether in intellectual or mechanical form, did not always (in fact they often did not) fit within traditional social and economic relationships, or work within cultural standards or regional environmental conditions. Families were put in the position of weighing each innovation against that which already existed asking, "Is it as simple, cost effective, or useful as current methods?" In some cases, as with fertilizer use, the cast iron plow and the harrow, the answer was yes. But for sowing technologies, before the Civil War the answer was no. Similar evaluations were made during other seasons, for other tools and methods, but spring and summer held the most promise for developers of improved implements.
Notes

1 Diary entries show a limited range of work activities taking place on the farm and garden in the winter months of December to February. This change for the entire region in the first fourteen to twenty-one days of March during which time a new cycle of work activities commenced. This change was greater than between any other seasons. Through the 1850s, Benjamin Conklin began his diary on April first. Diary of Benjamin F. Conklin, typescript, Hallockville Museum Farm. Spring start dates for annual and monthly farm labor contracts abound. For commencement of annual contracts, see Farm Ledger of Edgar Thomas, 1 April 1847, New Jersey Collection, Alexander Library, Rutgers University; Account Book of John C. Ditmas, 4 March 1847, Brooklyn Historical Society. For commencement of a monthly contract, see Account Book entry 24 March 1853, Willits Family Papers, Long Island Studies Institute, Hofstra University, Hempstead, New York. Journal and Account Book of James Hawxhurst, 22 March 1829, 25 March 1830, 31 March 1831, Manuscripts Collection, New York Public Library; Account Book of John C. Bergen, 1 March 1854, Brooklyn Historical Society. Residential and commercial leases in New York City traditionally turned over on May 1.


5 Horticulturist 16 (February 1861): 58-59; New York Farmer 4 (February 1833): 43; 7
(March 1834): 73, 1 (November 1828): 260; Edward Sayers, The American Flower Garden
Companion (New York: G. C. Thorburn, 1838), 39; Bridgeman, The Young Gardener's
Assistant, pt. 1, 112-13; Cobbett, American Gardener, 40; American Institute of the City of
New York (hereafter AICNY) Transactions of the American Institute of the City of New
York, 1851 New York State Assembly Document 151 (Albany: Charles Van Benthuysen,
1852), 46.

6 Halyoake Farm Diary, 28 February 1873, typescript, HMF. Lucius Hallock's homestead
near Orient, New York is located in USDA plant hardiness zone 7a, where mild weather
permits setting plants out earlier in the season than in other parts of the New York City
region. Hence, his activity in late February rather than early March. Oklahoma City is also
in zone 7a. USDA Plant Hardiness Zone Map, Miscellaneous Publications no. 1475 (January
Inventory of the Estate of William Richards, Newark, New Jersey, 4 January 1865, Inventory
16190G 1865, New Jersey State Archives, Trenton.

7 Cobbett, American Gardener, 44, 49; Peter Henderson, Practical Floriculture (New York:
Orange Judd, 1869), 46; Horticulturist 16 (February 1861): 58-59; Gardener's Monthly 1
(February 1859); 1; Bridgeman, Young Gardener's Assistant, pt. 1, 116; New York Farmer 1
(October 1828): 239, 6 (November 1833): 331; Sayers, American Flower Garden
Companion, 142.

8 Percy Wells Bidwell and John Falconer, History of Agriculture in the Northern United
States, 1620-1860 Contributions to American Economic History 5 (Washington D C: The
Carnegie Institution of Washington, 1925), 87-89, 272; Danhof, Change in Agriculture, 62,
252-54, 256, 258; Gates, Farmer's Age, 100-03, 164-65; David M. Ellis, Landlords and
Farmers in the Hudson-Mohawk Region, 1790-1850 (Ithaca: Cornell University Press, 1946),
215, 216; Howard S. Russell, A Long, Deep Furrow: Three Centuries of Farming in New
Neil Adams McNall, An Agricultural History of the Genesee Valley, 1790-1860
(Philadelphia: University of Pennsylvania Press, 1952), 114; James C. Brandow, ed. and
intro., “The Journal of Nathaniel T.W. Carrington: A Barbados Planter’s Visit to Canada and
the United States in 1837,” unpublished manuscript, (25 August 1837).

9 New York State Agricultural Society (hereafter NYSAS), Transactions of the New York
State Agricultural Society for the Year 1841 1 New York State Assembly Document 131
(Albany: T. Weed, 1842), 154; NYSAS, Transactions 5 (1846) New York State Senate
Commissioner of Patents, 1851 House Executive Document 102 (Washington, D C: Robert
Armstrong, 1852), 231; Diary of Samuel Megie, Jr., 11 January 1862, 4, 28 April 1862,
Manuscript Collection, New-York Historical Society; Teunis G. Bergen Collection, 1, 21


12 The total cost for street manure delivered to a landing ranged from 40 to 55 cents per 14-bushel load. Freight calculations from Udall Saw Mill Account Book, Udall Family Papers, Folder B, LISI: $16 for 100 loads (26 November 1845) $8.06 for 53 loads (21 April 1846), and from Velsor Family Papers, Box 4, Folder D, LISI: $15.62 for 100 loads (24 June 1848), $11.25 for 72 loads (21 November 1848). See also NYSAS, *Transactions* 2 (1842) New York State Senate Document 63 (Albany: E. Mack, 1843):205-06; and, NYSAS, *Transactions* 5 (1846), 496; The standard deviation of load size for these 50 boats is 17.65. The value of $10 is derived by an estimated freight rate of $0.15 to $0.20 per load times 60 loads per boat.

13 Diary of Adriance Van Brunt, 23 January 1828. That so many manure certificates exist in farm family papers attests to the widespread use of this system. Manure Certificate no.578 (14 August 1835) Joseph King Financial Papers, Document Case 110, Long Island Collection, Queensborough Public Library.


Both farmers and gardeners also performed a certain amount of fall plowing, either for wheat and rye, or for a winter cover crop.

On resistance to improved plows, see Danhof, *Change in Agriculture*, 189, 192; Hurt, *American Farm Tools*, 8, 10-11. Peter D. McClelland, *Sowing Modernity: America's First Agricultural Revolution* (Ithaca: Cornell University Press, 1997), 59-60; As better plows were developed, gardeners began to use them in conjunction with, and then instead of, spades. Buist, *Family Kitchen Gardener*, 10; Bidwell and Falconer, *History of Agriculture*, 210; Receipt dated 18 July 1850, Teunis Bergen Collection, BHS.


1827, New York Public Library; An inventory dated 1839 in Daybook of Richard Willits, Willits Family Papers, Long Island Studies Institute, Hofstra University, Hempstead, New York shows a single plow worth $8.; Receipt, 4 April 1839, Sheet 5, Teunis G. Bergen Collection, Brooklyn Historical Society.

US Census Office, Agriculture in the United States in 1860, xix; Hurt, American Farm Tools, 16; Longworth, Directory for 1831; Receipt, 4 April 1839, Sheet 5, Teunis G. Bergen Collection; Danhof, BHS; Change in Agriculture, 182; The firm of Freeborn and Hitchcock operated the Agricultural Repository at 183 Front Street and sold plows and other items. Receipt, 10 May 1833, Joseph King Financial Papers, Queensborough Public Library; Receipt, 11 December 1837, Teunis Bergen Collection, BHS; NYSAS, Transactions 1 (1841):158; NYSAS, Transactions 2 (1842), 188.

Mapes, Charles V. Mapes Illustrated Catalog for 1861, n.p.; Teunis Bergen purchased a no.23 Prouty and Mears Plow for $9 and an Eagle I Cabbage Plow for $14 from John Mayher at the Agricultural Warehouse. Receipts, 8 April 1846 and 18 July 1850, Teunis Bergen Collection, BHS: According to census data for 1855, 1860 and 1865, no more than 2 implement manufacturing firms existed on Manhattan Island.


Henderson, Gardening for Profit, 350-1 writes in favor of the “acme harrow” and disk harrow to prepare ground, but not to cover seed. Bridgeman, Young Gardener’s Assistant, pt.1. 22; Buist, Family Kitchen Gardener, 131. Improving farm sources also mention use of rollers on newly seeded ground, but these implements are rarely mentioned in personal sources.


29 Danhof, Change in Agriculture, 155; Henderson, Gardening for Profit, 89, 92; Earl W. Hayter, in “Seed Humbuggery Among the Western Farmers, 1850-1888” Ohio Historical Quarterly 58 (1949): 56 writes that seed germination rates declined significantly after 3 years. New Jersey Farmer 3 (September 1857): 12, 1 (October 1855): 52.


[1838], see Sayers, *American Flower Garden Companion*, 179; For a description of an
nursery and store see *Gardener's Monthly* 1 (December 1859): 184; *Horticulturist* 1 (July
1846): 10-11, (October 1846): 169, n.s. vol.3 (August 1853): 381; Gates, *History of

32 Danhof, *Change in Agriculture*, 160; Cobbett, *American Gardener*, 67; Edward Ruggles, *A
Picture of New York* (New York: C.S. Francis, 1846), 156-57; Schmidt, *Agriculture in New
Jersey*, 181-82; Daniel W. Gade, "Weeds in Vermont as Tokens of Social Change"
*Cultivator* 7 (September 1840): 133.

33 Henderson, *Gardening for Profit*, 99; Account Book and Farm Calendar of Teunis Bergen.
4-5 April 1850, Box 58, BHS; Bridgeman, *Young Gardener’s Assistant*, pt.1, 25.

34 Teunis Bergen obtained seed from at least two sources: a Shaker community and from
Grant Thorburn, a New York seedsman. In the spring of 1850 Bergen noted that inclimate
weather reduced germination rates. That same season he also spent 1 day replanting early
corn, squash and lima beans, and 4 days replanting melons. Similar entries observed in other
years indicate that seed failures were expected and likely calculated into the cost of the crop.
Account Book and Farm Calendar of Teunis Bergen, 15 April - 8 May 1830, BHS.
Henderson, *Gardening for Profit*, 89-91, 93.

35 The universality of planting patterns is revealed in the examination of any set of diaries.
For example, Noah Youngs Daybook, 13 March 1849, 5 March 1850, HMF; Diary of
Benjamin F. Conklin, 7, 12 April 1851, Hallockville Museum Farm, Northville, New York;
Diary of Isaac Oakley, entries for April 1867, Adrianse Memorial Library, Poughkeepsie,
New York; Henderson, *Gardening for Profit*, 106-07; Account Book and Farm Calendar of
Teunis Bergen, 12 March, 1 May 1839, BHS.

36 Bidwell and Falconer, *History of Agriculture*, 299; Schmidt, *Rural Hunterdon*, 116; Poor
or inexperienced broadcaster left “islands” which encouraged weed growth. Neil Adams
Bidwell and Falconer, *History of Agriculture*, 281; David M. Ellis, *Landlords and Farmers*,
216; Hurt, *American Farm Tools*, 24; Danhof, *Change in Agriculture*, 206; Noah Youngs
Daybook, 15 April 1850, HMF.

37 Danhof, *Change in Agriculture*, 209; “Drills” defined in Bridgeman, *Young Gardener’s

38 Hurt, *American Farm Tools*, 25-27; In 1861 a hand-cranked broadcast seeing machine cost
$10. Mapes, *Charles V. Mapes Illustrated Catalog for 1861*, 9, 95; Bidwell and Falconer,
*History of Agriculture*, 300; Hedrick, *History of Agriculture*, 294; Danhof, *Changes in
Agriculture*, 207-08. McClelland, *Sowing Modernity*, 84-5, 90-91, 93; In the 1860s Charles
Mapes sold the "Wethersfield Seed Sower, a simple, compact, strong, durable, portable, and perfectly efficient" machine which planted 22 different kinds of vegetable seeds (p91-92). At $6 however, it is more likely that gardeners built their own. Bridgeman, Young Gardener's Assistant.

39 Danhof, Change in Agriculture, 207-08, 210; Schmidt, Agriculture in New Jersey, 138, argues conservative attitudes slowed drill adoption in New Jersey; Hurt, American Farm Tools, 20, 27; Diary of Benjamin F. Conklin, 12 April 1851, 2 April 1853, HMF; Journal and Account Book of James Hawxhurst, 26-27 March 1827, NYPL. Farmers who did not have to hire help to sow could, theoretically, afford greater losses due to bird or heat damage.

40 For general information on cereal production, see Schmidt, Agriculture in New Jersey, 168-74; Bidwell and Falconer, History of Agriculture, 325-26, 350-58; and, Hedrick, History of Agriculture, 332, 337-38. On domestic and other uses for cereals, see Van Wagenen, Golden Age of Homespun, 65-72. The turnip, another broadcast seeded crop yielded so heavily that growers frequently sowed a small area. Bridgeman, Young Gardener's Assistant, pt. 1, 25; Hurt, American Farm Tools, 27; Diary of Benjamin F. Conklin, 7 April 1851, 4 April 1853, HMF.

41 Bridgeman, Young Gardener's Assistant, pt. 1, 65.

42 Danhof, Change in Agriculture, 214-16, 217; Bidwell and Falconer, History of Agriculture, 300-02; Hurt, American Farm Tools, 31-32; Gates, Farmer's Age, 290; Hubert G. Schmidt, Rural Hunterdon: An Agricultural History (New Brunswick: Rutgers University Press, 1945), 104; Hedrick, History of Agriculture, 295. The mechanical corn planter was also limited in that it had a single purpose and was useful for only a brief part of the year.

43 Schmidt, Rural Hunterdon, 99; David S. Cohen, The Dutch-American Farm, The American Social Experience Series (New York: New York University Press, 1992), 114; Patrick Shirreff, A Tour through North America . . . As adapted for Agricultural Emigration (Edinburgh: Oliver and Boyd, 1835), 10; Bidwell and Falconer, History of Agriculture, 168, 346; Henderson, Gardening for Profit, 195-96, 224, 266; Bridgeman, Young Gardener's Assistant, pt. 1. 65, 86; Buist, The Family Kitchen Gardener, 62. For corn, see Diary of Henrietta Terry Conklin and Guilder S. Conklin, 12 May 1871, typescript, HMF; Account Book of Alfred Cutting, 20, 26 May 1879, MS-3, box 1, folder 3, Staten Island Historical Society. For potatoes, see Diary of Benjamin F. Conklin, 22 April 1851, HMF; Diary of Selah Wicks, 10 May 1854, Suffolk County Historical Society; Account Book of Alfred Cutting, 20 May 1870, SIHS. For vegetables, see Account Book and Farm Calendar of Teunis Bergen, April 1830, BHS, and sections titled "Amount Planted." Diary of John C. Bergen, 8 May 1848, Brooklyn Historical Society. In 1855 the New York State census for the first time queried farmers regarding area planted and volume harvested, two measurements from which yield is computed. That said, limited evidence exists which shows that farmers measured their fields or even thought in terms of yields.
In this depiction of the multiple stages of planting I do not wish to give the impression that scores of persons were required. Two or three persons working together could perform more than one task. Hurt, *American Farm Tools*, 30; Cohen, *The Dutch-American Farm*, 113-14; Hedrick, *History of Agriculture*, 295; Buist, *Family Kitchen Gardener*, 52, 62, 71, 101; Diary of Benjamin F. Conklin, 23-24, 30 April, 6-7 May 1851, 3 May 1853, 28 April 1855, 6-7 May 1859, 14 April 1860, and “Memorandum 1860”, HFM; Noah Youngs Day Book, 23 April 1838, 15 April 1853, 28 April 1855, HFM; Bridgeman, *Young Gardener’s Assistant*, pt. 1, 43, 65, 70, 74-75, 86; Patrick Shirreff, *A Tour through North America . . . As adapted for Agricultural Emigration* (Edinburgh: Oliver and Boyd, 1835), 10; Henderson, *Gardening for Profit*, 224, 226; Diary of Isaac Oakley, 18 May 1868, AML; Account Book and Farm Calendar of Teunis Bergen, 1850, BHS; Account Book of Alfred Cutting, 26 May 1879, SIHS; Danhof, *Change in Agriculture*, 215, 216.

On side dressing fertilizers, see Bidwell and Falconer, *History of Agriculture*, 342; Richard A. Wines, “The Agricultural Transition in an Eastern Long Island Community” *Agricultural History* (October 1981): 54; Diary of Guilder S. Conklin, typescript, 18-21 June 1868, Hallockville Museum Farm, Northville, New York; Diary of Benjamin F. Conklin, 22 June 1852, HFM; Diary of Selah Wicks, 15 May 1855, SCHS.


The estate of Newark gardener Peter During included 4 “patches” of spinach, 2 of kale, 2 of lettuce, and 2 of rhubarb, plus $4 worth of “hotbed frames and [hand] glasses.” Even though During’s inventory is for November, it is likely that he raised these cool weather crops in the early spring. Rhubarb is also a perennial which ripens in May. Inventory of the Estate of Peter During, Newark, New Jersey, 18 November 1851, Inventory 14061G 1851, New Jersey State Archives; NYSAS, *Transactions* 21 (1861) New York State Assembly


CHAPTER 6. THE AGRICULTURAL YEAR MATURES: SUMMER

The official start to summer is the twenty-first of June, but for agriculturists in the New York City region summer seasonal work began one to two weeks earlier. Spring rains and June heat encouraged a plague of weeds against which armies of hoe-wielding children were sent. Farmers harvested hay and grain in the summer while commercial gardeners transplanted successions plants for of late summer fruits and vegetables. By mid-summer, they began to harvest and sell those fruits and vegetables transplanted outdoors (from hot beds and cold frames) back in the May. Such work continued though the remainder of the summer and in to the autumn. Farmers and gardeners also battled damaging insects and crop diseases during the summer months. Finally, as with spring seasonal work, the tools and equipment used for summer tasks reflect the practical attitudes of their users. Families invested conservatively in proven affordable and appropriate new labor saving technologies.

Subsequent to spring planting agriculturists hoped for rainfall to nurture growing crops. Yet rain also encouraged the growth of unwanted plants, and these weeds posed the greatest early threat to field and garden crops. Starting two to four weeks after planting and extending into July and sometimes later, weed control was the most important summer task in the field. In the nineteenth century agriculturists used various physical means to remove weeds from the ground. Gardeners also practiced a certain amount of hand weeding, but whether in plots or open fields, the hand hoe reigned supreme. Where possible agriculturists also used horse drawn implements to assist in weed control. These included harrows, shovel plows, and a tool called a “cultivator.” Scholars have written pages and pages on the development and use of these tools, but focus on use of the cultivator in the corn-growing regions of the northern
United States. While such an approach is useful for charting the development of modern tools, the fact remains that most families used hand methods through the end of the nineteenth century.¹

Raking during the first week or two after sowing removed small, fast-growing weeds from seedbeds without damaging newly sown crops. In large fields farmers used a horse drawn harrow to achieve this result, but for smaller garden plots horticulturists preferred a hand rake. Both were effective but only temporarily. Once young plants poked more than a few inches from the ground these raking tools could be used no longer.²

Where families planted crops in hills they often used "crudely made shovel ploughs or a light moldboard plough" to dig up soil in the rows between hills. By going in two directions they covered a considerable portion of the field, although fear of cutting the roots of growing plants made them steer clear of the hills themselves. For example, Queens County farmer J. Van Siclen reported that cross plowing reduced, but failed to eliminate the necessity of hoeing the hills, which indicates the limitations to this improvement.³

Clarence Danhof and Hubert Schmidt have argued that even though horse drawn implements like cultivators represented "improvements" many farmers continued to the traditions of using hoes to combat weeds. Rather than viewing this as a situation in which agriculturists resisted adoption of new tools because doing so represented change, an alternative position is that weed removal by hand rake and hoe actually worked better for the special environmental, cultural, economic and agricultural characteristics of the New York City region. For example, previous use of the land, seasonal rainfall and other local conditions required agriculturists to weed the same piece of land three to five times per
season. Even then multiple passes did not create spotless fields. Rather they achieved the modest goal of keeping cultivar ahead of competitor until the former reached a size large enough to compete. For example, the Conklin family planted field corn on their Suffolk County farm over four days in mid-May, 1852. Three weeks later eighteen year-old Moses and hired hand Peter worked for two days “at the corn” hoeing out weeds. Over the next six weeks, the two men hoed for a total of nine days. By mid-July, the corn had grown tall enough to prevent its being choked out, and the boys “laid it by” for the remainder of the season. Similarly, Kings County vegetable grower Teunis Bergen hoed squash plants a total of three times over the course of five weeks in late spring and early summer, 1839. In this way the Conklins, and thousands of others achieved the nineteenth century definition of weed control.4

That the common hoe remained the tool of choice for weed removal in field and garden for over three centuries speaks of its utility. Part of this is attributable to its simplicity and low cost. For years it consisted of only an iron blade fashioned by the local blacksmith and attached to a long wooden handle. By the middle 1820s production shifted from local craftsmen to factories that turned out lighter hoes with more durable steel blades by the hundreds of thousands. According to one source, mass production reduced costs by 50 percent to around thirty-seven cents each. An amazing array of styles could also be found at urban agricultural warehouses and country stores. Manhattan nurseryman Michael Floy purchased these essential hand tools at Grant Thorburn’s New York City seed store.5

The versatility of the hand hoe made it useful for farm and garden work and is an important reason for its longevity. Manufacturers produced different shapes and sizes and
versions suitable for general weed control in the field, for hoeing turnips, planting, making drills and thinning (Figure 6.1). They were well suited to a society where children performed certain types of fieldwork. Children wielded these tools with great dexterity and no agrarian upbringing was complete without logging hours in the field. Looking back nearly sixty years John Horace Wells’ most vividly recalled working under the hot sun: “Many a time have I, when hoeing corn in the hot months of July and August, when the surface of the ground burned our feet, (all boys went barefoot at that time) dug a hole three or four inches deep to cool my feet.” That children could clear repeated crops of weeds is yet another important reason for the hand hoe’s longevity. So many “good” reasons existed for continued use of the hoe, yet historians tend to focus on the development of the horse drawn cultivator. Adoption of this tool did not occur in New York and New Jersey to much of an extent until the 1870s. This inconsistency has developed because cultivators were used widely in the trans-Appalachian West by 1850, where environment, soil, culture and the economy necessitated increased use of improved implements. In this way, Eastern agricultural history is being interpreted through a western model.⁶

Figure 6.1 Adjustable Iron Hand Cultivator

The horse-drawn cultivator enjoyed less widespread use in the Northeast for perfectly sound reasons. Introduced in the 1820s this important innovation made up for the shortcomings of the plow and harrow by matching speed with greater precision. As show in Figure 6.2, it consisted of a set of pointed shovels connected to an angular wooden frame. When pulled by a draft animal, the implement dug up weeds between rows. The horse cultivator covered up to three times more ground than a shovel plow in a single pass and did a better job. In weedy sections of corn, some families used the cultivator in conjunction with the shovel plow plowing in one direction and cultivating in the other. A single cultivator also covered more ground than a hand hoe, and herein lay its appeal in the West. But in the New York City region, farmers and gardeners who raised a more balanced mix of potatoes, garden and nursery crops sought quality of work rather than quantity of ground covered. The hoe set the standard against which they judged this new implement, and it took half a century for the cultivator to meet these high expectations.7

Figure 6.2 Common Horse-drawn Cultivator

*Source: Mapes, Illustrated Catalog, 80.*
For example, even in the 1850s most cultivators did a relatively poor job, having been plagued by design problems for thirty years. The tool clogged, skipped across hard ground, bounced against stones and damaged root systems of the plants it was supposed to protect. In the rocky soil covering much of the New York City region, users found the tools less than useful. Manhattan nurseryman Michael Floy described his first encounter with an "awkward and ineffective one-horse cultivator" in the summer of 1834:

Father had a great notion to buy an instrument called a "cultivator," so he borrowed Mr. Hall's. We put up the old Gray before it, but it made sad work, and might be truly called a "cultivator," for I believe it cultivated the weeds so as to make them grow better than before.

Certainly, negative experiences such as this did nothing to promote use of this tool. Another drawback is that early cultivators did not eliminate hoe work. Those manufactured before 1850 cleared space between rows, so crops planted in hills still required regular attention with a hand hoe. Nor did using the cultivator necessarily reduce the number of passes made over a field through the summer. For example, Jonathan Horton had hoped his new implement would reduce the number of passes to three, but during the season of 1847 he had to make six. After 1850, design improvements permitted users to cultivate between and within rows. Nevertheless, excessive weed growth in the Northeast still required a certain amount of hand work and numerous sources indicate extensive hand hoe use at the end of the century.8

The cultivator also increased operating expenses. Charles Mapes advertised these tools for sale at from four to twenty dollars in 1861, but five machines awarded honorable mention by the New York State Agricultural Society in 1852 cost between ten and thirty dollars. Farmers also had to purchase spare parts and pay for maintenance, this for an implement
which reduced, but did not eliminate hand work. Use of cultivators also eliminated the ability to use low cost child or the free labor of young family members. Few children also had the strength or skill to guide the implement through a field and fewer parents would have taken the risk of their doing a poor job. So the cultivator really was not worth adopting except under conditions of high volume production or where labor costs were high. Like the farmers, gardeners also failed to adopt cultivators in large numbers. In most cases they did not own the draft animals necessary to pull the implements. Gardening supply houses did offer single-row cultivating tools starting in the 1830s. In the 1850s the *New Jersey Farmer* reviewed one hand-powered cultivator for use near rows of tender carrot and onion plants. Show in Figure 6.3, the tool was pushed from behind. A “skilled user” could cultivate ten acres of onions in a day. A New York City manufacturer offered the implement for sale for seven dollars. The tool had some drawback in that it required considerable power to push, made more difficult in stony, or excessively dry soil. These tools were also ineffective for hill crop, or vines like cucumbers, squash or melons.9

Before 1850 the cultivator was practically unknown in the New York City Region. Farmers and gardeners used hoes and rakes, plus harrows and shovel plows to keep weed growth under control. These methods worked well given the environmental, cultural, economic and social characteristics of the Region. After 1850 manufacturers introduced improved designs, which did a better job and worked well in conjunction with traditional methods of weed removal. Larger scale producers and those who paid out large sums in wages purchased these tools. For these reasons, the attractiveness of the cultivator really lay in the Middle West where stones were fewer, and labor costs higher, and where large scale
com growers who worked in terms of high volume could afford greater losses due to
incorrectly set teeth or sloppy, unskilled operation. Weed problems on new land in the West
were also less severe than in the East, making hand hoeing less necessary. Farmers and
gardeners in the New York City region saw little advantage to these tools compared to the
proven advantages of the hand hoe. Although they became more visible after 1850, horse-
drawn cultivators did not become common in the Northeast until the 1870s.\(^\text{10}\)

By July the frenzy of summer seasonal work approached an early peak. Agriculturists
hoed quickly after each rainfall to stay ahead of fast-growing weeds. Gardeners also
continued their spring efforts of transplanting vegetable plants from hotbed and cold frame to
outdoor fields. These late season crops would produce through September. Meanwhile, they

Figure 6.3 Garden Cultivator, Pushed from Behind

continued to harvest an ever increasing number and variety of vegetables, making market trips three to five days a week. In a typical year the last week of June marked the time to cut the grass, a true signal that summer was well under way. Sandwiched between field cultivation and reaping tasks, by 1845 haying had surpassed grain as the most important farm harvest event of the summer season. Favorable environmental conditions and locational characteristics made grass the most important crop in the northeastern states and all areas, including northern New Jersey and downstate New York experienced a definite and steady increase in its production in the mid-nineteenth century. The turning point came in the decade of the 1840s, as urban demand and the extension of rail networks opened markets for hay and milk. Then the collapse of wool prices in 1846 encouraged thousands to shift from shepherding to dairying and raising hay. Low grain prices, western competition, insect depredations and diseases also drove northeastern wheat growers out of business and pushed others to find new sources of income, such as the sale of hay and dairy products.11

There were two seasons devoted to haying in the New York City. Farmers cut domesticated grass (clover and timothy) in June, and wild salt hay in the autumn. The time for summer haying lasted only about a month, an abbreviated season by contemporary standards. From the colonial era to the 1860s, the technology of haying consisted of hand tools and manual labor. Mowing, the first of this multi-step process provides an example of agrarian attitudes toward improved technology. They retained older methods that worked well in the New York City region and discarded them only when truly better alternatives came along. In 1820 farmers cut meadow grass by hand with a tool called a scythe. The scythe had a long history, having been first used in the American colonies in the seventeenth
century. Modified over the years, the scythe of the nineteenth century exhibited a five foot long crooked handle, connected to a twenty-four inch razor sharp steel blade.12

This tool required tremendous power to use because in order to cut properly the mower had to swing the blade full force into a patch of standing grass. As the swath fell he stepped forward and drew back for another swing. Recalling hot summer days in the field, Jared Van Wagenen described mowing as “grueling” work an observation with which other sources generally concur. For example, writing to her son in June, 1840 Ann Cock mentioned that “the men” did not look forward to commencement of the mowing season because grass lay low and thick, making cutting more difficult. For these reasons, it is not surprising that mowers welcomed periodic breaks to sharpen their blades, “and in all rural sounds there is none sweeter and more musical than the rapid swish of the whetstone on the ringing steel.” They also stopped to drink cider, whiskey or rum from clay jugs left sitting in cool shade of nearby hedgerows.13

A horse drawn mowing machine based in part on Cyrus McCormick’s well-known reaper, appeared on the market in the early 1840s. Farmers adopted this machine and its rivals slowly even though they became widespread in certain parts of the mid-Atlantic and in the trans-Appalachian West during in decade of the 1850s. In the New York City region farmers did not adopt them until compelled by labor shortages during the Civil War.14

Historians place emphasis on development of the mechanical mowing machine and its rapid replacement of the scythe. Skeptics who failed to buy these new machines are presented as backward and excessively conservative. On the other hand, the reason most frequently given as to why farmers invested in mechanical mowing machines is because of
the increased cost of harvest labor. The increase in efficiency is obvious, but the savings in wages is more elusive. The mechanical mower may be used to test the high-wage hypothesis used by historians to demonstrate that labor costs forced farmers to invest in improved implements.\textsuperscript{15}

Proponents of this hypothesis draw their evidence from contemporary historical data published in the agricultural press and by farm organizations. For example, Robert Ernst reported figures printed in the \textit{American Agriculturist} which show that immigrant farm laborers received $0.75 to $1.50 per day in the middle 1840s. Percy Bidwell cites similar figures for 1852, courtesy of the New York State Agricultural Society and Paul Gates uses numbers supplied by the Patent Office to show that male farm workers earned about $1.25 per day. Clarence Danhof cites almanac data that mowers on Long Island received $2.00 per day in 1852. The question none of these historians has asked is who hired help at such exorbitant rates? Hubert Schmidt notes that New Jersey farmer Ralph Voorhees paid $2.50 to $3.00 per day for harvest help in 1860. The account book of Orange County farmer James Hawxhurst also shows he paid two men 1£ ($2.50) each, per day for mowing in 1828. Actual farm wages were significantly less than these figures.\textsuperscript{16}

For instance, regarding hired help and mowing, there is an assumption in the secondary literature and in certain types of published primary sources that farmers usually hired day laborers. In actuality this situation was less common than unpublished primary sources imply. Families always drew candidates for the scythe first from their own household and then from the ranks of other male relatives, such as those living on neighboring farms. In some parts of New Jersey and New York before 1830 slaves also performed this work. If a
family still required help, no shortage existed of men willing to hire themselves out to mow on shares. Finally, some mowers worked in exchange for labor or food. So farm families could draw from at least four sources labor to help with haying which involved no direct cash outlay on their part.  

Of those families that did hire labor, most seem to have done so on relatively long term bases, such as by the month or year rather than by the day or week. Labor engaged in this fashion cost significantly less and its frequency raises questions about the claim that antebellum farm families in New York and New Jersey strained under a yoke of high labor costs. For example, farm day books and dairies report that wages without board in the 1820s and 1830s ranged from just six to seven dollars a month. This amounted to about thirty cents per day, or from 1½ to 5 times less than comparable day labor rates. Even in the moderately inflationary 1850s farm workers earned no more than nine to twelve dollars per month, or about fifty cents per day. Quite a few families even hired labor on an annual basis. From the 1820s to the 1850s, men engaged for ten to twelve months received $100 to $125, a figure reduced even further when farm women subtracted the value of room, board and washing arrangements from the settled wage. Hiring farm help at per diem rates just did not make sense.

It is also questionable why a landowner would need to hire a day laborer to cut hay in the first place. In reading the secondary literature one gets the sense of a definite urgency during the harvest that is absent in the original sources. Regrettably, Orange County farmer James Hawxhurst left no explanation why he paid three men £1 ($2.50) each per day to mow for him in the summer of 1828. This may be partly explained by the fact that Hawxhurst
regularly hired casual labor. A wealthy individual, he could also marshal the considerable financial resources necessary. But as far as the mowing itself, farmers gained little by cutting large quantities of hay quickly, unless rainfall was imminent. Otherwise, they took on no more than could be raked, cured and carried to the barn over the space of a few days. So the influence of high wages in agriculture in the New York City region seems to be less than once thought. Based on farmers’ adoption of other types of improved implements (plows and harrows, for instance) it is likely that the failure to adopt mechanical mowing machines is attributable to reasons other than wages. For instance, despite the claims of manufacturers, mechanical mowing machines built through 1860 actually offered little in the way of “improvement.” Models built during the first fifteen years of the machine’s existence suffered from design problems which resulted in uneven and unreliable performance. Even well built machines required expensive repair services by trained mechanics and frequent purchases of spare parts. This was all after the purchaser had made a significant up-front investment in the machine. Finally, purchase of a mowing machine did not automatically mean a farmer could hang up the old scythe and forget about it. Like the hoe and the cultivator, use of this hand tool remained necessary under certain conditions. Reliability was important when it came to making a decision to buy. Machines manufactured in the 1840s and 1850s experienced design-related problems of varying severity such as excessive draft, clogging, and uneven cutting. At the well-publicized “Geneva Trials” sponsored by the New York State Agricultural Society in 1852, less than half the machines entered cut as well as a scythe. More often than not the average purchaser discovered the new investment failed to perform as promised. For example, in 1854 Suffolk
County farmers Herman and Zachariah Hallock twice purchased and returned two different mowing machines because of design-related problems. One machine, which cut a moderately wide forty-five inch swath required the pulling power of four horses.\textsuperscript{21}

Trials held at Syracuse in 1857 showed more reliable machines started to reach the market. This reduced a significant barrier to ownership among the general farming population. But even on the best of them, parts wore out, broke, or otherwise required replacement. Such problems often developed when the machine was needed most, an unanticipated problem remarkably different from the trusted scythe. Moreover, unlike hand tools, a broken machine sometimes required repair skills beyond those of the average farmer. Purchasers now relied on manufacturers and the repair services they provided more than ever before. New Jersey farmer Samuel Megie gained firsthand experience when he purchased a brand new mowing machine in the spring of 1862. It arrived on May 30 but Megie returned it after only a week and “fetched another one home.” Meanwhile, the haying season began, but the mower sat crated until early July waiting for a representative of the manufacturer to assemble and explain its operation. Even after this late date, Megie continued to cut some of his hay with a scythe.\textsuperscript{22}

Barring its imperfections and broken parts, the initial investment in a mechanical mowing machine represented a huge financial commitment, costing four times that of a cultivator and ten times more than a new plow. A mower cost around $100, a tremendous sum for the nineteenth century, made even larger if a portion of that sum came at interest. New York implement dealer Charles Mapes sold two industry standards, Ketchum’s “light” one-horse mower and the popular “Buckeye.” The former, with a 3 ½ foot cutting bar cost
$75, and the latter, a fifty-six inch monster, cost $120. Buyers of "combination machines" which cut grass and grain spent even more. New Jersey farmer James Bakewell paid $140 for one in 1854, and the Long Island Agricultural Works advertised a model for $130 five years later. Some less affluent families pooled resources with relatives to purchase a single machine. For example, at his death in 1868, Bergen County farmer Nicholas Durie owned half interest in a mower. But most stuck with the tried and true scythe, which cost considerably less, even when factoring in labor. Made in small factories, mass produced scythe handles and blades were very affordable and highly effective. For example, in 1861 Alexander Cameron spent only $6.60 on brand new state of the art mowing equipment. He bought two new scythe handles for $3.00 and two blades at $1.80 each from a Paterson dealer and carried everything home that same day, ready for immediate use in the field.²³

Not until the severe economic dislocation wrought by the Civil War did large numbers of farm families in the New York City Region purchase mechanical mowing machines. A series of interrelated events beginning in 1862 brought a rather sudden end to a two-century old tradition of mowing grass. Calls for troops and reinforcements eventually led to a manpower shortage which caused labor costs to spiral upwards leaving more farm families to compete for a smaller pool of less desirable workers. Annual and monthly wage agreements evaporated because price inflation deterred laborers from working for anything but a daily wage. Increasing hay and grain prices encouraged farm families to boost production of both to reap the benefits of wartime inflation. Mowing machines provided a partial solution to problems of a wartime economy.²⁴
For 200 years previous to the war farmers in New York and New Jersey cut hay with scythes. They did this because it was the best way to cut grass, not because of supposed resistance to new methods. By the 1860s, however, designers and manufacturers worked out many of the mechanical kinks that plagued earlier models. At the same time, rising prices and labor costs plus the shortage of family labor made it critical for small-scale producers to invest in this technology.

This said, mowing only involved the first of several steps that made up the entire haying process. While mechanization of the cutting process happened in the last third of the nineteenth century, it occurred much earlier for other aspects of haying. Whether cut by scythe or machine, the grass lay on the ground to cure in the sunlight for a day or two until family members armed with wooden hand rakes brought the swaths together into large piles. This labor intensive task ended around 1815, with the introduction of an improved implement called a horse rake. Colloquially referred to as the “whoa-back!” rake, it is best described as resembling a large wooden comb pulled by a horse along the ground through a windrow. As the pile of dry grass caught in the rake’s wooden teeth grew, the farmer halted and backed up (hence the name) removing the tool from the heap. In this fashion a horse rake helped collect and pile hay quickly and far more efficiently than hand raking, and significantly reducing field labor requirements. One advertisement boasted “it is not exaggerating to say that a man, boy, and horse will perform in the most perfect manner, with this implement, as much work as from eight to ten men with common hand rakes.” In this case at least, the advertiser spoke the truth and use of this improved implement spread rapidly. An additional, and overlooked
point is that the horse rake eliminated the need for women to participate in this aspect of haying.\textsuperscript{25}

The horse rake possessed other advantages characteristic of a well-designed improved implement. Even though Percy Wells Bidwell called the rake "a simple affair" he failed to note that this was its best feature. Practical minded farmers preferred uncomplicated tools without moving parts, because there were fewer potential problems in the field. Like the harrow, the rake could be built on the farm. Both the \textit{Cultivator} and \textit{New York Farmer} encouraged farmers to do just this. They printed a diagram and provided instructions for building Prudney's Patent Revolving Horse Rake, a tool "so simple and plain in its construction, as scarcely to need any other description."\textsuperscript{26}

Two decades after the introduction of the whoa-back rake, there emerged a modified device called the revolving horse rake. Pulled by a horse and operated by a boy, this tool glided across the ground on skids. As with its predecessor, the operator walked behind, steering the rake as it collected hay in its wooden teeth. At any moment by pulling a lever, the operator caused the section holding the teeth to rotate or "flop over," leaving the pile in one smooth movement. According to Ulysses P. Hedrick this tool "attained almost universal use in American hay fields and lingered long after the wheel horse rake was common" in the 1870s. Unlike mowing machines, which cost $100 or more, these improved rakes boasted attractive prices. James Bakewell owned one worth only $5.50, and Peter Durie's was valued at a dollar. For all these reasons, farmers adopted the horse rake soon after its introduction. It met a set of criteria important to practical-minded farmers: simplicity, inexpensiveness and effectiveness. It reduced the need for slow and extensive family labor in the field, replacing
it with a faster and more efficient process. Improved plows and harrows matched these same
criteria, as did hand hoes and scythes.\textsuperscript{27}

After raking, some farmers followed the English practice of forking the grass into racks
called “cocks” to facilitate drying. Others put it directly into their wagons and carted it off to
storage. Complete dryness, so important for baled hay, did not present a particular concern in
the nineteenth century because farmers generally stored hay loose in mows and on poles high
above the barn floor. Even those who sold pressed hay did not perform this task in the
field.\textsuperscript{28}

Farmers recognized the value of timothy and clover hay and even in the colonial period
kept both under cover in barns, over carriage houses, in “hovels” and hay barracks. The hay
barrack is important because it provided farmers with an easy and effective method to store
and use hay. In this way it fit in with the agrarian need for practicality. A Dutch cultural
artifact common to the rural landscape of northern New Jersey and downstate New York,
these “haystacks with moveable roofs” achieved widespread cross-cultural use within and
beyond that region before 1800. The barrack is incredibly simple, consisting of only a roof
and four or five stout poles with holes drilled through at regular intervals. To “raise” the
structure farmers dug the post holes and positioned the roof over them in such a way that the
poles fit through openings in its frame, down into the ground. Using a lever and fulcrum, two
men then raised the roof one corner at a time, pegging it in place as they went, to heights of
twenty feet or more. Then they forked hay underneath in a carefully proportioned stack. The
barrack’s construction permitted farmers to erect and dismantle it virtually anywhere: in the
hay field; near the farmyard; or in a pasture. Some farmers built a floor six or eight feet
above ground level and then walled in three sides below, creating a winter shelter for cattle with fodder above. Evidence exists of their continued use through the first quarter of the twentieth century.²⁹

In *The Impending Crisis of the South and How to Meet It*, Hinton Helper argued that hay held the distinction of being the true “king” of all crops, as opposed to cotton. Grass however, had assumed premier status among commercial crops grown in the northern states well before 1857. The tools chosen for cutting grass and collecting hay reflect agrarian attitudes of practicality and simplicity. They also worked within the context of Regional environmental, economic, and social conditions. The barrack replaced the outdoor hay stack well before the nineteenth century, just as the horse rake replaced raking by hand before 1820. But mechanized mowing remained a novelty for four more decades due to expense, reliability, and because the tool it sought to replace worked so well.³⁰

Despite its importance, the length of the haying season was determined in part by the amount of grain grown on the farm. This is because of rotational schemes that alternated grass, corn, potatoes and grain, because grain crops ripened in succession from roughly the second week of July to the end of August. Small grains including wheat, rye, oats, and buckwheat ripened over a period of time less than two weeks in length. During this time heavy rain or strong wind could ruin the entire crop. Overripe grain was also difficult to harvest and occurred only with great losses. Thus, when it came to harvesting, small grains were time sensitive crops. For a few families in the New York City region, these grains accounted for the majority of their annual income. The remainder raised grain for use on the farm, like oats sown for feed or cover, or rye sown for flour. Whether for commercial or
domestic use, the methods used to harvest grain reflected the agrarian emphasis on practicality and utility in the context of environment, economy and society.  

Nineteenth century agricultural leaders and the historians who rely on their records both emphasize the problem of "expensive" labor and its relationship to mechanized reaping. The fallacy of this line of reasoning with respect to the hay crop has already been shown, and a similar relationship existed for grain harvesting. The same family members and hired hands who mowed grass in June cut grain in July and August. As with mowing in the New York City Region, reaping remained mainly manual labor through the Civil War era and later. Few farmers ever invested in reapers because they were cost effective only in areas of high production and wages. This meant the American West.  

For harvesting small grains farmers used a hand tool called a cradle scythe, colloquially known as a grain cradle. Introduced in the middle eighteenth century, the cradle consisted of a traditional scythe modified with a set of wooden fingers that extended from the lower portion of its curved handle. Two views of cradlers are shown in Figure 6.4. Cradlers used the tool as they would a "naked scythe," swinging the cutting edge full force into a patch of standing grain, and slicing the stalks off near ground level. Yet here scythe and cradle functions diverged. As the severed stalks fell away they became captured in the cradle's wooden fingers. Meanwhile, as the arc of the cradler's swing reached full extent he tilted the tool slightly, and gently deposited the stalks in a heap. Depending on the type of grain being cut, an average cradler could reap two or three acres in a full day, while a good one under favorable conditions could cut four acres between sunrise and sunset. A cradler could move through buckwheat and oats faster than he could wheat or rye. Cradlers seldom worked
alone, which is significant considering historians discussing the limits of cradling, usually regard only the rate at which one man cut grain. For example, on the afternoon of 12 July 1854 Benjamin F. Conklin and a hired hand cut four acres of wheat, a feat Conklin triumphantly recorded in his diary.33

Like haying, reaping involved multiple steps that discouraged cutting too much too quickly because the grain would inevitably spoil on the ground. Since reaping was a time sensitive task, one or two persons, not infrequently women, followed closely behind the cradlers bunching fallen stalks in to sheaves and binding them tightly. They gathered the sheaves and carried them to an airy overhead barn loft to await threshing in December. Space permitting, some farmers stored grain in hay barracks. Through the 1850s the removal of sheaves from the field ended this harvest.34

Mechanization of the wheat harvest is one of the celebrated achievements of the nineteenth century. In tribute, history textbooks always devote a few paragraphs to the
development of the mechanical reaper by Hussey and McCormick in the late 1830s. Writers of agricultural and economic histories have also documented the long line of competitive machines and improvements that inevitably followed. Important on a national level, farmers in the New York City region did not adopt these machines until the 1870s, and in many places general ownership never occurred. Like those early mowing machines, reapers were built for environmental, economic and agricultural conditions characteristic of a land far to the north and west of New York City. Therefore, until these tools met the needs of farmers by offering a definite advantage over hand methods, the latter prevailed.  

Grain culture differed from hay because many farmers in the New York City region were forced from commercial wheat cultivation before 1835. Although some areas, like central Long Island and central New Jersey retained a moderate wheat growing capacity, in the remainder of the region most farmers raised just enough for use in the home. As mentioned earlier, many families on marginal land in the Hudson Valley and northern New Jersey shifted from wheat to growing grass. Others compensated by sowing rye in place of wheat. Those farm families located near towns or water transportation increased commercial oats production. As long as families compensated for reduced wheat production by sowing other grain, the decline of wheat did not preclude adoption of a mechanical reaping technology. Each of these grains, including barley and buckwheat, could have been cut with either a cradle or a mechanical reaper. Table 6.1 shows the percent of improved land devoted to six grain crops harvested in eight New York State Counties for the year preceding June 1, 1855. Two counties exceeded the state average of 21½ percent, while four more devoted more than 10 percent of their improved land to grain.
Table 6.1 Small Grain Production as a Percentage of Improved Acreage, 1855

<table>
<thead>
<tr>
<th>County</th>
<th>Barley</th>
<th>Buckwheat</th>
<th>Spring Wheat</th>
<th>Winter Wheat</th>
<th>Oats</th>
<th>Rye</th>
<th>All Small Grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putnam</td>
<td>0.00%</td>
<td>2.01%</td>
<td>0.00%</td>
<td>0.54%</td>
<td>3.94%</td>
<td>2.24%</td>
<td>8.73%</td>
</tr>
<tr>
<td>Kings</td>
<td>0.00%</td>
<td>0.13%</td>
<td>0.00%</td>
<td>5.59%</td>
<td>2.63%</td>
<td>1.60%</td>
<td>9.96%</td>
</tr>
<tr>
<td>Westchester</td>
<td>0.06%</td>
<td>1.36%</td>
<td>0.09%</td>
<td>2.02%</td>
<td>5.23%</td>
<td>2.38%</td>
<td>11.14%</td>
</tr>
<tr>
<td>Richmond</td>
<td>0.18%</td>
<td>0.52%</td>
<td>0.17%</td>
<td>5.26%</td>
<td>4.92%</td>
<td>1.36%</td>
<td>12.42%</td>
</tr>
<tr>
<td>Orange</td>
<td>0.01%</td>
<td>0.77%</td>
<td>0.00%</td>
<td>2.29%</td>
<td>4.94%</td>
<td>5.79%</td>
<td>13.80%</td>
</tr>
<tr>
<td>Suffolk</td>
<td>0.31%</td>
<td>1.88%</td>
<td>0.01%</td>
<td>6.09%</td>
<td>6.30%</td>
<td>3.23%</td>
<td>17.82%</td>
</tr>
<tr>
<td>NY State</td>
<td>1.56%</td>
<td>2.15%</td>
<td>1.42%</td>
<td>4.40%</td>
<td>9.88%</td>
<td>2.06%</td>
<td>21.47%</td>
</tr>
<tr>
<td>Queens</td>
<td>0.15%</td>
<td>5.27%</td>
<td>0.00%</td>
<td>5.75%</td>
<td>7.88%</td>
<td>5.13%</td>
<td>24.19%</td>
</tr>
<tr>
<td>Rockland</td>
<td>0.02%</td>
<td>11.63%</td>
<td>0.02%</td>
<td>2.28%</td>
<td>11.91%</td>
<td>32.30%</td>
<td>58.16%</td>
</tr>
</tbody>
</table>

Source: New York Secretary of State, *Census of the State of New York, 1855.*

Note: No corresponding data exist for New Jersey.

By all counts, few farmers in the New York City Region purchased mechanical reapers before 1870. This is despite the fact that three of eight counties devoted more than fifteen percent of their land to grain crops, and that mechanical reapers could cut between twelve and twenty acres in a day. One important reason is that like their mowing machine cousins, reapers also suffered from design flaws and mechanical problems. The Geneva implement trials of 1852 only served to reinforce doubts that already nagged thousands about the long-term utility of these tools. As with mowing machines, the trials pitted nine reapers against each other to test quality, cost and speed. The results were largely disappointing, although increasing competition among manufacturers in the late 1850s resulted in better machines. Manufacturers wrestled with the reaper's poor reputation. For example, an advertisement for Whitenack's New Jersey Reaper and Mower (Figure 6.5) emphasized the "Great Improvement" made for model year 1856 over previous years' models. Even on the eve of the Civil War, disappointment was not uncommon. For example, in 1860 J.H. Wells' father bought a
Kirby model, but dissatisfied with its performance returned it and purchased a Buckeye. The Buckeye cost 200 pre-inflationary dollars. This is slightly high compared to other machines, but even at 130 or 150 dollars, reapers cost far more than many families could afford.\footnote{37}

\begin{center}
WHITENACK'S IMPROVED NEW-JERSEY MOWER AND REAPER.
\end{center}

Figure 6.5 Combination Machine, Reaping Grain

\textit{Source: New Jersey Farmer} (June 1856): 312.

The decrease in per-farm production of wheat in the New York City region reduced the need for day labor to harvest this time-sensitive crop. Monthly and annual employees could handle the work without requiring extra assistance. An opposite situation existed in the great wheat centers of the nation, where harvest labor was dear and expensive because cradlers commanded a daily wage. The underpinnings of the argument for the adoption of improved implements rest on an assumption that similar agricultural and economic circumstances
existed between "East" and "West." This was not the case, and the actual conditions in the New York City region favored continuation of hand methods.

Despite the adoption of mechanical reaping technology in New York's Genessee Valley and the trans-Appalachian West, farmers in downstate New York and northern New Jersey failed to follow suit. They continued hand harvesting methods because mechanical reapers offered them no distinct advantages. Furthermore, by the time the first mechanical reapers came on the market in the 1840s, farmers in New York and New Jersey had already begun to sow less grain for commercial purposes. Even though most families continued to raise some buckwheat, rye, oats and even some wheat, production of a marketable crop remained low enough that it was uneconomical to invest in a mechanical harvester. In addition, cradlers' wages and equipment costs were far less than the costs associated with buying, operating and maintaining a new reaper. The cradle was also simple to use and other than sharpening, required little in the way of maintenance or repair. It is true, the reaper transformed agriculture in the Middle West in the middle 1850s and made possible large scale operations on the great plains, and in the far west years later. It had no such effect on the Northeast. Even Cyrus McCormick recognized the potential for sales to western farmers and moved his firm from Virginia to Chicago in 1847. Farmers in the New York City Region could have purchased reapers as they did other improved implements but chose not. This shows that practical thinking, rather than backwards attitudes influenced the adoption of this, and other technological choices on the farm.  

While they rejected mechanical grain harvesting equipment farmers showed considerable interest in simultaneous development of mechanized threshing. Threshing is the
process of separating grain heads from their stalks. Speeding this task became an extremely attractive proposition because it allowed for abandonment of truly ancient methods of separating grain from straw by tread and flail and reduced a dirty, dusty task from as much as two weeks to as little as two days. It also ended forever a task once performed outdoors at the coldest part of the year, replacing it with easier work performed in late August. Earlier threshing also allowed farmers to sell grain in the fall rather than in winter only, opening greater marketing opportunities. Finally, mechanized threshing wasted less grain than either threshing by flail or by treading it out.\textsuperscript{39}

Threshing machines cost less than reapers and mowing machines, but still did not rank among hoes and harrows. First available in the 1820s, like most new devices only wealthier farmers could afford their rather steep prices. For example, in 1819 a New York implement dealer offered a stationary four-horse threshing machine for $18.75. This price included only the machine. Adding a power supply and carriage raised its price to nearly seventy dollars. In later years larger and better stand-alone machines could be purchased for fifty to seventy-five dollars, but power supplies raised the overall cost to 100 dollars or more. For example, in 1861 Charles Mapes sold a forty-dollar model, but adding a sweep or treadmill raised the price an additional fifty to ninety dollars. Mapes also sold the Emery Patent Thresher. Pictured in Figure 6.6, with a horsepower this machine cost $265, a hefty price tag for anyone who did not engage in high volume threshing. Like today, farm auctions and estate sales were always good places to pick up used threshing machines and horse powers, so many farmers probably paid less than prices quoted for new equipment.\textsuperscript{40}
Yet general ownership never became necessary because this task was not time dependent like reaping. Rural entrepreneurs realized rather quickly that they could encourage less affluent farmers to forego the expense of buying a machine by leasing use of their own. J.H. Wells recalled a neighbor who owned a stationery thresher in the mid-1830s. The device attracted business for a radius of three miles. After 1850 itinerant threshing crews traveled the countryside through summer and fall, working for meals and for a portion their labor. Operating the newest equipment, they performed a distasteful task quickly which formerly had occupied a considerable amount of time in the winter months. For example, Samuel Megie hired a crew for Monday morning 25 August 1862. They threshed 715 bushels of oats that day and another 100 the next day, plus fifty-eight bushels of wheat.41

Threshing differed from other harvest activities in that it was not time sensitive and could be delayed for months. For this reason, threshing had been traditionally viewed as a winter task. With the arrival of mechanized threshing machines, farmers easily recognized
the distinct improvement over traditional threshing methods. Nevertheless, general
ownership among the agrarian population did not occur because they remained too expensive
for the average family to afford. This opened the way for rural entrepreneurs to lease use of
their machines and later, for farm threshing crews to travel from farm to farm performing
custom work. The fact that a crew might not arrive at the farm gate until several weeks after
the harvest caused little concern. It fit in with the cultural expectation that threshing was a
task to be performed later, after more pressing tasks were completed. This was a rather
clever way to distribute the benefits of an expensive, but improved technology to a wide
audience at a lower cost.

Insects and disease plagued crops from beginning to end of the growing season, but
exhibited their worst characteristics during the summer months. Destructive forces of bugs
and bacteria moved virtually unchecked through nineteenth century America. The
Northeastern agriculturist’s proximity to Atlantic seaports in both the U.S. and Canada also
made early and frequent exposure to newly imported threats inevitable. The Hessian Fly,
wheat midge, asparagus beetle (Figure 6.7), cabbage moth, apple borer and Canada thistle all
arrived from foreign lands before the Civil War. When these calamities arrived, their initial
effects were swift and severe and the Northeast became a staging area for incursions in every
direction. Reports of damage seem unbelievable to readers of the present in an age where
chemicals eliminate intruders easily and effectively. For example, armies of tiny beetles
devoured entire fields of newly-sprouted turnips overnight. This necessitated re-sowing,
acceptable with turnips, which germinated in a matter of days, but out of the question for
more complex plants. Writing to his father in 1858 New Jersey vegetable farmer Garret
Bergen bemoaned the loss of nearly 3,000 recently transplanted tomatoes to the ravages of "black worms" which severed the stems with frightening efficiency. At least a month old at this time, the option of replanting from seed so late in the season was not realistic. This being the norm, rather than the exception, agriculturists preferred prevention to dealing with problems after their arrival.\textsuperscript{42}

![Asparagus Beetle, Larvae and Pupa](source)

\textit{Source: Henderson, Gardening for Profit, 128.}

The historiography of pest control in American agriculture focuses on the origins and development of chemical pesticides. Farmers began to use insecticides in the last quarter of the nineteenth century, and by 1900 fresh incursions elicited greater chemical responses. After the Second World War use of herbicides and insecticides became commonplace in American agriculture. Historians tend to view the folk methods that predated chemical agriculture with a combination of curiosity and romance. They present figures as clever, but often employing futile methods. According to Paul Gates, before the 1870s "most of the suggestions for the destruction of insects were useless." Descriptions of curiosities such as the "hopper dozer" and similar machines sprinkle the historical literature.\textsuperscript{43}
In the New York City region, farmers and gardeners took pest control seriously, whether for weeds, disease or insects. The best folk methods emerged through trial and error. Agriculturists used good husbandry, their basic knowledge of plant and animal biology, and localized treatments of natural elements to address these problems. They also expected that losses would occur. Careful observation, localized treatment and tolerance for a certain amount of damage through the activities of pests and disease are important principles of contemporary organic agriculture. A century and a half ago, agriculturists did not think in such terms but organic farmers and gardeners attempt to replicate many of their methods today.

Improved culture through good husbandry is probably the easiest means to resist damage from insects or plant diseases. Measures like fertilizing the soil, crop rotation, fall plowing and drainage promoted healthier plants better able to withstand inevitable attacks. Except for draining fields, an expensive proposition, agriculturists in the New York City region led the nation in these measures. In fact, well before the year 1800 declining yields, depleted soil and attacks by insects, plus increased market opportunities encouraged these cultural changes. For example, Suffolk County farmer Ezra L’Hommedieu dated increased use of fertilizer in his neighborhood to a response to the utter devastation of the wheat crop by the Hessian Fly in the 1780s. Farmers understood that fall plowing exposed grubs and insect eggs to the elements that almost assured their destruction over the winter. Gardeners also noticed that by frequently turning the soil they experienced less destruction from insect larvae.
Beyond farming better, agriculturists attempted to farm smarter. For example, one method for controlling insect damage to crops involved recognizing the environmental relationships that evolved between hosts and pests, and using them as weapons against predatory invaders. For insects this required realizing that they evolved in stages, something agriculturists learned through observation. This became easier after 1853 when the State of New York appointed Dr. Asa Fitch as the first State Entomologist. Fitch produced a series of reports over the next ten years in which he recorded the life stages of scores of insects and how to identify them. This made them easier to destroy.

Dr. Fitch (like others long before his day) observed that certain insects evolved in such a way that their life cycles synchronized with the growth stages of certain host plants. They realized that if the timing of these two cycles could be disrupted even a little, insect damage might be reduced. Thousands followed this practice by sowing winter wheat later than usual. They reasoned, correctly, that autumn frosts killed the Hessian Fly before wheat reached a stage in its growth where the fly recognized it as a suitable place to lay eggs.

Early sowing, on the other hand, also helped by allowing a more mature plant to go against its natural enemies when they eventually arrived. For example, by sowing peas earlier in the spring, gardeners reduced damage by the “pea bug” because “the quicker the plant is pushed on before its foes are alerted, the better.” Knowledge of insect life cycles also helped gardeners avoid planting susceptible crops at certain times of the year. Thomas Bridgeman warned not to transplant cabbages in the month of June, the most active time for a “root grub” which relied on that crop. Using biology in this way against plant foes did not
work for every case, but for agriculturists willing to spend time observing their surrounding environment it paid off.

Agriculturists also used their rudimentary understanding of genetics to limit damage from predatory insects and diseases. Farmers and gardeners introduced new seed each year in such a way that they retained hope of identifying one that resisted or reduced damage. In the nineteenth century, agriculturists received seeds from so many sources that considerable genetic variation existed among the same plants. They observed that varieties of the same crop reacted differently to destructive agents. An example of the usefulness of this to farm families occurred around 1843, when a never before seen malady began killing potato plants in New York State and other parts of New England. Lacking knowledge about bacteria of fungi, no one could remedy this outbreak of blight. In the early 1850s a Utica, New York farmer named Charles Goodrich noticed that a variety of the plant recently imported from Peru survived “the disease” when others did not. He distributed the seed to others, and this variety became the stock for new disease resistant varieties that dominated the market through the end of the century.

Wheat growers suffering from the depredations of the Hessian Fly and Wheat Midge also switched (temporarily) from common white varieties to red ones that resisted insect damage more effectively. Finally, farmers suffering from “blasted” wheat observed the malady occurred in grain sown near barberry bushes. Without having to understand the biology behind this relationship they realized that the bush somehow caused black stem rust and expended tremendous effort over the years destroying those plants.45
Some agriculturists observed a connection between increasing insect-related problems and decreasing bird populations. As early as 1850 farm journal editors and the leadership of agricultural societies pressed state legislatures to enact legislation prohibiting hunting, collecting bird eggs or destroying their nests. One proponent even went so far as to praise the lowly crow! Writing in the 1880s and looking back over the previous decade Peter Henderson credited the importation of the English sparrow for bringing about a reduction of insect problems in gardens around New York City. Given the lack of knowledge about bacteria and its contribution to disease, and the fact that insects reproduced so rapidly, agriculturists did surprisingly well. In fact, they did far better than one would think considering the emphasis on the impracticality of some of these methods by historians. Like other organic approaches these biological responses worked slowly over time. They were of little assistance against the typical “invasion” which might occur once or twice a season.\(^46\)

Severe cases required direct localized treatment. This became something of a specialty for gardeners who suffered from a large numbers of insect pests. Successful gardeners regularly inspected their crops and treated afflicted areas in a variety of ways, including using folk remedies. A tribute to their effectiveness, many are still used by organic farmers today. Gardening guides recommended applying various remedies like sulphur, lime, wood ash and liquid soap. For example, they used wood ashes and lime to deter flea beetles, cucumber beetles, caterpillars and worms. Writing about lettuce Robert Buist advised “see that they are not preyed upon by slugs; if so, a dusting of air-slaked lime or soot will destroy them.” Today organic gardeners dust ash and lime on vegetables with similar results against root maggots and squash bugs. Garden author Barbara Pleasant noted recently: “That same lime
you use to sweeten acidic soil has been hailed as a pest-control remedy for hundreds of years.” Regarding damage caused by slugs she essentially repeats Buist’s message: “A collar of lime laid down around leafy greens or other vegetables discourages slugs.”

Some treatments involved known benefits. For example, Thomas Bridgeman recommended that before transplanting in July, horticulturists dip the roots of cabbage plants in fish oil and plaster of paris “which will not only annoy the worms but prove beneficial as manures.” Other applications provided unintended beneficial consequences. For example, sulphur, currently dusted on grapes to control mildew was recommended for the same problem in grapes in the 1840s. It was also applied to potato plants suffering from blight. Sulphur failed to prevent that disease, but applications possibly helped non-diseased plants growing in alkaline soils by making them stronger and therefore more resistant to attack. Sulphur also prevents scab in potatoes.

Gardeners used mild organic poisons to drive away pests. Liquid soap was a common remedy because it is lethal to many kinds of insects and in small quantities does not harm plants. For example, when applied on melons it temporarily eliminated the ravages of tiny red spiders. Today, organic gardening handbooks recommend use of mild soap or of a product called “insecticidal soap” against insects. Gardeners also used other liquids to drive away pests. An application of “strong tobacco water” in response to suddenly drooping of cucumber or squash leaves revived the plants by causing the insidious striped beetle to temporarily flee the treated area. Horticulturists also used tobacco to fumigate greenhouses. While tobacco is not used in agriculture today to control insects, garlic, hot pepper and onion are, and achieve similar results.
Horticulturists used lime and ash, as well as sticky substances like tar, to create barriers against crawling insects. Tar smeared across tree trunks, for instance, arrested the upward motion of worms from ground to leaf. Today similar barrier methods are in use, although usually these usually incorporate materials not in existence in the nineteenth century. Sticky traps capture crawling and flying insects in a fashion similar to tar, and barriers of diatomaceous earth cut crawling slugs as did ash and lime. Some gardeners used small boxes and “hand glasses” as barriers to prevent turnip flies from destroying tiny cabbage and broccoli plants. At $3.50 each, (in 1870) however, only the wealthiest gardeners could afford very many of these protective devices. Today organic gardeners substitute plastic and aluminum for glass, but the goal of physically barring contact between plant and insect is the same.50

Improved husbandry, barrier and direct treatment methods helped reduce damage under normal environmental conditions. In cases of severe infestation horticulturists resorted to physical removal, a labor-intensive, but normal routine in the garden. For example, every summer orchardists spent hours walking among their trees removing colonies of caterpillars from the leaves. Later in the season they searched for nests to destroy which contained eggs of next year’s crop of worms. Peach growers even had to dig around tree roots in search of grubs that could only be destroyed by hand. Knowingly or not, this time spent searching for insects helped growers became astute observers of changes in the orchard. Early detection through observation was and is a key element of insect control, because if they “are sufficed to remain, they will increase so rapidly, that in a few days the plantation . . . may become
infested; and ... they become capable of perpetuating their destructive race to an almost unlimited extent.\textsuperscript{51}

Sometimes farmers and large scale gardeners attempted to remove insects by hand. This was more of a gesture than effective because of the labor intensity of this work. Peter Henderson summed up the frustration surrounding this method for large scale producers:

I have been a worker of the soil since my boyhood, and every year's experience convinces me of the almost helplessness of remedies against insects or other blighting-plagues that attack vegetation in the open field. It is true that the amateur gardener may save his dozen or two of Cabbages or Roses by daily picking off or destroying the insects; but when it come to broad acres, I much doubt if any remedy will be found to be practicable...

Significantly, this single activity has received the most attention from historians intent on showing the backward methods of nineteenth century agriculture. During major infestations agriculturists did attempt manual destruction. For example, a contributor to the \textit{Memoirs} of the New York State Board of Agriculture recalled his failed attempts to drive grasshoppers from his corn fields during a plague in 1820. Half a century later, in the middle 1870s, children on farms and gardens across the New York City region were employed to pick Colorado potato bugs off the plants they so quickly destroyed. They destroyed insects in quantities almost unimaginable today. For example, the work crew of New Jersey farmer Daniel Voorhees picked a \textit{half bushel} of potato bugs in a single day in the summer of 1875. Yet on even small lots of land such methods could never keep up with fast-growing insect populations and, as happened during the infestation of 1875-76, growers were overwhelmed.\textsuperscript{52}

Today, and in the past, insects and disease are two problems that make agriculture an uncertain business. One important difference between present and past is that in the
nineteenth century farmers and gardeners planned on significant losses, although when and where this would occur remained unknown. In response many simply over planted, a far more practical approach compared to replanting after disaster struck. A common practice, which worked well with hand planting, but not by machine, was to plant several seeds where only one was necessary and later thin out the extras. Jared Van Wagenen recalled an “ancient rhyme” used to explain to children the reason for planting six seeds of corn in each hill.

One for the blackbird
One for the crow
One for the cut worm
And three to grow

Still, agriculturists expected to do a certain amount of replanting. According to Robert Buist, “In some seasons we have to sow, and sow, and sow again, either from the effects of drought or the effects of the fly, which frequently destroys . . . in dry seasons it is particularly destructive.” Teunis Bergen’s tale of repeat sowings due to faulty seed was told in the previous chapter, but he also had to replant after “sand fleas and yellow flies” consumed his white spine cucumber plants. Organic agriculturists of the present day possess similar attitudes, understanding that by not using chemical pesticides growers should expect greater short-term losses.

Sometimes damage was so severe or unstoppable that it forced agriculturists to cease culture of afflicted crops. In the New York City region farmers abandoned white wheats in the 1790s, again in the 1830s, and potatoes for several years in the middle 1840s. Horticulturists experienced similar crises. An unknown disease called “yellows” killed peach trees across the Northeast during the first four decades of the nineteenth century and periodically after that. Some asparagus and cabbage growers also faced a series of disastrous
losses that forced the abandonment of those crops for a period of years. For example, Peter Henderson observed that gardeners in Long Island and Hudson County, New Jersey could only raise cabbages on the same ground in alternate years because of attacks from an unknown malady he called “club root.” Yet Henderson’s neighbors just a few miles to the southwest in Essex County experienced no similar problem. In some cases agricultural writers recommended removal and destruction of afflicted plants and stock, a practice still adhered to today.55

True departure from traditional disease and insect control occurred in the early 1870s just in time for the invasion of the Colorado potato beetle. The development of the arsenic poison Paris Green represented a watershed in agricultural history. This is because its use caused farmers and gardeners to raise expectations, and instead of accepting losses by insects as inevitable they began to believe that these could be prevented. First dusted, but later sprayed on plants (Figure 6.8), Paris Green killed far more effectively than anything before. Having proven itself in the potato fields, agriculturists incorporated it into their arsenal immediately, as they did with other agricultural improvements.56

Summer in the garden was characterized by the maintenance and subsequent harvest of annual crops planted the preceding autumn, and in early spring. The included hardy “winter vegetables,” such as cabbages and broccoli, and spring vegetables such as potatoes, sweet corn, summer squash, and cucumbers. Gardeners also marketed these crops on a regular basis. For farmers, summer involved harvesting perennial wild fruits and domesticated grasses, plus bringing in winter grain sown the preceding autumn, and maintaining crops sown in the spring, but not scheduled to be harvested until autumn.
Both farmers and gardeners selected tools and equipment carefully, favoring devices characterized by low cost, suitability to local environmental conditions, and that worked better than those currently in use. Low farm wages and the availability of family labor permitted agriculturists to adopt these new technologies without haste, a practice criticized by "progressive" farmers and agricultural journalists. Agriculturists viewed improved cultivators, mowing machines and reapers from a careful distance but incorporated threshing machines into seasonal routines rather quickly. The tremendous economic dislocation caused by the Civil War, and various improvements made over pre-1850s ear machines encouraged more widespread adoption of these more expensive implements in the middle 1860s.

Through the nineteenth century, summer damages by insects and disease increased in number and severity. Agriculturists fought back using biological and cultural responses, and
by trying time-tested folk remedies. These aimed at reducing, but not eliminating damage, and while often effective, they did not always work. Development of highly effective natural poisons in the 1870s and 1880s helped raise expectations for products designed to eliminate, and (much) later even prevent damage. By 1900 agriculturists, particularly in the growing area of pomology, had adopted a small arsenal of chemicals to use against various calamities. Although it was not evident at the time, this fundamentally changed the relationship between agriculture and the environment.

Summer passed very gradually into autumn. Since the harvest dominated both seasons, change is observed most readily in the type of crop being carried in from the field. Summer farm crops tended to be perennial or wild. Summer garden crops are similar in that they were either autumn-sown plants that survived winter in a cold frame, or were sown in hot beds early in the spring. Autumn farm and garden crops differed in that they tended to be sown outdoors in late spring. The clearest indication of autumn's approach was the change in the weather, but for farmers and gardeners autumn arrived long before cooler temperatures.
Notes


9 Danhof, *Change in Agriculture*, 205; Samuel Megie’s hired hand used a cultivator on corn, beets and young melons. Diary of Samuel Megie, Jr., 2 July 1862, New-York Historical Society; One New Jersey farmer recalled using a “small iron tooth rake” to keep down weeds between plants. *Annual Report of the New Jersey State Agricultural Society for the Year 1862-63* (Trenton: David Naar, 1863), 66; *New Jersey Farmer* (April 1856): 251; Diary of Samuel Megie, Sr., 29 May 1862; Account Book of Alfred Cutting, 10, 11 August 1866, MS-3, Box 1, Folder 2, Staten Island Historical Society.

10 Danhof, *Change in Agriculture*, 204-05; Hurt, *American Farm Tools*, 36-37, 39; Schmidt, *Agriculture in New Jersey*, 139-40. In general, mention of cultivator use in farm diaries
becomes more common in the 1860s and 70s. The sulky cultivator was introduced in the 1860s. These machines did not skip as much as models without wheels, an attribute which made them popular among gardeners. Schmidt, *Rural Hunterdon*, 104 finds use of sulky cultivators in Hunterdon County in the 1870s. Hedrick, *History of Agriculture*, 289; Diary of Benjamin F. Prince, 31 May 1879, SCHO.


12 For commencement of the haying season see: Jonathan Horton Diary, 17, 19, 23 June 1847; Ann Cock to William Cock, 28 June 40, Sullivant Collection, Underhill Society of American, Oyster Bay, New York; Diary of Adriance Van Brunt, 25 June 1828; For completion of this season see: Ruth Velsor to Elizabeth Van Cott, 23 July 1863, Velsor Family Papers, Box 5, Folder A, Long Island Studies Institute, Hempstead, New York; Ann Cock to William Cock, 26 July 1840; Journal and Account Book of James Hawxhurst, 17 July 1835, Manuscripts Collection, New York Public Library; and, Diary of Adriance Van Brunt, 19 July 1828. Early scythes had straight handles, but by the 19th century builders incorporated a twist into the shape of the handle (called the “snath”) for better leverage. Hurt, *American Farm Tools*, 40, 84. Diary of Benjamin Conklin, 28 June 1854.


15 Danhof, *Change in Agriculture*, 242; Schmidt, *New Jersey Agriculture*, 141-42.


17 Jonathan Horton Diary, 23 June 1847.
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Long term labor agreements were impossible to make during the inflationary period of the 1860s when inflation and competition for labor was high. Labor rates derived from various farm account books for 1820-70 period.

The belief that farmers and gardeners paid "high" wages to farm hands is not true for the New York City Region at this time. Use of this hypothesis is exemplary of an historical model that works for western economic conditions being applied incorrectly to eastern economic conditions. Van Wagenen, *Golden Age of Homespun*, 234-35.


Schmidt, *New Jersey Agriculture*, 142; Mapes, *Illustrated Catalog for 1861*, 102. Most diary entries for the Region only mention “raking,” but a horse rake is specifically mentioned in the following sources: Diary of Elizabeth Mulford Crane, 29 July 1824, typescript, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey.


28 Schmidt, *Rural Hunterdon*, 100, 250; Jonathan Horton Diary, 24-25 June 1847; Diary of Samuel Megie Jr., 4 July 1862; Diary of Alexander J. Cameron, vol.1, 1 July 1862; Diary of Benjamin F. Prince, 24 June 1879. For a description of the steps involved in cocking hay, see Edward Nicholl to Solomon Townsend, 28 July 1871, Townsend Collection, Raynam Hall, Oyster Bay, New York. Contrast R.L. Pell’s claim that his hay remained in cocks for two weeks with James Van Siclen’s comment that he only cocked after rainfall. Paul Gates, *Farmer’s Age*, 250, writes that hay cocks were for overnight use. American Institute of the City of New York (hereafter cited as AICNY), *Seventh Annual Report of the American Institute* New York State Assembly Document 244 (Albany: Weed, Parsons and Co., 1849), 455; NYSAS, *Transactions* 6 (1846), 120; Schmidt, *New Jersey Agriculture*, 97 stresses that farmers understood the importance of using good judgement when making decisions regarding the cutting and storing of hay, but I do not see such consideration in the historical record.; Richard A. Brooks, ed., *The Diary of Michael Floy, Jr*, 16 February 1834; J.A. Hammond Farm Journal, August, 1854; According to Gates, Ibid, 252, hand powered hay presses were too small for commercial use. The horse powered press was not available until the Emery Press of 1853. Hurt, *American Farm Tools*, 95-96; Some farmers mowed on “wet” days Diary of Benjamin F. Conklin, 30 June 1854; on other methods to dry hay see Diary of Benjamin F. Prince, 12 July 1879; Jonathan Horton Diary, June, 1847; AICNY, *Eighth Annual Report* New York State Assembly Document 199 (Albany: Weed, Parsons, 1850), 454.

29 On storage in a “hovel” see Diary of John C. Bergen, 13 July 1846, Brooklyn Historical Society. On storage in buildings other than barracks see Journal and Account Book of James Hawxhurst, 28 July 1832; Diary of Amelia Brush, 2 July 1863. Brush Family Collection, Huntington Historical Society, Huntington, New York; Diary of Samuel Megie Jr., 5, 24 July 1862. For use of barracks see Diary of Adriance Van Brunt, 3 October 1828; Diary of Elizabeth Mulford Crane, 24-25 December 1824; Day Book of the Hicksville, Long Island

30 Gates, History of Agriculture, 249.

31 DeBow's Review (October 1855): 469, table 4; Account Book of John C. Bergen, 11 July 1871, Brooklyn Historical Society. On commencement of the wheat harvest, see Diary of Adriance Van Brunt, 15 July 1828; J.A. Hammond Farm Journal, July 1853; Diary of Amelia Brush, 20 July 1863; Henry Searles Almanac, 11 July 1864, Oysterponds Historical Society, Orient, New York; Diary of Benjamin F. Prince, 7-8 July 1879. Commencement of the rye harvest, see Diary of Garret S. Baxter, 10 July 1830, Brooklyn Historical Society; Ruth Velsor to Elizabeth Cott, 10 July 1861, Velsor Family Papers, Long Island Studies Institute, Hempstead, New York; Diary of Samuel Megie Jr., 7 July 1862; Halyoake Farm Diary, 23 May, 17 July 1874, Hallockville Museum Farm, Northville, New York; Diary of Benjamin F. Prince, 9 July 1879. For the start of the oat harvest, see Diary of Elizabeth Mulford Crane, 2 August 1824; Diary of Adriance Van Brunt, 23 July 1828; Diary of Samuel Megie Jr, 31 July 1862; and Diary of Benjamin F. Prince, 28 July 1879; Hurt, American Farm Tools, 40.

32 Bidwell and Falconer, History of Agriculture, 212; Van Wagenen, Golden Age of Homespun, 227 says that the mechanical reaper was not adopted in New York State until the 1870s. This corresponds to primary sources from the Region which only begin to mention reapers in the late 19th century. For example, the Diary of Henrietta Terry Conklin and Guilder S. Conklin, 8 July 1871, Suffolk County Historical Society, Riverhead, New York, and Diary of Isaac Oakley, 24 July 1872.

33 Van Wagenen, Golden Age of Homespun, 79, 228-30; Bidwell and Falconer, History of Agriculture, 125-26, 208-09, 353; Schmidt, Agriculture in New Jersey, 76, 92; Hedrick, History of Agriculture, 296-97, 360; Hurt, American Farm Tools, 40; Diary of Benjamin F. Conklin, 12-13 July 1854.

34 Diary of Alexander J. Cameron, vol.2, 15 July 1862; Diary of Benjamin F. Prince, 9, 10, 28-29 July 1879; Samuel Megie stored 1,069 sheaves of wheat on a platform over the barn floor. Diary of Samuel Megie Jr., 18 July 1862; Diary of Adriance Van Brunt, 15 July 1828; Diary of Benjamin F. Conklin, 13 July 1854. Small quantities of threshing could be finished in the summer. Diary of Elizabeth Mulford Crane, 19 August 1824.

For data on grain production in New York State in 1855 see *Census of the State of New York* (Albany: Charles Van Benthuysen, 1857).


Hedrick, *History of Agriculture*, 398, 401; Gatesm *Farmer’s Age*, 318; Clarence Danhof and Hubert Schmidt do not mention folk remedies at all.


State Board of Agriculture recommended placing “bell glasses” over grapes to keep insects away from the fruit. *Horticulturist* (August 1846): 70.


Schmidt also writes (p.135) that some orchardists destroyed insect nests by touching them with an alcohol soaked sponge. James C. Brandow, ed. and intro., “The Journal of Nathaniel T.W. Carrington: A Barbados Planter’s Visit to Canada and the United States in 1837,” unpublished manuscript, (13 September 1837); Diary of Isaac Webster, 3 May 1854, see also various entries for the month of August 1854, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey; Bridgeman, *Young Gardener’s Assistant*, pt.1, 20, 40, 120, pt.3, 14.


54 Buist, *Family Kitchen Gardener*, 131-32; Account Book and Farm Calendar of Teunis Bergen, 6 May 1830.


56 Hedrick, *History of Agriculture*, 400-01; Halyoake Farm Diary, 3, 6, 17 June 1876, 18 June 1877, 24 May, 15 June, 1878; Schmidt, *New Jersey Agriculture*, 178.
CHAPTER 7. THE AGRICULTURAL YEAR WANES: AUTUMN

Autumn is universally known as the season of the harvest. Yet to say when this season truly begins on the farm and in the garden is difficult because compared to other seasonal changes, summer and autumn activities are initially similar. Agrarian women and men were probably too busy to recognize the gradual drift from summer into autumn, although they surely noticed the refreshingly cool nights that began in late August, heavy with dew and followed in the morning by fog and later, warm sunshine. Although frost threatened higher inland elevations in late September, most nighttime temperatures in the New York City region failed to dip below the freezing mark until October, a function of latitude and proximity to the ocean. For these reasons autumn exhibits, arguably, the most pleasant weather of the year. It is also the longest season, extending from the middle of August to early December. Autumn is a season of transitions, the key features of which are unclear to the observer on September 1, but starkly apparent by the first of December.

Harvest and related activities dominate any description of farm and garden work at this time of year. In autumn agriculturists brought in crops planted outside between April and July, the first ones being mere continuations of summer crops: early potatoes, summer squash, cucumbers and sweet corn. By mid-August beans and tomatoes were ready, followed in September by tremendous quantities of peaches, melons, onions, cabbage, broccoli, cauliflower, apples, turnips, potatoes, field corn and salt hay. In addition to their origin, autumn crops also stand apart from crops by their method of harvest. Whereas some summer crops (hay, grain) lent themselves to machine harvesting, this was less possible for autumn crops. Irregularly shaped plants, producing fruits of varying shapes over a period of weeks
made mechanized harvesting difficult. One exception to this is the potato, brought up from its subterranean home by a "digger," a rather fancy one-horse plow. Persons not in possession of the digger dug potatoes the traditional way, with a pitchfork.

Besides harvest activities, a significant amount of autumn work revolved around preparation of the homestead for winter. Farm women did this by preserving various foodstuffs, a process which followed the harvest step for step. Despite its association with the fall only, food preservation actually cut across seasonal divisions. Preservation began with the ripening of the first early crops in May and extended all the way to November, to be replaced by slaughtering in December. In addition, families rounded up livestock from browning pastures, erected fences, repaired greenhouses and hot bed frames, mulched and covered perennial plants, prepared cache pits and laid up stocks of fuel.

Fruits and vegetables began and ended the autumn harvest season. Of all fruits the apple is most important because of its widespread use and lengthy season. The earliest summer varieties matured in August, and many winter ones continued to do so into October. The apple is also important because it grows well in the region and can be put to many uses. Valuable as a fresh market crop, it can also be converted to other equally marketable forms like cider and vinegar. Apples also served various culinary and medicinal uses in the rural home.¹

Adaptability to different soils and climates meant that apple trees grew, cultivated and wild, on farms across the New York City region. The greatest centers of their culture lay among hilly or broken land, less suitable for traditional grain crops. Northeastern New Jersey and the lower Hudson Valley counties stand out as important centers of production. The
well-known “Newtown Pippin” originated on western Long Island, and Staten Island was at one point an important place for apple production. Urban proximity had a negative effect on orchard culture and apples produced in these places were limited to old orchards planted long before urban growth encroached upon their quiet borders. Commercial gardeners in urban areas raised few orchard products because orchards, unlike vegetables required long-term stable use of the land. Uncertainty surrounding long-term land use made property owners reluctant to plant trees that took years to recoup their initial investment. For example, census statistics from the several towns comprising Essex County New Jersey, once an important center for apple production, show the lowest apple production for the city of Newark. A similar pattern existed for Manhattan in 1855 where orchard production was highest at the greatest distance from the built up portion of the island.\(^2\)

Apples grown in the nineteenth century originated from two sources: the seedling tree and by artificial propagation. Seedling trees are propagated from seeds, either naturally or at times, assisted by good-hearted individuals like Johnny Appleseed. In the seventeenth and eighteenth centuries, and to a lesser degree in the nineteenth, this method explained the origins of American apple orchards. A seedling grew slowly, taking ten to twelve years before it developed into a fruit-bearing tree. The randomness of genetics dictated that the fruit from such a tree might also exhibit few of the characteristics of the original apple from whence it came many years earlier. People referred to these trees as “common” not only because they grew so extensively but, also because they produced small, odd-shaped, sour apples appropriate only for cider or cooking.\(^3\)
In the second quarter of the nineteenth century, more and more farmers began to use artificial propagation to raise fruit. An ancient method known to gardeners in the days of Caesar, artificial propagation involved grafting or budding scions (branches) of known stock, on to young seedling trees. These seedling trees were purchased from nurseries, itinerant salesmen and professional seed growers. The skill of grafting lay within the abilities of rural men and women. Instructional guides even published recipes for making grafting compound of ingredients like horse manure and beeswax. For example, Amelia and David Brush grafted "golden harvest" apples to two trees on their Queens County farm one afternoon in the spring of 1864. Larger scale producers hired the job out to professionals.4

In their attempt to promote fruit culture, mid-century horticulturists began to identify certain varieties of apples (and other fruits) which had desirable characteristics. Journals and treatises published in the 1840s and later are filled with references and "descriptive lists" of improved varieties. Great attempts were made on the part of learned men to identify, standardize and catalog variety names and descriptions. According to one author,

Our object is to lay before our readers a really select catalog of select fruits, that will be eatable the whole year, from which more pleasure will be derived than by cultivating acres containing trees not two alike, at least in name. We say different only in name, for the cultivator will find that some fruits are grown under from three to thirty names, so that after selecting with care one hundred kinds of fruit, there may prove to be not fifty distinct, and one-half of these not worth culture.

Andrew Jackson Downing’s *Fruits and Fruit Trees of America* (1845) represents the most important early attempt to identify and describe varieties and their uses. Downing founded the journal *Horticulturist* the following year to continue this work. The venture proved a tremendous success, providing its readers with much valuable information on how to
recognize, identify and improve plant varieties. These changes first took place in intellectual circles. Even though some farmers added improved varieties, for years farm orchards continued to contain large numbers of seeding trees. One reason for this is that these tough seedling trees lived for scores of years. Trees planted in late eighteenth and early nineteenth centuries not uncommonly survived into the twentieth. In that time, they grew to giant size stretching thirty feet or more into the sky.\(^5\)

Since an apple's characteristics varied from tree to tree in seedling orchards, rural women and men adopted a truly practical categorical system of identification based on the season during which the fruit was best used (such as “winter” or “summer”) or on its most appropriate use. The “cider” apple, for example, was a small, sour apple best crushed and squeezed for its juice. These two systems of nomenclature, one intellectual the other practical coexisted through the second half of the nineteenth century, and their use by farmers provides an indicator of the rate that grafted varieties replaced seedling fruit. This happened slowly before 1850. Most farm diarists writing in the first half of the nineteenth century mention only “apples,” or seasonal designations. For example, in October 1824 Elizabeth Crane noted that her son Daniel was picking “winter apples.” A week later she wrote that her husband and sons had begun making cider. Crane’s “winter apples” were likely from seedling trees. Writing three decades later, Westchester County farmer J.A. Hammond used similar language. On 18 October 1853 he picked nine barrels of apples for “cider making” and two for “home use.” Yet five years later he recorded harvesting “Greenings” and “Pippins” certainly generic designations but also indicative of grafted fruit and of greater recognition on the part of this apple grower of differences in variety, as opposed to utility.
Use of both designations also indicates the existence of improved and seedling fruit in the same orchard. It also represents a trickling down of information from the intellectual elite to working farmers. Hubert Schmidt argues that this occurred in New Jersey around 1860.

In the long run, identification by variety name proved advantageous because it permitted farmers to select varieties based on their needs. For instance, in the 1860s Bergen County farmer Alexander Cameron planted trees with succeeding dates of maturity. His hope was to have a constantly ripening supply of fruit from August through November. In the 1860s and 1870s Isaac Oakley raised Newtown Pippins, Tolman Sweets, Baldwins and Russets on his Putnam County farm, all important market varieties grown extensively in the lower Hudson Valley. For example, one expert on apple culture in New York State later commented that the Tolman Sweet "is more generally grown in the home orchards of this state than any other sweet apple." Increased references to varieties indicates that the old common cider apple, and the system of nomenclature with which it was associated, waned in the second half of the nineteenth century.

Summer apples ripened first, ready in August. They did not keep for long periods of time, and every family farm probably had a few trees. Summer apples were good for eating and cooking, or for drying. Families looked forward to fresh summer apples after a winter of dried fruit that usually ran out in the spring. Eagerly anticipating the first fruit of the season, Long Island farmer Ruth Velsor prepared apple dumplings for dinner on the first day of the apple harvest of the year 1862.

The main apple harvest did not occur until late September and early October, squeezed in among other early autumn activities. The hardiness of these winter varieties meant that
they could be left on the trees even after light frost. Picking involved strictly handwork from
the ground and from ladders (Figure 7.1). Over the years inventors contrived devices for
those who preferred not to climb. New York farm implement dealer A.B. Allen sold a “fruit
gatherer” in the late 1840s for $1.50. There is little evidence that these caught on, although
similarly shaped tools are available today. Family members and regular hired hands picked
the crops, although in some instances local boys who could scramble up and down ladders
may have been hired at a per diem rate. Mr. and Mrs. Daniel Lent of Flushing, New York,
hired pickers just for the apple harvest because they had no children or regular hired help.9

Figure 7.1 Harvesting Apples in New Jersey

Source: Richard Edwards, The Industries of New Jersey pt.4 (New York: Historical
Publishing Company, 1882), 35.

From baskets workers packed the apples into barrels. Ideally, they set aside blemished,
bruised and drops for cider making or processing in the farm home, but complaints from
merchants indicate that before the 1850s this did not happen very often.10

The importance of the apple lay in its versatility. Farmers sold them fresh or pressed for
cider, which could be sold or used at home. Farm women processed them into dumplings,
pies, tarts, “apple cheese,” “slump” and “crowdy.” They cooked down drops and damaged
fruit to make apple butter and applesauce. Then they poured these steaming standbys of
country meals into stoneware containers, and stored them deep within the cool darkness of
the farmhouse cellar. The also peeled and threaded apple slices on strings, hanging them near
the fireplace or dangling them over a cook stove to dry.¹¹

Producers also pressed apples into juice for hard cider, the “national drink” of
nineteenth century rural America. Cider making is a multi-step process involving crushing
and squeezing batches of apples, then collecting the juice in tight barrels, and leaving it to
ferment. In the fall, this was a ubiquitous rural activity. According to one source “the cider-
presses were usually placed along the farm lanes, near the orchards, and every farmer made
from one to ten or more barrels.” Many families also carried apples to local mills to be
pressed. Many of these “mills” undoubtedly served as “stills” operated by
enterprising farmers. For example, a survey taken in the early 1830s reported 388 distilleries
statewide in New Jersey, and 132 in eight northern counties in 1840. Similarly, surveys taken
in nine downstate New York counties located forty-seven stills in 1835 and sixty-six in 1840.
It is likely these figures are low, because many still operators probably worked seasonally and
were inadvertently left out of official tallies.¹²

Families not aboard the temperance wagon could make substantial sums of money
selling apples to distillers. For example, during the Civil War New Jersey farmer Jessie
Cameron received $21.90 for seventy-two bushels of apples sold to a local cider mill.
Another New Jersey farmer sent fifteen “loads” totaling 142 bushels to “the still” at a time
when New York prices averaged 88½ cents per bushel.¹³
Early cider presses consisted of a heavy wheel guided along a circular trough, powered by a sweep. Operators dumped baskets of apples in the trough to be crushed by the wheel. Later, they collected the mash and extracted the juice with a large hand cranked screw press. Cider was a valuable commodity and much of it ended up on the market. For example, the Inspector at Perth Amboy, New Jersey estimated that five to ten thousand barrels passed through his port annually in the late 1850s. Statistics from New York State Census of 1855 provide a similar picture.¹⁴

Families also had access to smaller hand-powered crushers and presses. Designed for home use these sold in farm implement stores (Figure 7.2) for as little as a dollar, but skilled farmers probably made their own. On cool fall days when the demands of other responsibilities had lessened, the men of the household gathered to participate in the annual

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Figure 7.2 Apple Crusher and Screw Cider Press for use at Home

rural tradition of cider making. Writing to her son in Ohio, Ann Cock mentioned that the men were making cider and had “plenty of apples and green corn.” Similarly, Elizabeth Crane also noted in her diary one day in late October that “father and the boys” had been out making cider. Nowhere in the region do women seem to have any direct involvement in this activity, which seems to have been one of several strictly male agrarian activities.15

Temperance did not have the negative effect on the culture of the apple to the degree once believed. Although one source claims that farmers in Bergen County continued to sell to distilleries, there is a noticeable absence of cider sales in personal papers in the 1830s and 1840s. Yet the reformers targeted the distillation industry rather than farmers. Census records from 1849 and 1859 indicate that the number of farms reporting apple production and per farm production generally increased in those places to which it was well suited. Demand remained healthy, and extension of affordable steam transportation technology to the countryside in the 1840s opened new markets. Pro-temperance farmers also sought out other outlets for the crop such as feeding them to cattle or making vinegar. New York City merchant Joseph Strong wrote to his brother back on the farm “your letter of the 16th Inst by the Packet has been received - with 5 Barrels of cider which I have credited you at 2 Dollars per Barrel and have placed it in an open Yard where the Sun shines almost all the day and I think it will soon turn into vinegar.” Putnam County farmer Isaac Oakley, a “strong temperance man,” and commercial grower converted his apples into vinegar. On 30 September 1871 Oakley carried 170 gallons of vinegar to William Russell in Peekskill.16
Far from being detrimental, the apple industry benefited from the national movement for temperate use of alcohol. Although some farmers may have cut down their orchards in support of the Washingtonians, it is likely they were marginal producers ridding themselves of those old sour seedling “cider” apple trees. Writing about New England, Howard S. Russell argues temperance encouraged farmers to remove many of their most unproductive trees. Recall that the disappearance of the old nomenclature corresponds to the later stages of this social reform movement. Those remaining in the business began to concentrate in certain improved varieties such as Baldwins, Greenings and Russets and used grafted stock. Temperance benefited not only the growers, but also nursery owners, and professional fruit grafters, although the genetic variation of the old trees was lost.17

On many farms apple picking competed for a time with a crop of equivalent importance, the potato. Paul Gates writes “there is nothing lowly about the role the potato has played in history.” and he is correct. In the New York City region, nearly every farm family and many horticulturists raised potatoes, either for sale or for use in the home. The late season potato harvest began toward the end of August and extended through early October. As is generally true of potatoes, yields varied widely, especially when the blight exerted its greatest force from the mid-1840s through the middle 1850s. For example, median production in nine Monmouth County townships ranged from 108 to 149 bushels per farm between 1849 and 1859, while in seven New York State townships it ranged from eighty-eight to one-hundred thirty-five bushels per farm. In other places, soil location and absence of disease encouraged higher yields, such as portions of Monmouth and Kings Counties where growers raised 1,000 bushels or more. In Kings County especially agriculturists devoted over 75 percent of their
improved land to potato culture, and in Flatbush township median per farm production statistics averaged well over 1,000 bushels for both census years 1849 and 1859.\textsuperscript{18}

As with vegetable harvesting in general, digging potatoes involved the labor of family members and hired hands. They brought in the crop by hand in one of two ways. On smaller plots of land, or in commercial gardens lacking draft animals, workers dug into the hills with shovels, forks and claw-shaped "potato hooks." Larger scale producers opened the hills quickly using a single horse plow or a similar device, shown in Figure 7.3, called a "potato digger." Whether following plow or spade, workers in the potato fields engaged in stoop labor picking the crop from the soil. Besides this, the level of difficulty increased in stony and weed-strewn fields. Diggers worked with a certain amount of haste. Potatoes began to change color after exposure in direct sunlight for more than a day or two. Growers could also dig only in dry weather. Some growers approached the harvest with a goal of bringing in the entire crop as quickly as possible. For example, on the Selah Wicks farm the harvest of 1855 began on September 8. By the twelfth of the month Wicks noted that "all hands" were engaged and "the boys tird." On they went until the twenty-first, when the crew was "all
glad" to have finished digging. Similarly, on the Alexander Cameron farm, hired hands Thomas and John, plus John's wife Catherine brought a crop of Peach Blow potatoes over ten days in mid-October, 1864.19

A second approach aimed at bringing in the harvest as time permitted. For example, Benjamin Conklin's family dug 550 bushels, but over fifty-two days, from 28 August to 18 October 1855. The Conklins interspersed digging with other seasonal farm tasks, plus delays from wet weather and for Sabbath days reduced time in the potato field to only 19 full and 9 partial days. Neither Benjamin Conklin nor Selah Wicks mentioned why they harvested in the manners chosen. Since the Conklins marketed their crop in October, and Wicks in the winter, market forces seem not to be a significant factor. It is more likely that labor and personal factors influenced their decisions.20

On the other hand, the influence of market forces was important to commercial gardeners who grew potatoes for sale in the public markets. One reason for this is that the "season" began in mid-summer and extended late into the autumn. For example, Kings County gardener John C. Bergen sold nearly 1,400 bushels of potatoes at the public market between 29 June and 10 November 1865. This was done through individual market trips, made every day or two, and averaging around thirty bushels each. Like the apple growers, few potato producers sorted their crop before selling it, but by the 1860s wholesalers required that they do so. Farmers selling their crop in batches piled it in a cool, dark and dry place, like a barn, until the conclusion of the harvest. Then, before freezing temperatures set in, they sorted, and either sold or stored the crop.21
Through the use of cellars and cache pits, agriculturists used the environment to help store potatoes and other vegetables through the winter. This is significant because storage and price challenges brought this issue to the level of national debate in the last quarter of the nineteenth century. Cellar storage, whether beneath a farmhouse or under the barn provided an excellent environment for storage of potatoes and other crops like onions, turnips and cabbages. The main advantage of the "root cellar" is that the crop was accessible during the winter. For example, in September, 1849 Monmouth County farmer Robert Drummond packed 244 bushels of potatoes in barrels and stowed them away in his cellar. Over the course of the following winter and spring he sold them to local boatmen who disposed of them in New York City. For Drummond, the need for access exceeded space limitations.22

The accessibility of a cellar also permitted farmers to periodically sort out rotten potatoes that if left unchecked, would surely damage the others. Next to rot, growers took care to protect against dampness, rodents and sub-freezing temperatures. Storage in raised bins and by using traps or a cat helped against the first two problems, but more care was necessary to protect against cold weather. "Fear of frost cold cold cold" wrote a nervous Selah Wicks during a bout of severe weather in January 1856. Wicks stood vigilant for several days before a stove in his cellar in order to keep his potatoes from freezing. Besides these drawbacks, the typical farmhouse cellar contained limited space, and items relating to the operation of the household usually took precedent. For this reason barn builders began adding root cellars in the 1860s.23

Outdoor subterranean storage remained the most common method used by farmers and gardeners to keep potatoes and other root crops over winter. These pits or hillside "caves"
provided a cool, dark and dry environment suitable for storage. A correspondent to the New York State Agricultural Society described the justification behind burying root crops underground:

As decomposition in vegetables is induced by the free access of atmospheric influence it is obvious to everyone that its exclusion is necessary, to as great a degree as possible, when the object is to preserve the vegetables for winter consumption. At five feet below the surface of the earth I do not believe the temperature varies, either summer or winter, and there it never freezes, except under very peculiar circumstances. Onions, turnips, carrots, potatoes and salsify, may be preserved for one or more years, by being buried in sand-pits, below the effects of frost, or where the temperature is equable. It is proper to take up many varieties of vegetables before the hard frosts of winter set in.\(^\text{24}\)

Properly constructed and sometimes lined with straw or sand, the pits offered a dry, rodent free space, safe from frost. Yet storage in this manner required a certain amount of thinking ahead. Once the ground froze the pits remained inaccessibly locked beneath a layer of frost. Sometimes during brief winter thaws farmers opened pits to “ventilate the pile” and sort through heaps of potatoes for rotten ones. But upon resumption of cold weather these were quickly closed and not reopened until spring.\(^\text{25}\)

Scholars have already documented the historical significance of the potato. It provided an important source of supplemental income to farmers, and primary source of income for gardeners. Labor requirements to bring in the crop remained mainly handwork. A single person with a fork and basket dug about thirty bushels per day, but larger scale producers used plows as “diggers” to expose more ground. Mechanical diggers were not introduced until the 1870s, and for many years thereafter were cost effective only for the largest scale producers. Agriculturists utilized two types of subterranean storage, in cellars and pits. Both provided the cool, dark and dry environment necessary for keeping potatoes successfully for a
long time. But each method had disadvantages, which farm families must have weighed carefully. The potato harvest occupied much of September and part of October for farmers, although gardeners continued to dig into November.

For farm families living within fifteen or twenty miles of the coast or near a tidal stream, salt hay shared their attentions with the potato harvest. In a tradition that dated to the beginnings of European settlement, farmers cut salt hay in the fall to supplement upland grass cut during the summer. Both sources of hay provided fodder to overwinter livestock that otherwise could not survive the long winter.²⁶

Through the 1820s town councils imposed varying degrees of regulation on this event. Following a pattern inherited from New England, town charters claimed ownership out to the mean low tide. These areas included thousands of acres of grass, which grew in this marine environment. Town governments held the meadows in common and permitted only residents to pasture cattle, harvest shellfish and, in the autumn, cut the grass. In true colonial fashion, these processes were highly regulated. On Long Island, town councils generally set the second Tuesday of September as the earliest date that salt grass growing on common wetlands could be cut. This resulted every year in, the assemblage of a “swarming population of hay gatherers” outside the meadows on the evening preceding the first Monday of September in preparation for the “marshing season” to begin. At dawn the huge rural army advanced into the sea of tall grass, men and horses loaded down with sharp scythes, wooden rakes and packs of provisions. The effort required cooperation of a team. Part of the group immediately staked a claim, demarcating its borders with carefully placed tools. Meanwhile, others sought high ground to make camp.²⁷
Those traveling more than a few miles camped out overnight on the marsh. On 10 October 1855, Suffolk County farmer Selah Wicks “went to the islands [in the Great South Bay] for hay and staid all night.” Camping contributes to the considerable romance which surrounds the history of this autumn activity. Men cooked ham and beans over open fires with pie for dessert, all prepared by wives and daughters who remained back on the farm. Generations of uncles, fathers and sons caught crabs and fish together, and also dug clams and hunted birds. Looking back seventy years to his boyhood, Daniel Treadwell vividly recalled nine days in September of 1842 “during which period we slept on the marsh, ate eel and clam chowder and smothered flounder.” One can easily imagine nightfall, the air heavy with wood smoke intermingled with salt air, the sounds of insects and the lapping tide, and of men’s voices echoing eerily through the foggy darkness.28

Regulation of this event by local government began to disappear before 1830. Many township governments, under pressure from land developers and farmers began to sell their common lands. They also began to lease use rights to individuals. The town of Jamaica for example began to sell off parcels in the 1820s and began leasing use rights in 1827. Under the new arrangement town councils authorized agents to “dispose” of meadow grass on public lands through annual or multi-year leases. For example, Huntington farmer John H. Wicks paid $4.37 for “grass on the Islands” in September, 1853. And on 1 May 1860 Walter Hawkins of the village of Fireplace leased grass on Pelican Island for $2.00 per year.29

The sale of wetlands also changed the nature of the harvest. In some places, such as immediately outside built-up areas, the annual tradition vanished as politicians and real estate developers purchased, drained an covered over what they viewed as wasteland. For example,
the City of New York drained the Lipsenard Meadows during the first quarter of the
nineteenth century. This tract of land, once a tidal marsh teeming with waterfowl stymied
growth in a direction northwest of City Hall. Certainly polluted by the teeming population
pressed against its southern border, it also contributed to the spread of disease. Today the
main channel, which once traversed nearly the width of the Island, flows through a channel
beneath Canal Street. Construction of housing developments in neighboring Queens County
in the 1830s served a similar purpose. The construction created thousands of yards of fill,
and clever entrepreneurs ferried the soil across the East River to Manhattan to create
waterfront building lots out of tidal marsh.30

Farmers also bought up large portions of wetland lots singly and in shares. For
example, Nathaniel Carrington noted in 1837 that in the town of Flushing every farmer
owned between four and ten acres of salt meadow. Once held in common, they became
privately held pieces of real estate, ranking in importance with woodland and city lots. Like
these other important commodities, farmers directed disposal through their wills. For
example, in 1852 Newark farmer Henry Parkhurst bequeathed to his son Henry N. “my four
pieces of Salt Meadow known by the following names: the Major Breen Meadow, the Dead
Creek Meadow, the Neds Ditch Meadow, & the Oyster Creek Meadow.”31

The naming of these wetlands, while quaintly old-fashioned indicates more than just
location. Local environmental conditions influenced the type of grass that grew there, each
with important differences. Historians have identified three basic types: salt grass, sedge and
black grass. Salt grass, most plentiful and least valuable grew above the level of high tide.
Sedge, less available and more valuable grew along the muddy flats that lay partly submerged
by the high tide. Black grass grew on high meadows was most valuable for feeding purposes and in shortest supply. Henry Parkhurst’s lots on Dead and Oyster creeks, probably grew different grass from that found on Sayres Coe’s six acre meadow near “Wheeler’s Point,” or Moses Roberts’ five acres of “salt meadow near the bay” or Henry I. Westervelt’s four acre “lot of brackish meadow lying in the Hackensack Meadows.” This is one reason farm families owned wetlands in different locations.32

Farmers cut meadow grass with scythes, a job made dangerous by fog and tiresome by snails, whose hard shells blunted the force of the blade. Although one source claims that farmers cut sedge from a boat, it seems more likely that they waited for the tide to ebb and then cut on foot. Following behind, a crew quickly raked the fallen grass into piles on higher ground or forked it into a scow left aground by the retreating tide. Measuring thirty-three feet in length, twelve in width and three deep, and carrying a stack of hay perhaps ten feet high, some farmers poled these shallow-draft boats off the marsh on the flood tide. Others towed them from high ground with the help of a sturdy horse. Off the meadow they spread the wet grass on the ground to dry or forked it in portable cocks, and sometimes later ferried it home in a wagon. After all this work farmers piled salt hay outdoors in a traditional stack. Limited space and feeding value rank among the top reasons for persistence of this tradition.33

Lesser quality varieties of salt hay had other uses besides feed. Some families used it to thatch barn and barrack roofs. Others bedded their livestock with sedge grass, and women some used it in the home to fill mattresses. Yet its main use continued to be for feeding purposes.34
Salt hay is an important crop for three reasons. First, through its use many farmers remained free of full dependence on upland hay sources because they exploited wetlands that required no maintenance. Second, when federal census marshals queried farm families about the amount of hay harvested in a single year, it is unlikely that they included salt hay in that definition. This suggests that hay production statistics for coastal communities are underestimated. Finally the fact that farmers cut salt hay probably slowed adoption of mechanized mowing equipment because the less English grass cut, the less of a need for mechanical mowing machines. Furthermore, these heavy iron devices would have been impossible to carry to offshore islands or to drive on the uneven, wet ground that characterized a salt meadow.

In 1866 New Jersey state geologist and advocate of “improved” agriculture George Hammell Cook wrote that farmers “years ago” ceased relying on salt hay. Numerous sources indicate that contrary to Cook’s observations, farmers continued to harvest salt grass into the 1880s and later. Non-agricultural uses for salt hay such as ice house insulation and as packing material helped perpetuate importance into of the crop into the twentieth century. It is no coincidence that William H. Earl, a Newark farmer and owner of an ice business also possessed three acres of salt meadow. Some men also worked cutting grass for others. Staten Island farmer Alfred Cutting earned three dollars per day doing this for his neighbor. Some farmers may also have been hired to cut for commercial enterprises.

The harvest also achieved a cultural significance that helped perpetuate this tradition. Writing in 1912, Daniel Treadwell said that men and boys sensed the “lure of the salt
water . . . and the tang of the sea air” and that the harvest provided “relief to the monotony of their lives.” While nineteenth century farm life does not appear to be as monotonous as later critics (like Treadwell) claimed, it does not seem too far fetched that men and boys looked forward to a day or two out on the marsh, just as they also enjoyed making cider in October and working in the woods in December. If Treadwell is to be taken at face value, some men also viewed marshing as a time to get in a little hunting and fishing or relaxation at the beach away from their wives and daughters. By the 1840s, the era of Treadwell’s boyhood, this surely represented a minority, because increased use of lease and sale arrangements permitted farmers to cut on their own schedules. In this way, “marshing” trips became integrated within the multitude of other autumnal tasks facing busy rural families.37

After bringing in apples, potatoes and salt hay, farm families began to harvest field corn. Reaching maturity 120 days after planting the harvest began in late September, extended through October and (sometimes) into November. One reason the corn harvest proceeded so slowly is that it involved several steps, all of which were performed without the assistance of machinery. In the New York City region, subsequent use of the land acted as the most important factor in determining the rate at which the harvest progressed. Where winter wheat, rye or grass followed corn, farmers removed it rapidly in order to sow the next crop before the first hard frost. Queens County farmer Daniel Lent aimed at having his corn off the ground, and land plowed and sown by October 1. The fastest way to clear a field of corn is reminiscent of the pioneer experience of clearing forests. They simply “clear-cut” the field of its stalks, and removed each one, ears intact, from the field.38
Wielding knives sharpened to a razor's edge (Figure 7.4), men strode down rows of towering eight to ten foot tall cornstalks severing stalk from root at ground level and laying it down like miniature forests being cleared by agrarian lumberjacks. Binders followed in pursuit bunching the fallen stalks together and tying them into tight shocks. Shocking is useful because it is an easy way to move thousands of stalks off a field in relatively few trips. Properly made, they also served as an excellent method for short-term storage. Bound together the stalks repelled water and snow, but allowed air to circulate and prevent mold. Workers hauled the bundles to the perimeter of the field, and leaned them against the perimeter fence. In this way they cleared the field for plowing and protected their corn for the immediate future. After plowing and harrowing they sowed winter grain in the fashion described earlier for springtime. The main difference is that it occurred at a faster rate in the fall. For example, Noah Youngs commenced cutting and shocking corn on Saturday, 28 September 1850. Two days later, in Young's own words "we plowed and cut corn and stacked it along side the turnips." The following day (October 1) "we set up [shocked] corn and plowed in the forenoon" and on Wednesday "we finished sowing wheat in the forenoon." Youngs returned to the corn on Thursday the third. New Jersey farmer Alexander Cameron followed a similar pattern. On 29 September 1862 he finished cutting, shocking and moving the bundles to the edge of lot nine. Later that afternoon he and ploughed the ground in preparation for sowing wheat. Where farmers did not intend to plant winter grain, or to fall plow, the shocks remained scattered about the field until the family began husking. Improperly supported shocks sometimes blew over in strong winds. An exasperated Garret
Baxter noted in 1827 that a November gale scattered the "stalk and grain stacks" on his Kings County farm necessitated the tedious job of re-righting them.\textsuperscript{39}

Where cutting and shocking corn were performed in haste, husking represents a less time-sensitive aspect of the harvest. In fact, it took place three or four weeks after the harvest, in October and early November. Husking usually occurred outdoors in the field, which meant that the shocks had to be moved only once. However, if early snow or other factors made this work impossible outdoors, the shocks were carried to a barn and the husking performed indoors. Ann Cock noted on 8 December 1839, that even though "our folks" didn't have all their corn husked and cribbed, they had not cause to worry since it was under shelter of the "ferry house." Corn husking resembles potato digging in that it was tough, tedious, time consuming work requiring "all hands" to perform. Although husking rates surely varied with strength and age, an adult could manage between thirty and sixty bushels daily. For example, Jessie and Hannah Cameron, along with hired hands Robert and Thomas husked ninety bushels one day in late October 1863. Husking resembled potato
digging in another fashion. It ranks among one of the least pleasurable harvest activities, probably because it is hard on the hands, stationary work, and it involved handling thousands of cold, wet ears. Like mowing and reaping, regular hired hands performed much of this work but sometimes a farm proprietor hired out the job. For example, Alexander Cameron hired "Curtis" and his children at three cents per bushel to husk corn in late October 1864. For these reasons it is understandable why families might pool their labor, and considerable lore exists regarding husking bees. These were rare in the New York City region in the nineteenth century perhaps because of widespread disapproval of the behavior associated with them, because wages remained low enough to hire the work out, and because children could perform this task.\textsuperscript{40}

A good husker not only stripped the ears neatly, but also sorted them by appearance, keeping careful lookout for ears special enough to provide next year's seed. Once husked the ear corn was carried by the bushel to bins or cribs. By December this task had been completed, one of several signatory events that autumn was coming to a close.\textsuperscript{41}

Farmers still faced the task of disposing of heaps of corn stalks, now stripped of their ears. These end up "piled upon the cow shed" and fed to cattle through the winter. In the nineteenth century many farmers cut the stalks into small pieces using a tool appropriately called a "stalk cutter" (Figure 7.5) which cost new from $3.75 and up. Westchester County dairy farmer J.A. Hammond fed out four or five of these bundles nightly to his cattle. Farm women gathered cornhusks to use as mattress filler.\textsuperscript{42}

Like the other autumn harvest activities performed each autumn, bringing in corn involved mostly manual labor. Mechanized harvesters, called "pickers" and "huskers" would
not be developed until the 1880s, and even then design and power supply problems limited widespread adoption of these implements in the East until the 1920s. This absence of harvest machinery presented a problem only where insufficient labor existed to husk, because a relatively small number of people could manage cutting, binding and shocking. The entire family was never pressed into service for this aspect of the job, like they were for husking, or for potato digging. Where winter grain followed corn, this process permitted farmers to clear their fields quickly. Families would have preferred to own mechanical corn husking devices, had they existed. Since this job was not time sensitive, they could put off the unpleasant task until later. By the time cold, wet weather began to set in around mid-November the fields lay bare, except for root crops, cabbage, cauliflower, celery and broccoli which could stand moderate frost, autumn outdoor field work was winding down.\[^{43}\]

These late fall crops held an important place in the nineteenth century because turnips, rutabagas, carrots, beets, “mangel wurtzels” and even cabbages provided a supplemental source of winter livestock feed. Commercial gardeners, on the other hand, continued to

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Figure 7.5 Smith's Patent Lever Cutter

harvest cabbages, celery, cauliflower and broccoli and potatoes for city markets. These plants shared two common characteristics. They were bulky, relatively low value and to harvest them required hand labor. Agriculturists pulled the root crops and collected them in piles and carted them home.44

Garden crops growing above ground were susceptible to frost, but gardeners continued to harvest above ground crops until they reached a point of being unsalable. For example, Kings County farmer Teunis Bergen sold broccoli and cauliflower that had been frozen multiple times. That he could do this provides some indication of the state of farm produce in the public markets, and the consumers’ tolerance for low-quality. For example, Bergen observed on 22 November 1839 “Cold, ground and cauliflowers froze hard.” But rather than stop for the season, he “Cut off the most forward ones and of the Brocoli [and] hauled in two loads of cauliflowers.” The region experienced similar weather the following day, yet he harvested another “load” of cauliflower. Three days later, on 26 November, he recorded that the thermometer had dipped to seventeen degrees, but undeterred he brought in another load. At this point the cauliflower had been frozen at least three times. Although the severe cold on the morning of the twenty-sixth ended the cauliflower harvest, Bergen continued to cut broccoli for another two weeks.45

Turnips, beets, carrots, rutabagas, “mangle wurtzels” and potatoes better resisted the effects of cold November night air because underground temperatures remained above freezing for up to a week after the onset of severe cold. For this reason agriculturists could hold off on bringing the last of these crops until all other harvest work was complete, so long as they did not wait so long that the crops froze in the ground. Excepting the potatoes, these
crops were grown generally for animal consumption, so a certain amount of spoilage was acceptable. Yet given what we now know about the quality of “above ground” late season vegetables, it seems that the difference between human and animals foods was rather narrow.

Since demand and correspondingly prices for these late season crops remained low at this time of the year, agriculturists attempted to store as much as possible until spring. As explained earlier, for the New York City region this meant not only utilizing subterranean storage in cellars and pits, but also trenches, haystacks and ice houses, anywhere it seems, they had a little extra space. Agriculturists with abundant cellar space piled bushels of root crops and scores of cabbages alongside the bins and barrels of potatoes and onions stored there back in September. Cellar storage was preferable because it permitted farmers to feed out these crops over the winter. For example, in early December, 1862 Samuel Megie packed away fifty heads of cabbage in a cellar under his house already brimming with items related to the household. He found space for another fifty heads in the cellar of his tenant house, and put the rest, numbering 400 heads, in a store room beneath the barn. Similarly, one Long Island farmer built a giant “root cellar” into which he packed 400 bushels of turnips in the autumn of 1874. Families became creative with the use of space as the weather turned sharply colder, chancing that some loss in a makeshift storeroom beat total loss that would occur when the ground froze. For example, Alexander Cameron’s family stored beets and carrots in the ice house. Others hid them away deep inside haystacks.46

Families lacking storage space resorted to burying late season crops in pits, as they had done earlier with potatoes. William Richards buried 150 bushels of turnips, twenty bushels of carrots, twenty of beets, and 100 barrels of parsnips, together valued at $217.50 “in the
field" of his Newark garden in the autumn of 1864. Lacking above ground storage space, agriculturists also buried cabbages and celery in shallow trenches. Storage in this manner preserved celery far longer than if left out in the open, but it took some care and required that growers carefully construct sand lined trenches. For example, Alexander Cameron built celery troughs into the floor of his cellar in the autumn of 1863, which provided access to the plants after cold weather set in. Cabbages required less work, whether for human or animal consumption. According to a correspondent to the American Institute, “many gardeners pull [cabbages] carefully, and place the tops down and the roots up in the drill [row] where they were grown. Others bury the roots, standing the cabbages close together, as deep as the first set of leaves, and cover them with straw or any other substance.” Farmers and gardeners buried cabbages rather than lose them to frost. Suffolk County farmer Selah Wicks was in such a predicament in December, 1855. His cellars nearly full with potatoes and turnips, Wicks crammed 500 cabbage heads inside, but this represented less than half the crop. On 3 December, he “ploughed in about 700 cabbages” where they remained beneath the frozen topsoil until April. At that point Wicks removed the cabbages from the ground, brushed off the dirt and sold them for fodder.47

The process of harvesting any of these root crops, excluding potatoes, was purely hand labor. Men “pulled” celery, turnips, beets, carrots and cabbages, and used a sharp knife to cut cauliflower, broccoli. According to William Cobbett, two men with a team of oxen could harvest two acres of turnips in a day. Yet this was tough stoop labor, made miserable by cold, rain and mud which characterized the weather at this time of year. The harvest required persistence because at any time the weather could turn permanently cold, entailing large
losses. For instance although he had already harvested nearly 1,800 bushels, three days before Thanksgiving 1871 the weather turned bitter cold and froze in over 600 bushels of turnips belonging to Suffolk County farmer Lucis Hallock. This entailed a loss of $115.48

A century and a half ago, the sound of ear corn pouring from bushel to the bin, and the sight of men with mud-encrusted boots tamping the last shovelful of dirt over the top of a cache pit served as indicators that fall was almost over in the garden and on the farm. Changes in the weather, particularly the arrival of frost, also provided a benchmark. More than any calendar date, agriculturists used the occurrence of light, “white,” and more severe “black” frost to gauge when they ought to get ready for winter. Agriculturists spent a considerable amount of time, more so in the latter portion of autumn than earlier, engaged in activities preparatory for winter. Table 7.1 shows the average dates of the first mild (“white”) and hard (“black”) frosts for selected areas of the New York City Region. Although many agriculturists surely prepared for winter before the first frost, all certainly engaged in such activity during the two weeks that followed.49

<table>
<thead>
<tr>
<th>County</th>
<th>Hard Frost 28°F or lower</th>
<th>Mild Frost 32°F or lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queens</td>
<td>25 November</td>
<td>12 November</td>
</tr>
<tr>
<td>Suffolk</td>
<td>16 November</td>
<td>9 November</td>
</tr>
<tr>
<td>Orange</td>
<td>7 November</td>
<td>24 October</td>
</tr>
<tr>
<td>Middlesex</td>
<td>4 November</td>
<td>24 October</td>
</tr>
<tr>
<td>Rockland/Bergen</td>
<td>22 October</td>
<td>13 October</td>
</tr>
<tr>
<td>Somerset</td>
<td>28 October</td>
<td>7 October</td>
</tr>
<tr>
<td>Morris</td>
<td>23 October</td>
<td>8 October</td>
</tr>
<tr>
<td>Passaic</td>
<td>9 October</td>
<td>25 September</td>
</tr>
</tbody>
</table>

^ Measured at Suffern, New York.

Source: USDA County Soil Surveys (1975-95).
Agriculturists responded to the threat of cold weather in different ways, depending on their level of specialization. Florists and nurserymen prepared greenhouses for winter by painting interiors, replacing broken panes, setting up stoves and checking flues for cracks. Cautious proprietors also laid up a supply of coal. For example, on 1 October 1833, Manhattan nurseryman Michael Floy repaired the floors in both greenhouses in preparation for moving tender plants indoors. Meanwhile gardeners reassembled cold frames, discarded since May, brought out sashes out from storage and checked them for damage and repaired glazing (Figure 7.6). They banked the frames with manure and straw and set the sashes in place, ready to go at the first hint of cold weather, which, according to Table 7.1, occurred in October. They prepared new hot bed pits and covered the holes with boards or frames to prevent collection of snow and water.50

Figure 7.6 Glazing Hot Bed Sash Panes

Source: Henderson, Gardening for Profit, 75.

In the present day, and in 1850, the advent of cold weather in the northern United States marks an end to the growing season. Yet through the middle twentieth century, New York's horticulturists proved an exception to this rule. Through the use of the greenhouse and the cold frame, nurserymen and wealthy gardeners maintained a growing season year round.
They did this by taking steps in autumn to prepare for cold weather and the necessity of an artificial growing season. Today such efforts are only seen infrequently, but after 1830 greenhouses were common sights in and around nineteenth century New York City. Heated by coal-fired stoves they maintained an environment favorable for the growth of desert cactus or imported, tropical flowers and plants, both of which wealthy merchants selected to brighten their homes at the coldest, darkest time of the year. Without New York’s strong commercial growth this aspect of agriculture could not have existed. For example, Grant Thorburn made part of his living by providing potted plants for parties thrown by New York’s upper crust at the dead of winter.

The preparatory events of autumn made such winter business possible. In September nursery owners brought their most sensitive and exotic plants in for protection against the cool night air. Less sensitive plants could wait a bit longer. In the Floy greenhouses, for example, considerable space was devoted to winter culture of the Dahlia, “the most popular ornamental plant of this present day” (1852). Grown outside during the summer, florists waited until the first hard frost killed the upper part of this plant before bringing it indoors. By waiting they also allowed the cold to destroy pernicious insects that would thrive in the warmth of the greenhouse. Every autumn like clockwork in the middle 1830s, on the morning after the first black frost, young Michael Floy began loading Dahlias in his wagon and carting them six miles from the Harlem nursery grounds to the family greenhouses in lower Manhattan. Carried inside, repotted and watered, the roots showed new growth, resulting in beautiful, salable flowers in February. For the Floys, and other New York area nurseries, this is how, and when they made their money.
Meanwhile, gardeners used cold frames to extend the growing season through winter. Unlike nursery owners, who sought color and luxuriant growth to attract the eye of the consumer, gardeners held more modest goals. They sought only to keep young vegetable plants alive through the winter. The “cold frame” protected them from freezing, but with no internal heat source held the plants at a near-dormant state. Then, at the first warm spring weather they would resume growth, weeks ahead of competitors who sowed in the spring. If such efforts seem unbelievable today, apparently some persons even questioned the practice in the 1880s. According to Peter Henderson:

Some may think that the raising of plants in this manner must involve considerable trouble, but when they are informed that the Cabbage and Lettuce plants so raised and planted out in March or April, not infrequently bring $600 per acre before the middle of July, giving us time to follow up with Celery or a second crop, it will be seen that the practice is not unprofitable.\textsuperscript{52}

Such efforts were necessary before the development of short-season hybrids, and gardeners who could afford the expensive window sashes sowed hardy plants like cabbage, cauliflower and lettuce in the September. Then in October, before the icy fingers of the black frost cut the young plants down, the best and strongest were selected for transplanting into the frames. During the subsequent months, gardeners maintained careful vigilance, opening and closing the sashes, covering them with straw mats in severe cold, in order to keep thousands of tiny plants alive. Peter Henderson claimed in the 1880s “most of the Jersey market gardeners still use the cold frames for growing the bulk of their early Cabbage crop.”\textsuperscript{53}

Nor was this practice limited only to the immediate vicinity of New York City. Lucius Hallock whose eastern Long Island vegetable farm was 100 miles distant from New York, sowed Early Jersey Wakefield cabbages (Figure 7.7) “to carry through the winter” on 20
September 1876. Then on 4 November and again on the eighteenth, well within the period between the white and black frosts, he moved the best plants into frames. That year the killing frost arrived late, not until the thirtieth, and by that date Hallock’s cabbages were safe and sound. In December he covered them with manure, and after caring for them over the winter, set them out in April.54

![Figure 7.7 Early Jersey Wakefield Cabbage](image)

*Source: Henderson, *Gardening for Profit*, 162.*

The arrival of black frost also served as an indicator for when to prune roses to cut shoots from trees to sell as grafts, to transplant trees and to plant bulbs. In fact, the list of things to do on the nursery increased for a time after this date. Farmers and gardeners meanwhile waited for the frost to mulch asparagus, rhubarb, and strawberries.55

Cool fall weather and changing rainfall patterns also caused summer pasture grass to go dormant, prompting livestock owners to remove their animals from pasture. For instance, Noah Youngs went to “Canoe Place” on 25 October 1850, to retrieve cattle that had been pastured there since the spring, and New Jersey farmers in the vicinity of Imlaystown brought
in pigs pastured outdoors for the summer. Farmers who boarded livestock over the summer contacted city butchers to collect their animals. For many farm families, autumn was a time for culling herds and flocks. Unlike today, when winter feeding of hay and grain is often a step in finishing an animal, in the nineteenth century winter feeding of hay, cornstalks, roots and corn aimed at the modest goal of keeping them alive. Until very late in the nineteenth century, for example, the typical dairy cow dried up in October and did not begin to produce milk again until it had access to spring grass. Rather than keep an animal that produced nothing over the winter, farmers sold them off and purchased new ones from drovers in the springtime.  

Farmers culled by sale and slaughter. Slaughtering, a winter task, took place only during the extreme cold of December, but livestock sales took place in September and October. Nor were cattle owners the only ones disposing of their stock in autumn. Shepherds also culled their herds in the fall. For example, James H. Weeks, a Suffolk County farmer sold his herd of 105 sheep in early October 1844. In central Queens County, autumn was the time designated for the annual “sheep parting.” From the colonial period through the collapse of the wool market in the mid-1840s farmers grazed thousands of sheep annually on common lands known as the Hempstead Plain. Each October farmers spent several days rounding up the sheep and separating, or “parting” the herd. The animals were identified by ear notches, unique to each owner the designs for which were kept on record by the town. So many families attended the parting that it evolved over time into a social and political event. Writing in 1867, an early chronicler of Queens County’s rural history remarked of the fall parting:
It was the great holiday of the times. Here rogues, thieves, and bullies congregated; creditors came in quest of debtors; dealers and traders of all sorts made bargains; horses were swapped, and constables were on the look-out for fugitives from justice; scrub-races, betting, gambling, drinking and fighting, were the order of the day. To counteract these numerous evils, the town enacted a law, that there should be no tavern or selling of liquor at the pens.

At the conclusion of the event, owners herded their animals home, and the plain lay empty and brown.57

Farm women also culled poultry flocks in the fall, not only to preserve winter feed supplies, but because Thanksgiving and Christmas represented the two most important times of the year to market turkeys, geese and sometime chickens.58

In autumn farmers and gardeners participated in two basic types of seasonal tasks. The first of these were activities related to the harvest. They brought in a dizzying variety of crops, from a dozen different types of garden fruits and vegetables, to apples, potatoes, salt hay and field corn. By late autumn these mainline crops had played out and agriculturists concentrated on bringing in root crops and a few hardy vegetables. It is a striking fact of Northeastern agriculture that compared to harvest activities in the Middle West, agriculturists relied on extensive hand labor to bring in their crops. Family members and regular hired hands performed the bulk of this work. Day laborers found work at peak times such as during the potato harvest, or where extra help might be required to bring in a crop like apples, but like other times of the year long term employment relations predominated.

The second type of seasonal tasks related to work preparatory for winter. Agriculturists did this as they observed changes in the weather, the most important of which was the occurrence of frost. For horticulturists this meant preparing greenhouses and cold frames, and for farmers culling livestock herds. For both, it involved laying up supplies for winter,
repairing fences and buildings, setting up stoves, bringing in boats and taking out sleighs.

Where autumn’s beginning is elusive, mixed up with summer’s end, the demarcation between autumn and winter is clearer. Completion of corn husking, stowing away the last cabbage or bushel of turnips, and sharply colder temperatures provided compelling indicators of what was to come. Although winter activities numbered fewer than autumn and the season was generally slower-paced, it was not the time for rest as might be expected.
Notes


3 Beach, Apples of New York, 8-10.


5 Bridgeman, Young Gardener's Assistant, pt.3, 35-36; Beach, Apples of New York, 8-10, 15-16; Buist. Family Kitchen Gardener, 149; The full citation for the first edition of this work is: A. J. Downing, The Fruits and Fruit Trees of America; or, The Culture, Propagation, and Management, in the Garden and Orchard, of Fruit Trees Generally; with Descriptions of all the Finest Varieties of Fruit, Native and Foreign, Cultivated in this Country (New York: Wiley and Putnam, 1845); Hedrick, History of Agriculture, 394-95

6 Bridgeman, Young Gardener's Assistant, pt.3, 37-38; Beach, Apples of New York, 7-10. Beach (p24-25) also categorizes New York state apples into 10 categories, such as Fall Pippins and Rhode Island Greenings. So diary entries mentioning these types of apples might have been for different varieties within the group. Diary of Adriance Van Brunt, 10 October
From an economic standpoint, having the earliest crops on the market means obtaining the best prices. Having continually ripening varieties means consistent sales through the season. Cameron probably sought both. The list of variety maturation dates is in the front of volume 1 of Cameron’s farm journal. Diary of Isaac Oakley, October, 1874, Adriance Memorial Library. Poughkeepsie, New York; Gates, Farmer’s Age, 356; Beach, Apples of New York, 146-48, 343-44.

8 Buist, Family Kitchen Gardener, 158-59; Ruth Velsor to Elizabeth Van Cott, 7 August 1862.

9 Buist, Family Kitchen Gardener, 165; Diary of Elizabeth Mulford Crane, 21 October 1824. Primary sources tend to indicate that only men picked apples, but the engraving in Industries of New Jersey (New York: Historical Publishing Co., 1882), 35 shows women and men in the orchards. Ruth Velsor implies that she picked apples. Ruth Velsor to Elizabeth Van Cott, 7 August 1862; James C. Brandow, “The Journal of Nathaniel Carrington,” 16 October 1837; Horticulturist (October 1846): 179-80; Charles V. Mapes, Charles V. Mapes’ Illustrated Catalog for 1861 (New York: M’Crea and Miller, 1861), 188.


11 Hedrick, History of Agriculture, 218; Beach, Apples of New York, vol.1, 10-11; Edgar W. Martin, The Standard of Living in 1860 (Chicago: University of Chicago Press, 1942), 31; Ruth Velsor to Elizabeth Van Cott, 7 August 1862; Diary of Alexander J. Cameron, 12 December 1862.


15 Schmidt, *Rural Hunterdon*, 110; Mapes, *Illustrated Catalog*, 154-55; Account Book of Alfred Cutting, 30 October, 1 November 1879; Diary of Benjamin F. Prince, 26 November 1879; Ann Cock to William Cock, 16 August 1840, Sullivant Collection, Underhill Society of America, Oyster Bay, New York; Diary of Elizabeth Mulford Crane, 30 October 1824

16 Bidwell and Falconer, *History of Agriculture*, 243, 380; Schmidt, *Agriculture in New Jersey*, 184; Tredwell, *Personal Reminiscences*, pt., 114; James M. Van Phalen, *History of Bergen County, New Jersey* (Salem, Massachusetts: Higginson Book Co., 1900), 34; Hedrick, *History of Agriculture*, 386. Statistics for the Erie Railroad show a 28 percent decrease in the amount of “apples and other fruit” shipped from southeastern New York State to the terminus of the line between 1845 and 1846, and a 23 percent decrease between 1846 and 1847. By 1848, however, the railroad shipped fully 20 percent more than the figure reported in 1845. Some of this is accounted in the area served by the firm. The Erie’s tracks stretched 53 miles inland from Piermont in 1845 and 1846, 61.5 miles in 1847, and 74 miles in 1848. Vanderbilt, *Social History of Flatbush*, 282. Horne, “Life on a Rocky Farm,” 39;


18 Gates, Farmer's Age, 262-64; Bidwell and Falconer, History of Agriculture, 373-75; Schmidt, Agriculture in New Jersey, 177-79; Peter Henderson, Gardening for Profit (New York: Orange Judd Company, 1893), 266; Elizabeth Mulford Crane Diary, 22 August 1826; Diary of Benjamin Prince, 1 September 1870; Brooks, Diary of Michael Floy, 16, 36. Ruth Velsor noted in early October that her parents were “still” digging their potatoes from the ground. Ruth Velsor to Elizabeth Van Cott, 3 October 1862.

19 Mapes, Illustrated Catalog, 86, 182-83; “Farm Machinery in Yesteryear was Man Power,” Riverhead News (1943?) Virginia Wines Collection, Hallockville Museum Farm; Diary of Selah Wicks, 12, 18, 21 September 1855; Diary of Alexander J. Cameron, 10-20, 21 October 1864.

20 The figure for potatoes dug by the Conklin family was derived from data on sales. Diary of Benjamin F. Conklin, 29 October, 8, 17 December 1855, typescript, Hallockville Museum Farm, Northville, New York.

21 Statistics on potatoes sales are calculated from daily amounts sold in the market. Account Book of John C. Bergen, 29 June – 10 November, 1865. Trips made in the month of July averaged 32 bushel, and Bergen never sold more than 36 bushels in a day. In Benjamin Conklin’s diary mentions 2 or 3 men digging 80 bushels of potatoes per day for two days. Diary of Benjamin F. Conklin, 21-22 September 1855; James dug 22 bushels in one day. Diary of Alexander J. Cameron, 10 September 1862.

22 Diary of Samuel Megie, Sr., 9 September 1862; Robert Drummond Farm Accounts, 1 August 1848 – 30 March 1849, 1 -30 September 1849, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey. Sale figures indicate that Drummond had additional storage facilities. Schmidt, Rural Hunterdon, (pl22) says that farmers stored seed potatoes in cellars.


Diary of Selah Wicks, 10 October 1855. From 1756 through 1821 the Town of Oyster Bay, New York prohibited persons from staying on the marsh overnight. Reichman, "Salt Meadows," 128; John Cox, Jr., *Oyster Bay Town Records, Volume 8, 1795-1878* (New York: Town of Oyster Bay, 1940), 70. See page 96 (1830), any other year beginning with 1822 for use of the lease system. Tredwell, *Personal Reminiscences*, 140-142, 147. The author presents marshing in the decade of the 1840s as continuing to operate under a highly regulated environment.


32 History of Suffolk County, New York (New York: W.W. Munsell, 1882; reprint, Suffolk County Tercentenary Commission, 1983), 46; Smith, “The Old Time Ma'shin' Season,” 125; Reichman, “Salt Meadows,” 127. Some farmers also cut “fresh hay” or “meadow fresh” grass that grew along fresh water estuaries. Noah Youngs Daybook, 11 August 1835, 14-15 August 1849, typescript, Hallockville Museum Farm; Diary of Benjamin F. Conklin, 11 August 1852; Estate Inventories of Henry Parkhurst, Sayres Coe, Newark, DATE (#14036G 1851), Moses Roberts, Newark, DATE (#14414G 1853), Henry I. Westervelt, Newark, (#5496B 1859), New Jersey State Archives.

33 Noah Youngs Daybook, 6 August 1849, 31 January, 28 July 1850; Account Book of Alfred Cutting, 18 November, 5 December 1878, 7, 9 October, 3 November 1879, MS-3, Box 1, Folder 3, Staten Island Historical Society; Tredwell, Personal Reminicences, pt.1, 139, 143; Overton, Long Island's Story, 179. Hay scow measurements are from the year 1900. Robert J. Sim, Pages from the Past of Rural New Jersey (Trenton: New Jersey Agricultural Society, 1949; reprint, 1975), 96-97; Daybook of James S. Cory, 14 December 1828, MG-19, Stuart C. Smith Collection, New Jersey Historical Society, Newark; Tredwell, Personal Reminicences, pt.1, 139-40; R. Birdsall Jackson, How They Lived: As Disclosed by Old Long Island Tales and Chronicles (Rockville Centre, New York: Paumanock Press, 1941), 209;
Diary of Selah Wicks, 31 August 1855; Diary of Adriance Van Brunt, 30 August, 11 September 1828.


Account Book of John C. Ditmas, 16 October 1838, Brooklyn Historical Society.


For irregular hay cutting see Diary of John C. Bergen, 30 July, 8 August, 19, 21, 24 October 1846. References to cutting "thatch" occur in the Searles almanac, and other records as late as December. Henry Searles Almanac, 21 November 1861, 29 December 1862, Oysterponds Historical Society, Orient, New York.

Maturity is calculated by subtracting planting from harvest dates. The number ranged from 120-150 days for field corn, although for sweet corn 90-120 days is more likely. In years when early frost struck, farmers brought in what they called "soft corn" which did not dry.

39 Peter Neilson, *Recollections of a Six Year’s Residence in the United States of America* (Glasgow: David Robertson, 1830), 126-27; R. Douglas Hurt, *American Farm Tools, From Hand-Power to Steam-Power* (Manhattan, Kansas; Sunflower University Press, 1982), 57-58, 59-61; Commissioner of Patents, *Annual Report, 1850, Agriculture* (Washington, DC: 1851), 405; Diary of Adriance Van Brunt, 7 September 1828; Brandow, “Journal of Nathaniel Carrington,” 9 September 1837; Diary of Isaac Oakley, 27 September, 17 October, 1867. The connection between complete removal of corn stalks from the field in order to clear a field for fall planting has not yet recognized by historians. Instead they attribute the system to the fact that husking could be performed later on. Gates, *Farmer’s Age*, 170. On mechanization see Schmidt, *Rural Hunterdon*, 107; Noah Youngs Diary, 28 - 30 September, 1 - 5 October 1850; Diary of Alexander J. Cameron, 29 September 1862; Diary of Garret S. Baxter, 15 November 1827. The image of dozens of corn shocks standing about a field remains a popular representation of autumn in the countryside even though this practice ended 75 years ago.

40 NYSAS, *Transactions* 14 (1854): 470; Noah Youngs Daybook, 10-15, 17-18, 21, 28-30 October 1850; Diary of Samuel Megie, Sr., 23, 30 October 1862; Account Book of Alfred Cutting, 29 October – 5 November 1866, MS-3, Box 1, Folder 2, Staten Island Historical Society; Diary of Elizabeth Mulford Crane, 15 October 1824; Journal and Account Book of James Hawxhurst, 8 October 1834; Ann Cock to William H. Cock, 8 December 1839; Benjamin Conklin spent 8 days husking in the “railroad lot.” Diary of Benjamin F. Conklin, 2 November – 10 November 1855; Diary of Benjamin F. Prince, 27-31 October, 1 November 1879; Diary of Alexander J. Cameron, 1 – 31 October 1863, 1 – 31 October 1864. Jesse and Hannah Cameron husked in the barn while the male hired hands worked outdoors. Ibid, 27 October 1863; 31 October, 2 November 1864; Schmidt, *Agriculture in New Jersey*, 233, writes that hand husking became a “lost art” in the 1930s. For additional examples of women and children husking, or for the implication that they are, see Ruth W. Velsor to Elizabeth Van Cott, 26 October 1862; Diary of Gilder S. Conklin, 4 November 1868. Hedrick, *History*
of Agriculture, 205-06 mentions that corn huskings were an excuse for excessive consumption of alcohol.

Diary of Benjamin F. Prince, 14 November 1879; Diary of Alexander J. Cameron, 23 October 1863. Cameron's corn crib held at least 370 bushels in November, 1864. Noah Young's Daybook, 10 October 1849, 11 October 1850; Schmidt, Agriculture in New Jersey, 166; Diary of Selah Wicks, 10 December 1855; J.A. Hammond owned a "portable crib." J.A. Farm Journal, 7 November 1853; New Jersey Farmer (October 1857): 33.

Noah Young's Daybook, 16, 23, 28 October, 2, 7 November 1850; Diary of Gilder S. Conklin, 15 November 1868; J.A. Hammond Farm Journal, 7, 27 November 1853; History of Suffolk County, New York, 46; Hurt, American Farm Tools, 58; "Inventory of Jacob Willits's Stock & etc." [1839] Willits Family Papers, Long Island Studies Institute, Hempstead, New York; Diary of Alexander J. Cameron, 3 December 1861, 6 November 1863; Diary of Benjamin F. Prince, 17, 19 November 1879. On the colonial practice of feeding out corn stalks see Wacker, Land Use in Early New Jersey, 178, 236; Hedrick, History of Agriculture, 336; Schmidt, Rural Hunterdon, 101; Mapes, Illustrated Catalog, 8, 124-26.

Hurt, American Farm Tools, 62-63; Noah Young's Daybook, 21-23 November 1850, Diary of Benjamin F. Conklin, 21 November – 3 December 1860; Diary of Isaac Oakley, 22 November 1867; Diary of Benjamin Prince, 10 December 1879.

Bidwell and Falconer, History of Agriculture, 379 write that turnips were not grown much after 1850, but other sources indicate otherwise. Bridgeman, Young Gardener's Assistant, pt.1, 144; Buist, The Family Kitchen Gardener, 41; Census of the State of New York for the Year 1855 (Albany: Charles Van Benthuysen, 1857), 320. See also the "Special Products" tables in this volume. (n.p.); Henderson, Gardening for Profit, 140, 152. 175-76, 180-81; 304.

Account Book and Farm Calendar of Teunis Bergen, 22, 23, 26 November, 3, 10 December 1839; Henderson, Gardening For Profit, 180-81.

Diary of Adriance Van Brunt, 19 December 1828; Diary of Selah Wicks, 24 November, 3 December 1855; Account Book of Alfred Cutting, 15 - 17 October 1866; Diary of Alexander J. Cameron, 10, 13 November, 5 December 1863, 1 – 31 November 1864; Bridgeman, Young Gardener's Assistant, pt.1, 162; Diary of Samuel Megie, Sr., 28 November, 2 December, 1862.

Inventory of the Estate of William Richards, 4 January 1865, (#161908 1865), New Jersey State Archives. The assessors estimated the value of the following roots buried "in the field" as follows: 20 bushels carrots:$10, 20 bushels beets:$20, 150 bushels turnips:$37.50, 100 barrels parsnips:$150. See also Inventory of the Estate of Peter During, 18 November 1851, (#14061G 1851), New Jersey State Archives. The assessors of the During estate also
reported 1,800 celery and 500 cabbage plants above ground and 300 cabbages buried beneath the surface. Halyoake Farm Diary, 13 November 1874; Diary of Alexander J. Cameron, 3, 5 December 1863; AICNY, Transactions (1851), 464; Diary of Selah Wicks, 3 December 1855.

48 William Cobbett, A Year's Residence in the United States of America (1818; reprint, London, 1820), 91; Halyoake Farm Diary, 27 November 1871. Losses calculated from 150 bushels on the east farm and 2 ½ acres on the west farm. Yield calculated from west farm entries dated 2, 20 October 1871 [238 bushels per acre] and west farm 15 – 20 November 1871 [294 bushels per acre]. Price of $0.17 per bushel paid at west farm, 28 November 1871.


50 Robert Buist, American Flower-Garden Directory (Philadelphia: A. Hart, 1852), 177. Farmers and gardeners also laid up supplies of coal and wood for their homes at this time. Brooks, Diary of Michael Floy, Jr., 1, 35, 200; Diary of Alexander J. Cameron, 2 December 1861; Brandow. "Journal of Nathaniel T.W. Carrington," 22 September 1837; Diary of Benjamin F. Conklin, 23 November 1859.


52 Henderson, Gardening For Profit, 46.

Peter Henderson raised the Early Jersey Wakefield variety, and discusses its advantages in *Gardening For Profit*, 162. Halyoake Farm Diary, 20 September, 4, 18, 30, November 1876.


Halyoake Farm Diary, 15, 22 September 1870, 16 October 1871; Henry Onderdonk, Jr., *An Historical Sketch of Ancient Agriculture, Stock Breeding and Manufactures in Hempstead* (Jamaica, New York: 1867), 47-48.

Noah Youngs Daybook, 23 November 1844.
CHAPTER 8. THE AGRICULTURAL YEARS ENDS: WINTER

The start of winter, the final season of the agricultural year is closely connected to the weather. In this way winter and spring are similar. Winter activities generally required freezing temperatures and some snowfall. In the New York City region both come in abundance, in early December if not before Thanksgiving. On the farm, December was far busier than January or February, but compared to the rest of the year work activity slowed during winter. It practically ceased in the garden. Some near-urban farmers and large scale commercial gardeners maintained cold frames containing cabbages and other hardy plants in hopes of an early start in the spring, but for the most part carefully tended lots on the edge of urban areas stood vacant and snow-covered. For greenhouse operators, who represented the future of commercial horticulture in the Northeast, winter offered no such break and they maintained a busy schedule planting, tending and selling plants and flowers.

Slaughtering livestock, chopping trees and selling firewood, marketing hay, grain and potatoes all occupied the time of agrarian women and men in winter. Winter was also a time for performing odd jobs, for performing outwork or seasonal manufactory labor. Winter employment was a source of real concern to small-scale gardeners, even before the frost carried off the last fall vegetables. At autumn’s end, they joined the ranks of the seasonally unemployed. Continuation of the growing season in the garden required use of glass window sashes for cold frames or a greenhouse, expensive undertakings that limited the winter growing season to nurserymen and a few large-scale gardeners. Not only could small-scale tenant gardeners ill afford to engage in winter agriculture, thy did not wish to do so. Expense aside, they avoided becoming encumbered with heavy, breakable items like sashes, because as tenants they moved frequently and owned no storage facilities. Furthermore, with garden
and home in two different locations, their investment would lie alone and unprotected, prey to vandals and thieves.¹

Some tenant families may have remained idle for the winter, and others probably viewed the season’s end as a time to migrate elsewhere. Most, including families newly arrived to the metropolis, could ill afford to do nothing at all for three or four months. Living expenses remained constant throughout the year and fuel costs rose, sometimes rapidly, in the winter. Gardening family members therefore sought alternative employment. Opportunity existed in “nuisance” industries that clung to the edges of nineteenth century cities and as explained in Chapter 2, it was not unusual for some members of gardening households to work in such places throughout the year. It seems reasonable that where winter employment opportunities existed in these industries, seasonally unemployed gardeners took up the slack. Women gardeners probably also sought outside employment or took in work such as the manufacture of clothing. The issue of winter employment attracted the attention of the editor of the New York Farmer. In the winter of 1835, and concerned that seasonally unemployed gardeners “suffer in disposition, amiableness and respectability,” the editor proposed that the City of New York provide winter employment opportunities and offer gardening classes in the common schools. The Common Council did nothing and Manhattan’s less well to do gardening families managed along on their own.²

Not all small-scale gardeners faced such employment and lifestyle changes when winter arrived. Some, for example, lived with their landlords. Other more established families engaged in second businesses to helped ameliorate the effects of seasonal unemployment. Some apparently operated “saloons” during the winter months on the outskirts of the city of New York. Others engaged in more permanent and socially acceptable endeavors. For
example, the family of Manhattan gardener Lewis Tappy ran a grocery store. Thus, small scale gardeners generally faced unemployment and reemployment in winter. Large-scale commercial gardeners, orchardists, and nursery owners continued to work outdoors, and some added new indoor responsibilities. These included pruning and transplanting plants, maintaining cold frames, building hot beds and supervising daily operations in the greenhouse. Like many winter horticultural activities, the pruning and transplanting of bushes, trees and vines actually took place during periods of dormancy, from November to April, in any but the most severe weather conditions. Horticulturists performed these tasks in cold weather because the plants underwent less shock than would occur in warmer weather. For this reason, in early December, 1861 two of Alexander Cameron’s hired hands removed “useless trees” from the orchard and replaced them with new Quince seedlings. It is also why he sent “Patrick” to prune in the apple orchard in the month of February. These tasks required a certain amount of skill that included knowing what new growth to prune and how to transplant trees (not recommended in mid-winter) without damaging the roots. Horticulturists entered the field armed with a full set of tools, that included knives and saws of various sizes, plus axes, shovels and twine. During the wintry work, astute workers kept a sharp eye out for insect nests to destroy, or evidence of damage caused by rabbits or severe weather.

Nurserymen and orchardists transplanted trees outdoors from late fall to early spring as long as the ground remained penetrable with a shovel. For example, anticipating a spring thaw, New Brunswick farmer Byron G. Hager purchased 200 pear trees from a Rochester nursery in mid-February, 1868. Similarly Long Island farmer Lucius Hallock purchased and planted a forest of seedling trees before the ground froze. Over the course of a month,
between 17 November and 21 December 1870 he planted fifty-eight "Vicar of Winkfield" pear trees, and seventeen other pear varieties. Hallock also heeled in 100 Norway maple trees for spring transplanting.\(^5\)

As explained in Chapters 5 and 7, commercial gardeners made hot beds and cold frames in late fall and early spring, and maintenance of these items took place during winter. Yet the greenhouse and its products provided the winter mainstay of the commercial horticulture industry. Before the Civil War greenhouses were used to grow flowering and ornamental plants. Although no census taker counted these structures, a great many of them existed within and surrounding the borders of urban areas. James M. Paterson of Newark reported in 1872 that:

> it would be a rarity to find on the grounds of an old farmer, no matter how extensive the place, a solitary greenhouse or conservatory, while around him upon the small suburban plots of his city neighbors might, within sight, be counted a dozen.\(^6\)

As cold weather set in around the end of November, the horticulturist's most important concern lay with the heating system which typically consisted of one or more coal fired stoves. They required close, regular attention. Robert Buist warned in 1852, "the hot house ought never to be left entirely to inexperienced persons, because they are not aware what might be the result of inattention even for an hour." The sun added to the challenge of maintaining a constant temperature in the house, because during the day it could heat the inside air to seventy degrees or more, but interior temperatures plummeted within hours after nightfall.\(^7\)

Greenhouse plants could tolerate some fluctuations. Excess heat during the day was regulated by simply opening windows, but maintaining even heating proved more difficult.
Horticultural writer Edward Sayers recommended temperatures of from thirty-six to forty-five degrees for winter flowers, and up to sixty-five degrees for more delicate plants. The typical house received its heat from a flue that passed from the stove through a brick wall in the rear of the building. Considering the extensive glass surface and the lack of insulation, these flue systems had difficulty providing even heat, a situation demanding that managers pay close attention to internal environmental conditions. For example, at the Floy nursery an unexpected fuel quality problem created a dangerous situation that resulted in the loss of a “full cart-load of plants.” Michael Floy, Jr. described the event in his diary:

Wednesday, January 7, 1835: Clear sky and most intensely cold; thermometer but one above zero. . . . The frost has got in the little Green-house, and I do not know when we shall be able to get it out. I laid all the fault to the coal, so Father got a ton of Schuylkill; if he had not done so we should have been frozen all up.

Thursday, January 8, 1835: Same as yesterday. By keeping two fires constantly going, got the frost out of the little Green-house. I do not wish to see Jack there again; the plants do not relish such a companion.

Heating systems using circulating hot water in iron pipes heated large spaces more evenly, but were more expensive than flue heating. New buildings built in the 1870s incorporated high-pressure hot water and eventually steam heat, both improvements over older methods.® Although Michael Floy raised temperatures in the “little greenhouse” by running two stoves at full capacity, rapid heating was not advised. Plants located nearest the source dried out and were otherwise injured from the heat. Care also had to be taken to keep stove and flue from becoming over heated, and to keep flammable objects distant. To do less tempted disaster. For example, on the morning of December 15, 1834, while outside temperatures plunged to zero, fire broke out in Thomas Hogg’s greenhouse, totally destroying the structure and its contents. Although the Hogg family, a well-established name in the New York City
nursery business, recovered from this loss, such a disaster could have easily put a smaller grower out of business.  

Besides monitoring the temperature, growers watered the plants regularly and inspect for insects. These thrived in the artificial environment and as explained in Chapter 6, multiplied rapidly indoors, necessitating fumigation with tobacco smoke. Thus, the operation of a greenhouse in winter required skill and financial security to support the risks involved in this venture.  

Successful operators enjoyed considerable business during winter. A healthy market existed for flowers and plants, and nurseries waged fierce competition for customers. They used different means all aimed at luring “ladies and gentlemen” into their establishments in hope that they would buy on impulse. For example, wealthy city dwellers often took sleigh rides into the countryside. New York’s suburban nurserymen sought to make their houses a stop on the route by welcoming visitors to view their plants and facilities, and to experience the beauty of a greenhouse on a sunny afternoon. Boll’s nursery, famous for its carnations, also boasted two camellia and two rose houses. Located near the village of Bloomingdale, today present-day Sixth Avenue and Forty-second Street, about six miles north of New York’s City Hall, the nursery was an appropriate stopping off point for travelers. Other nurseries were located along Third Avenue in New York, a popular thoroughfare for carriage riding and sleighing in winter. One nursery even sold birds. Exotic and colorful plants made the biggest draw. In January, 1853 the *Horticulturist* commented on Thomas Hogg’s “*Bigonia venusta* (from Brazil) trained to the rafters of the hot-house . . . loaded with its brilliant orange scarlet blossoms . . . worth a twenty miles journey to see” while Isaac Buchanan of Astoria raised “rare and curious plants,” including orchids. In an attempt to
boost business Michael Floy carried a camellia through the streets of New York so large that “people stared as we went along with it.”

They also offered specialty services. John Thorburn sold “winter bouquets,” while Thomas Hogg supplied flowers for parties and balls. But if the experience of the Floy nurseries typifies this industry, the winter receipts came from individuals who walked in off the street and made purchases. For example, Michael Floy reported one banner sales day in the winter of 1834 when he sold fifty-five dollars worth of the flowers to greenhouse visitors.

A long list of seasonal tasks awaited orchardists and urban horticulturists in winter. As long as the ground outside remained soft, nurserymen pruned and dug plants, trees and shrubs. Commercial vegetable growers who could afford the cost of glass maintained cold frame crops starting in November, and hot bed plants in late February. Nurseries sold plants and flowers to wealthy families who dropped by on leisurely weekend outings.

Farm families participated in a wider range of activities during the winter. These included marketing, slaughtering, threshing, cutting wood and collecting fertilizers, plus various odd jobs, saved for the cold weather. Slaughtering was one of the most important events of the year because of the income generated from the sale of meat and its importance in country diets. It took place only during cold weather because no other large-scale refrigeration technology existed. Slaughtering began on nearly every farm simultaneously, as soon as extended cold set in. This usually occurred some time from the last week of November to the second week of December. Families began to prepare up to two weeks in advance. They brought heavy cast iron kettles out of storage, located tools, and made polite requests for the return of meat grinders and sausage stuffers loaned out to neighbors the
previous season. Women and girls cleaned kitchens, while boys and men sharpened knives and chopped firewood. Then, fully mobilized like a huge army they waited — and waited — for cold weather to arrive. Over time and through careful observation, rural men and women sought out certain signs that winter had arrived. In the Hudson Valley, for example, Isaac Oakley noted the beginning of winter and hence, slaughtering time, when puddles of water in the yard had “frozen in the sunshine.” On eastern Long Island, Lucius Hallock took a more conservative stance by waiting for the ground to freeze before slaughtering his hogs.\(^{13}\)

A sense of eagerness hung heavy in the air in the days preceding this event. One reason is because slaughtering meant a welcome change from salt to fresh meat. An observer of the eating habits of Queens County farm families in the 1830s noted that after slaughtering they consumed fresh pork for as long as possible before advanced spoilage forced them to salt down the remainder. Not that a little spoilage posed serious problems, because it gave the meat a preferred “seasoned” flavor. A second reason that farm families looked forward to slaughtering is that they earned significant sums of money from the sale of fresh and salt meat to neighbors, storekeepers and wholesale merchants. For example, the owner of one Queens County farm killed three hogs one December afternoon and “carried them to the boat” presumably for sale in New York the following day. The sale of meat in winter helped boost farm incomes over expenditures, a welcome change from summer and fall.\(^{14}\)

A competitive spirit existed among families in rural neighborhoods regarding who would begin slaughtering first. “William Thomas killed a hog last week. He is the only one who has started so far” penned an impressed Ruth Velsor in her diary one day in late November, 1862. Yet sometimes the most eager started too early and realized their folly as temperatures rebounded above freezing. Velsor also commented on one neighbor who
slaughtered earlier in November, only to encounter unseasonably warm temperatures the following day.\textsuperscript{15}

Hog killing was the most important, and common form of slaughtering to take place on the farm because both salt and fresh pork held such important places in country diets. The event might take place twice during the winter and involved the entire household, along starkly drawn gendered lines. On the appointed day work began well before dawn as the men built a fire beneath a large water-filled cauldron. At dawn, they entered the sty and, one by one, cornered, stunned and cut the animals’ throats. They quickly hoisted the animals upside down on a rack to speed their bleeding out. This achieved, they lowered each carcass, into the cauldron of scalding water. This facilitated removal of the bristles with hand tools called “scrapers.” Finally, they eviscerated and cut up the hogs.\textsuperscript{16}

Slaughtering may be viewed as a true community effort because it occurred everywhere at the same time and it involved the entire household, and even persons from outside the family. Regular hired hands and even day laborers were often present. “We killed 3 hogs [and] had Black Tom to help” wrote Jane Keteltas on the first day of the slaughtering season of 1855. Relatives also came by to assist, with the unspoken understanding that the favor would be returned later. “Killing hogs, Uncle Garrett helping” wrote twenty year old John C. Bergen in December, 1846. Nor did the men arrive alone. Female relations came to assist in the kitchen. “Uncle Isaac and Aunt Jane were here” wrote Benjamin Conklin after a slaughtering in January, 1859.\textsuperscript{17}

Besides the social aspects of this event, extra hands were necessary for very practical reasons. The animals weighed too much for one or two persons to slaughter or process alone. A rough analysis of the hog weights recorded in farm diaries indicates that even before the
era when progressive farmers are credited for introducing improved breeds, farmers raised heavy hogs. Figure 8.1 shows the distribution of thirty-seven hog weights at slaughtering time, as reported in farm diaries and other sources from the 1820s to the 1870s. A significant portion of the weights remained within the 251 to 300 pound range, over the entire fifty year span. This indicates a certain consistency in the type of animal raised by regional farmers. Although these animals were probably not improved breeds, farmers still raised them to respectable weights.\textsuperscript{18}

Figure 8.1 Slaughtered Hog Weights

Source: Farm diaries.

The processing following slaughtering followed two different forms. If intended for sale fresh, processing was minimal because the meat was disposed of quickly. They knew that a change in the weather could prove disastrous so time was of the essence. Within twenty-four hours they cut the meat up, rubbed it in salt, packed it in a barrel of brine, and
delivered it to the boat, depot or local merchant. Hides and tallow sold for considerable sums. For example, Adriance Van Brunt received fifty-six cents per pound for hides from two cows butchered in December 1828.\(^{19}\)

Meat intended for home use underwent a slower and perhaps, more careful processing, probably because they expected it to last well into the following year. Scraped and cleaned, the carcasses hung outside overnight to cool and "harden." The following day one or more men cut them into various pieces: shoulders, hams and chops. These they salted and packed in barrels filled with saltpeter brine. They packed away hearts, tongues and livers in a similar fashion, and pickled a portion of the meat in vinegar.\(^{20}\)

Meanwhile, the women of the household, often accompanied by female relatives and neighbors "tried out" lard and made head cheese. Both women and men ground sausage - using a heavy iron, hand-cranked tool called a "chopper" (Figure 8.2). Many of these machines are on display in museums, suggesting widespread ownership, but many families borrowed them from neighbors and relatives. Farm women stuffed the ground pork into casings using another iron hand tool called a "stuffer" (Figure 8.2). Filled casings were tied off on both ends. Like the sausage grinder, families loaned stuffers to each other throughout the winter. For example, Samuel and Anne Megie, loaned their "sausage machine" to two different families over a period of ten days in January, 1862. Sausage stuffing took about a day, after which the women stored the sausages away and cleaned the kitchen. Many farm families spent the following day engaged in leisurely activities.\(^{21}\)

Other than by salt or pickling, families preserved pork and beef by smoking. This occurred in later winter or early spring after the meat had steeped in brine for about two months. The meat was removed from the barrels and hung on S-shaped hooks in a building
called a smoke house. Smoke houses had plastered interiors and exteriors of wood, brick, and stone. They came in various shapes and sizes. Good houses were relatively air tight, had a pit in which the farmer built a smoldering fire and a place to secure the meat. Not all farm families built these buildings, choosing to smoke meat in chimneys or borrow space in a neighbor’s house. For example, when Putnam County farmer Isaac Oakley helped neighbor Amos Barger butcher two hogs, Barger later allowed Oakley to hang ten pieces of pork and five of beef in his smoke house. Hams, pork shoulders and sides of beef hung for up to a week over a carefully tended fire of green hickory. The actual method varied, as families developed secret recipes through trial and error. After a week, the farmer entered the smoke house, wrapped the meat in cloth and removed it to a cellar or garret for storage.²²

A week or so after the first hog killing many farm families slaughtered their first beef. Some farmers hired men to do the killing and cutting for them, probably because of the great weight the cattle obtained and greater complexity of the process. For example Ruth Velsor’s parents hired a man named Charles Mayhew to cut up the carcass of a cow they slaughtered in February 1862. Like pork, that portion not consumed fresh was salted down and sold, pickled or smoked. After the butchering, farm women processed a portion of the carcass making mincemeat, a favorite country dish. Unlike sausage making, this was not a
completely gendered activity. For example, Flatlands farmer John C. Bergen helped his mother make mince pies in the winter of 1847.23

Slaughtering was always the first major winter activity on the farm. It began when permanent cold weather set in and occupied the efforts of the entire household including hired help, and often extended family members. It is important because it provided significant revenue and also because of the central role of meat in the country diet. Slaughtering also served a community function through the exchange of labor and tools, and also because it fostered a friendly competitiveness between families. After slaughtering of the hogs and cattle, farmers turned their attention to threshing. As mentioned in Chapter 6, threshing is the process of separating grain kernels from their hulls and stalks. Before the introduction of machine threshing in the 1840s the grain harvest ended when field hands stowed away sheaves of grain in barns and barracks until winter threshing.24

They waited until December for practical reasons. Cold weather eased separation of kernel and hull and the process worked best on dry, “snapping cold winter days.” If performed outdoors it also required a hard (frozen) surface. Threshing is also a slow, multi-step process and not time-sensitive, compared to other tasks facing farm families in summer and autumn. One historian also claimed that winter threshing gave annually employed hands something to do at a quiet time of year. The opposite of this assertion is also true. Surely some farmers saved threshing for winter because they could do the work themselves at no cost for labor. A traditional winter activity on the farm before 1840, threshing took place from late November to early February, but most often in December and January.25

In New York and New Jersey farmers threshed two ways, either by “treading out” the grain, or by using a flail. Some disagreement exists among historians as to why farmers used
one method or the other. One school of thought argues that cultural traditions guided choices and the other, economic factors. Unfortunately, little light can be shed on this debate because despite the detailed information contained in farm diaries from the New York City region, these records generally mention only that threshing occurred, not which method was being used. For both methods the process began by untying the sheaves of grain and laying them out on the frozen ground or indoor “threshing floor,” a wide flat space in the center of a barn. Recognizing the necessity for such a space, builders of both “New World” Dutch barn and English barn designs incorporated space for threshing.26

Threshing by flail required the user to swing a club joined at the end with a shorter piece of wood, full force down on an open sheaf of grain. The short wooden end of the flail, snapped downward by a quick flick of the wrist, struck the grain. Contemporary accounts report that the flail made a distinctively hollow reverberation in the floor that carried on for long distances. Men usually flailed in pairs, gradually crushing down the pile, which they turned over periodically for even coverage. According to Ulysses P. Hedrick, flailers wore “a long duster-like frock, now [1933] for a hundred years out of fashion.”27

Use of the flail meant slow work, but with less damage to straw and grain than through the alternative method of threshing by “treading out” the grain. This method involved laying out the sheaves in a circle and leading one or more animals (usually horses) across the piles so that they literally trampled it apart. Faster than flailing, treading left a greater proportion of broken straw and crushed grain kernels. Both methods created considerable dirt and dust that, when performed indoors, made a choking cloud. Although Jared Van Wagenen wrote that use of the flail was “pleasant employment in rough weather” other sources indicate that the dust and dirt made it less so. For example, Suffolk County
farmer Jonathan Horton, who described threshing in the 1830s with some detail, seemed to
be more concerned with the quality of help:

Thrashed two floorings of wheat on 14 shocks with the horses which the boy
rode or drove them the most of the time but helped me but very little besides
and it was after sundown before I got the floor swept.28

After thoroughly “thrashing” the sheaves, workers forked off as much straw as
possible. Then they swept the grain and remaining chaff into piles, and then baskets in
preparation for “winnowing,” or separating the chaff from the grain. Again, variety of
method prevailed. One popular practice involved pouring the contents of the basket through
a coarse sieve called a “riddle.” When performed inside, the threshers opened the doors on
either end of the barn just wide enough to permit a stiff breeze to pass across the threshing
floor. As they “riddled” the grain, the wind carried the chaff away, the sieve captured larger
pieces of straw, and the grain kernels passed through into a basket. Depending on the
strength of the wind, or if the grain contained weeds seed, winnowing might be repeated one
or more times. Jonathan Horton described a day cleaning wheat:

December 13, 1831. In the forenoon I finished treading out the flooring of
wheat and after the straw was pitched off it took at least two hours to clear up
the floor and then I went to the winnowing and I did not finish riddling the
wheat till sun down (the wind being light) and there was about fifteen bushels
of it which finish the thrashing of our wheat.”29

The slowness of these methods is striking. According to one historian, a man and boy
with three horses could tread out about thirty bushels of grain in a day. This may have been
on a good day. Jonathan Horton, “the boy” and their horses threshed and winnowed far less,
averaging about ten bushels over two days. It is no surprise that introduction of a practical
mechanical threshing machine in the middle 1840s caused farmers to abruptly move away
from methods that had remained virtually unchanged for thousands of years. For reasons
explained in Chapter 6, machine threshing was generally a late summer activity. Still, some autumn and winter threshing continued to occur after the 1840s. For example, Benjamin Conklin threshed rye over seven days in February 1860, an indication that this process preceded by hand. It is likely he did this by flail for two reasons. The first is that fast and efficient as they were, threshing machines damaged up to 10 percent of the grain kernels to a degree that made them unsuitable for use as seed. Treading out also damaged some of the grain and ground in dirt and manure. The flail resulted in higher quality threshing such as would be necessary for seed, and it seems likely that some farmers saved their best grain for winter and then threshed it out themselves for seed.\(^{30}\)

Another possible reason for the persistence of hand threshing is that flail threshing preserved straw, better than by treading or machine. Wheat and oat straw served as bedding, thatch and even fodder. Rye straw had an even greater value because clean and unbroken it could be used to make straw hats, paper bags and twine and numerous sales of rye straw appear in farm records. For example, Benjamin Conklin saved the rye straw after threshing by hand in February 1860, pressed and sold it later that spring. So it is not unreasonable to surmise that even when they adopted mechanized threshing, some farmers still fell back on the old ways when necessary.\(^{31}\)

Through the middle 1840s, farmers sowed grain in autumn and spring, harvested it in summer and stored it away until winter. In December and January, usually after slaughtering, they turned their full attentions to threshing. In the New York City region this meant using oxen and horses, or a wooden hand tool called a flail. The methods resembled those used in the ancient world, relying on patience and the wind. Threshing took place in
the winter months because weather conditions made it easier, and because this time of year best fit the seasonal work schedule.

Another important task commanding the attentions of men and hired farm hands from the end of the harvest through spring planting was maintaining a supply of wood for fuel. Although coal stoves were introduced in the 1830s, and some farm families eventually purchased them, they did not necessarily discard their wood stoves until late in the century. Furthermore, through mid-century, cutting firewood continued to be “one of the most profitable occupations of a farmer.” Markets existed in New York and other large cities and towns with steam transportation companies and in the local neighborhood. The winter months were also a time for felling trees from which rural craftsmen hewed tools or cut for later use as fence posts or saw logs. Farm diaries give modern readers a sense that men truly enjoyed working in the woods. Bright, sunny days, even cold ones, were ideal for working in the woods, the silence of forest broken only by the chop of the axe and the whirr of the bucksaw. Men seldom worked alone in the woods because of the labor required and potential dangers. Like the autumn traditions of mowing salt hay and pressing apple cider, fathers, sons and other male relatives worked in the woods together. “Cutting off Road I and the Boys Fine Day” wrote Alfred Cutting in January 1870.32

Like other aspects of farm work, the rural lumberjack possessed certain skills. Felling tall trees with an axe in a way that they would land just so did not occur by luck. The ability to recognize different species and know their most appropriate uses was important knowledge passed down through the generations from father to son. Nor did age limit enjoyment of the woods. Each winter until his death in 1853, at age sixty-five, Noah Youngs cut cordwood. For example, in January 1852, Youngs and two other men spent five full and
three part days cutting pine and "dry wood" near his farm. Due to the tough nature of this work, farmers generally spent no more than two consecutive days cutting or sawing wood. When Benjamin Conklin cut and hauled wood by himself for 4 out of 5 days in the winter of 1859 he injured his back and "could do nothing... but take care of stock."^^

Fallen trees were limbed, sawed into lengths with a bucksaw and hauled home in a sled, ox cart or horse-drawn farm wagon. Depending on whether the family used only a fireplace or if they also owned a wood burning stove it was cut into even smaller pieces and stacked it away in a shed adjoining the house. The importance of wood lots merited them special mention in farmers’ wills. In those cases where landowning husbands passed on before their wives, widows inherited use rights to the wood lot, but long-term ownership issues were settled by dividing this property among their children, male and female, married and single. For example, Essex County farmer Jacob Vail left his daughters Harriet, Altha and Mary, 1½ acres of woodland “which they are only to have the wood that’z upon it... as long as they remain single” but also “the 20 acres of woodland which I purchased from John Bradley, [and] also a wood lot I purchased from Thomas Terry” divided equally “for them & their heirs forever.” Families treated woodland with the same respect as for salt meadows. For example, Henry I. Westervelt, who had bequeathed to his son and daughter rights to a “brackish meadow,” also gave both children forested land totaling forty-three acres. In addition, Westervelt willed a five acre wood lot in the to his grandson Cornelius.^^

Cutting wood for fuel, for tools or building supplies is a year round activity, but a relatively minor one in every season except winter. This is because so much wood was consumed for fuel in winter, and also because wood cutting fit into the daily winter work schedule of the farmer. Like threshing it was not time sensitive and fit in between other
tasks. Farmers cut wood for their own use, and also for sale, locally and in New York City. They also cut trees for fencing or for building needs.

When they were not cutting wood, farmers amassed quantities of natural fertilizers. The ability and time to acquire natural fertilizers depended on the weather. Snow, ice and freezing temperatures deterred farmers from engaging in this work during severe cold since the acquisition process usually involved getting wet. All farmers and gardeners obtained fertilizer supplies in the spring. Indeed, it was a central activity of that season. Still, collection as a winter activity is important because it was the only time of year that they collected seaweed, muck and, in New Jersey, marl.\textsuperscript{35}

Seaweed, also called kelp or colloquially, “drift” has been used for years by farmers living near the Atlantic coast. Writing of Long Island, one nineteenth-century source claimed:

Many of the proprietors, by the aid of grass produced by the meadows and islands in the South Bay, and the sea weed that drifts on the shores, have rendered their farms quite productive, especially in grain.\textsuperscript{36}

In the eyes of practical farmers the greatest advantage of “drift” is that it lay on the beach, free for the taking, costing only the time it took to obtain. For those living nearby, the opportunity was irresistible. For example, on a single day in 1871 Suffolk County farmer Gilder Conklin brought in twenty-three cart loads of the marine plant. Staten Islander Joseph Seguine collected it from the convenience of the dock on his farm. Collecting drift also involved off farm travel to the shore, and some men looked seemed to forward to getting this perhaps because of the strong maritime heritage of the population and the large number of fisherman-farmers. A similar motivation is visible in the autumn salt hay harvest. For example, Selah Wicks, owner of the \textit{Hurricane}, harvester of salt hay, and one who frequently
traveled off his farm for the slightest reason fits this description. For example, on 1
November 1855 Wicks "went after seaweed but got lost in the fog" and ended up "catch[ing] some clams." A week later he "went after sea weed and laid out all night," the only reference to this being an all-night activity. Frequent references to digging clams and heading to the beach indicated that for many farmers, the sea held an immense attraction.37

Upon carting drift home, farmers generally forked it into animal pens. For example, twenty-two year-old John Bergen "carted manure out, and drift in, the middle pen" on 2 December 1847. The intended recipients of the drift, hogs, rooted through the weeds. Ezekiel Combs, correspondent to the New Jersey Farmer, reported that farmers on the Jersey shore actually fed the seaweed to their hogs, adding as much as three feet to the pen every two weeks. Others carried drift directly to the fields, or composted it. A geological survey of the state of New Jersey made in 1868 noted that farmer Thomas Bell, who lived near the town of Squan, spread 100 loads of seaweed and manure directly on his fields. Farmers continued to use the marine plant late into the century, knowing it was unadulterated, cost them nothing and that it worked to rejuvenate the soil.38

Farmers also mined natural fertilizers from the ground during winter. Like seaweed, a primary advantage of mined resources is that they cost only the labor of extraction and if done by the proprietor of the farm, were free. They mined muck and marl from ponds and coastal wetlands and subterranean deposits. The greatest proponents of mining came from the advocates of improved agriculture, men like "James Neilson, Jr., of New Brunswick . . . a true gentleman farmer with advanced ideas." These proprietors could afford to hire others to dig, and to experiment with homemade compost concoctions. For example, Charles Henry Hall of Manhattan hired workers to draw mud from flats along the Harlem River which,
when mixed with lime and horse manure amounted to 8,000 loads of fertilizer—enough to cover 40 acres of land! Surely, some owner-operators of modest means dug their own mud, but this must have been such a distasteful job that the savings in labor did not make it worthwhile. In central New Jersey some farmers hired workmen to dig up deposits of greensand marl. For example, Monmouth County farmer Robert Drummond hired a team of men to dig and haul marl for him in February 1850. Men of more modest means who believed in the benefits of the New Jersey marl scraped off the topsoil and dug it out of water-filled pits with “spades and grubbing hoes.” Some men carted it up to twenty-five miles before they spread it broadcast at five to forty wagon loads per acre. Farmers not owning land in the belt paid landowners by the bushel to extract the mineral-rich soil until it was just too cold to dig, or until the pits filled with water making additional excavation impossible. Beginning in the 1850s, railroad companies with steam excavating equipment began to establish themselves in central New Jersey. They could remove much more marl than a man with a shovel, at such a low cost, that incentive to dig by hand evaporated.39

Finally, farmers filled their spare time during the day with an assortment of tasks put off until after planting and harvest activities. Some winter tasks were performed on a periodic basis throughout the year, such as cleaning and oiling harnesses, which every farmer did once a season. Beyond these periodic tasks, winter work ranged from repairing tools to home construction projects.40

Farmers made many of their own tools and fashioned replacement parts. For example, Isaac Oakley spent a full day making an ox yoke out of basswood with his friend and neighbor Armos Barger. Coastal farmers made fishing nets in the winter. As participants in summer fishing crews, winter and early spring became the time to make and repair their
nets. They “knitted” nets in pieces, the most fundamental being what one farmer called a “square mesh.” The men tied, or “knotted” the “meshes” together to form a section of net. Working on such a project over the course of a week in December 1831, Horton made “sein at 128 meshes width and knit in the day and evening 30 times across it and tied 400 knots.” Later on, fishing crew congregated to join the separate pieces of net. Farmers also repaired broken equipment over winter and finished small construction projects. These ranged from replacing the thatch on farm outbuildings with fresh sedge, to building and raising hay barracks. On Thanksgiving Day, 1847 at the Flatlands farm of John Bergen “All hands [gathered] on the shore to raise the boathouse, got it about square, blocked it with stones.”

During the early 1860s Alexander Cameron took advantage of warm weather to dig the cellar for a new barn, while other farmers worked on their houses.41

Winter work also included a certain amount of whiling away time in the barn or shop, while others worked on sleighs and boats. Meanwhile, some men and women made baskets and clothing in the winter months. For example, “Old Frank,” who lived near the Kings County farm of Adriance Van Brunt agreed to make fifty baskets at three shilling each for his neighbor over the course of the winter and spring of 1829. This totaled nearly $18 for 3 ½ months of work, no small sum considering that a farm hand made five to seven dollars per month. Staten Island farmer Alfred Cutting also made and repaired baskets during the winter.42

Families also worked out of their homes. Women made clothing. New Jersey farmer Rebecca Vail engaged in what she called “suthern work,” making coats which she sold to a local storekeeper who furnished the supplies. Staten Island farmer Mary Cutting made shirts. Cutting’s husband and sons picked up the shirting fabric in New York City, and Mary (and
sometimes Alfred assembled them. Her husband or sons carried them back to Manhattan and returned with another set. For example, on 12 February 1879 Alfred Cutting went into New York on business and returned home the next day with eight-dozen shirts. On the fourteenth, Alfred and Mary finished a dozen shirts. Mary worked steadily on the pile, with Alfred pitching in again on the eighteenth and twentieth. By the 28 February all ninety-six shirts were complete and Cutting headed off "to New York with Shirts."^43

Shoveling snow is one final important, irregularly-timed winter job. Farmers and gardeners living outside municipalities cleared paths on their own to the well, the barn and the road. Where cattle and pigs ran outside, under little or no cover, they also had to "shovel all day to make the livestock more comfortable." When snow drifted, or after record snowfalls the men of the household and any hired hands went out to "break" the roads in their neighborhood. For example, on 8 February 1836 James Hawxhurst spent two days opening the local road after a storm dropped three feet of snow in the lower Hudson Valley. Winter, unlike any other season, provided plenty of time for farmers to complete "odd jobs" that is, tasks that occurred at irregular times or fit in between other more predictable tasks like slaughtering or threshing. These included building repair, work in the barn or cellar, or at the pits sorting root crops. Women and men also made clothing for sale, and also baskets and tools.^44

Of the four seasons, winter is probably the most disjointed in terms of specific tasks. December involved considerable work: slaughtering, threshing and cutting wood. After the first of January, however, agriculture-related activities (except in greenhouses) slowed considerably. Families made trips to visit relatives or caught up on odd jobs. They marketed hay, potatoes and grain. But the rush that sometimes seems so apparent in other seasons was
absent in winter. By mid-February agriculturists located in the most temperate portions of
the region were already thinking ahead to spring. Gardeners hoping to cash in on the early
vegetable market ordered seeds and manure and made plans for hot beds. Most families,
however, whether farming or gardening, waited for the fields to clear of snow and the ground
to thaw. For them, winter, and the agricultural year ended quietly, but spring and another
year were just around the corner, and full of promise.
Notes

1 Glass window sashes made up the majority of the cost of the frames. Hotbed frames cost from $1.50 to $4.50 per foot in the middle nineteenth century. Leaving frames unattended overnight chanced disaster. On January 5, 1835 with the outdoor temperature −2, a pane of glass fell out of one of the Floy greenhouses. Had this not been discovered the entire house would have been destroyed. For a description of the urban gardening clientele

2 New York City resident Philip Hone commented that “the sweat of the brow of New York all runs into the pockets of the farmers.” Allan Nevins, ed., The Diary of Philip Hone, 1828-1851 (New York: Dodd, Mead, 1936), 53, 185. On nuisance industries see Binford, The First Suburbs, 161-62; Ernst, Immigrant Life, 70; Rosenzweig, Park and the People, 75; Industries located on the outskirts of cities provided employment for the local population. For a more in-depth analysis of these patterns in the New York City Region, see Chapter 2. The assembly of clothing in the home by women is well known and immigrant gardening women probably participated in this trade during winter. Ernst, Immigrant Life, 18, 67-68; New York Farmer (January 1835): 7.

3 Grant Thorburn, Forty Years’ Residence in America (London: James Fraser, 1834), 268; New York Farmer (January 1835): 7; For Lewis Tappy and his descendants see New York City Directories, 1821-1859; “Mrs. Tappy” is also one of many petitioners “having Vegetable Stands in the Tompkins Market” Petition of W. Farrington and Others, 15 March 1847 City Clerk’s Papers, Markets Folder, Municipal Archives and Records Center.


A similar challenge is faced by persons who place house plants near sources of radiant heat in winter. The plants quickly dry out and the tips of the leaves turn brown. Brooks, *Diary of Michael Floy, Jr.*, 124.


Ulysses P. Hedrick, *A History of Agriculture in the State of New York* (1933; reprint, American Century Series New York: Hill and Wang, 1966), 220; Diary of Jane Ursula Merrell Keteltas, 7 December 1855, Box 1, Folder 1.1; Diary of Adriance Van Brunt, 1 December 1828, New York Public Library; Ruth Velsor to Elizabeth Van Cott, 3 December 1860, 8 December 1862, Box 5, Folder A, Long Island Studies Institute, Hofstra University,


15 Ruth Velsor to Elizabeth Van Cott, 24 November 1862. For similar sentiment see Ibid, 3 December 1860.


17 Diary of Jane Ursula Merrell Keteltas, 12 December 1855; Journal and Account Book of James Hawxhurst, 1 December 1827, Manuscripts Collection, New York Public Library. Alexander Cameron required the assistance of 2 regular and one day laborers. Diary of Alexander Cameron, 16 December 1863; Diary of John C. Bergen, 30 November 1846, Brooklyn Historical Society; Isaac and Jane arrived two days after the slaughtering, but on the same day that Conklin salted the meat. Heavy snowfall the previous day may also have delayed their arrival. Benjamin F. Conklin, 6 January 1859, typescript, Hallockville Museum Farm, Northville, New York. On the farm of Adriance Van Brunt, A.C. Van Brunt, the diarist's nephew, and a G. Brown were present to help with the hog slaughtering. Diary of Adriance Van Brunt, 1 December 1828.


19 Account book entry dated 18 December 1852, Willits Family Papers, Long Island Studies Institute, Hofstra University, Hempstead, New York; Journal and Account Book of James Hawxhurst, 1 - 2, 25 December 1827; Noah Youngs Daybook, 4 November 1842, 30 November, 1 December 1849; Diary of John C. Bergen, 14 December 1846; Ruth Velsor to Elizabeth Van Cott, 1 January 1862; Diary of Gilder S. Conklin, 6, 8 February 1872; Farm Account Book of John H. Wicks, 15 December 1844, Huntington Historical Society, Huntington, New York; Halyoake Farm Diary, 11 December 1870; Diary of Adriance Van Brunt, 15 December 1828.

20 Henry Searles Almanac, 3 April 1857, Oyster Bay Historical Society, Orient, New York mentions that his family consumed the last of their sausages for the year, and on 13 October
1858 the last ham. Journal and Account Book of James Hawxhurst, 2 December 1827, 3 December 1828; Diary of Selah Wicks, 20–21, 28 December 1855; Diary of Benjamin F. Price, 27–28 December 1879, Suffolk County Historical Society, Riverhead, New York; Halyoake Farm Diary, 29 January 1870; Account Book of Alfred Cutting, 29 November, 3, 7 December 1870, 9, 12 December 1878. Many persons waited until they cut up the carcass to obtain salt, probably to avoid purchasing too much or too little. Diary of Adriance Van Brunt, 1–2 December 1828; Diary of Benjamin F. Conklin, 6 January 1859, 13 December 1860, 18 December 1870.


Many families waited until January to slaughter their cattle. In three diary entries cattle dressed out weighing 738, 595 and 586 pounds. Jonathan Horton Diary no. 318, 26 December 1831, Suffolk County Historical Society, Riverhead, New York; Journal and Account Book of James Hawxhurst 25, 30 December 1827, 24 December 1828; Diary of John C. Bergen, 14 December 1846, 23 December 1847. Rising beef prices may also have effected the decision to sell live or dressed. Halyoake Farm Diary 15, 22 September, 21 October 1870; Ruth Velsor to Elizabeth Van Cott, 1 February 1862. Henry W. Wickes paid John Howell $1.25 for ½ day “killing beef” and $1.25 for 2/3 day “killings hogs.” Daybook of Richard Willits, 8 December 1863, Willits Family Papers, Long Island Studies Institute, Hempsted, New York. High prices encouraged many farmers to sell their cattle live to dealers or butchers, or to sell the animals as calves and purchase barreled beef. Diary of Adriance Van Brunt, 15 December 1828.


29 McClelland, *Sowing Modernity*, 185-87; Inventory of the Estate of Joseph Wilson, Newark, New Jersey, 8 November 1854, Inventory 14643G 1854, New Jersey State Archives, Trenton; Jonathan Horton Diary, 13 December 1831.

30 McClelland, *Sowing Modernity*, 165-67, 174-75, 183-84; Hurt, *American Farm Tools*, 68-69; Jonathan Horton Diary, 1, 6, 9, 10, 13, 29, 30 December 1831. Some winter threshing was performed mechanically. See Noah Youngs Daybook 6-7 December 1849. Diary of Benjamin F. Conklin, 7 February 1860; Danhof, *Change in Agriculture*, 226. For example of what appears to be winter threshing by flair, see Daybook of James S. Cory, 21-22 December 1840, Stuart C. Smith Collection, MG-19, New Jersey Historical Society, Trenton; Diary of Alexander J. Cameron, 15 January 1864; Diary of Samuel Megie, Jr., 27 January 1862.

31 Hedrick, *History of Agriculture*, 303; Diary of Benjamin F. Conklin, 27 March 1860; Account Book of Alfred Cutting, 21 December 1878.

33 Noah Youngs Daybook, 1-31 January 1850; Diary of Alexander J. Cameron, 2 April 1861: Diary of Benjamin F. Conklin, 31 January, 1-8 February 1859.

34 Account Book of Alfred Cutting, 17 December 1850, also regular entries in months of January and February, 1870; Jonathan Horton Diary, 26 March 1831; Diary of Alexander J. Cameron, 10 December 1861, 2 October 1863, plus various entries in the month of January, 1865; Martin, *The Standard of Living in 1860*, 91-2; Diary of Samuel Megie, Jr., 9 January, 4 March 1862; Diary of Gilder S. Conklin, 15 February, 22 October, 5 December 1868. The words “cut,” “saw,” and “split” appear to be interchangeable terms, and strictly male tasks. Diary of John C. Bergen 17 January 1846; Benjamin F. Conklin, 10 May 1873; Last Will and Testament of Jacob Vail, Rahway, New Jersey, (#15062G 1857) New Jersey State Archives, Trenton, New Jersey; Last Will and Testament of Henry I. Westervelt, Hackensack, New Jersey, (#5496B 1859) New Jersey State Archives.

35 Bridgeman, *Young Gardener’s Assistant*, pt. 1, 149-50.


37 Diary of Henrietta Terry Conklin, 25 November 1871, typescript, Suffolk County Historical Society, Riverhead, New York; NYSAS, *Transactions* 3 (1843), 461; Diary of Benjamin F. Conklin, 11-12, 22 December 1855, 21 January 1859; Noah Youngs Daybook, 7
October 1841; Diary of Selah Wicks, 1, 7 November 1855. Wicks collected seaweed on 1, 2, 3, 7, 10, and 16 November, and again on 17 December 1855.

Diary of John C. Bergen, 10 December 1846, 2 December 1847; Diary of Benjamin F. Conklin, 19 December 1860; New Jersey Farmer (July 1857): 358; Cook, Geology of New Jersey, 1868, 491; Russell, A Long, Deep Furrow, 388-89; Richard M. Bayles, Historical and Descriptive Sketches of Suffolk County (Port Jefferson, New York: W. Overton, 1874), 369; Diary of Gilder S. Conklin, 9-11, 14-16, 18 December 1868.


Diary of Benjamin F. Conklin, 28 December 1855; Diary of Benjamin F. Prince, 1-31 January 1880; Gilder S. Conklin spent 4 days at work in the barn in January, 1868 and 3 in February, and he spent 1 day working in the cellar. Diary of John C. Bergen, 2 January 1847; Diary of Alexander J. Cameron, January 1863.

Diary of Isaac Oakley, 2 February 1872; Noah Youngs Daybook, 21 February 1838, 22 February 1844, 1-31 January 1845; 12, 19, 21, 24 January 1849; 15 January, 18-19 February 1850; Jonathan Horton Diary, 5-6, 13-17, 19, 24 December 1831; Diary of Benjamin F. Conklin, 26 November 1854; 15 January 1859, 16 February 1860, 14 February 1880; Ruth Velsor to Elizabeth Van Cott, 22 February 1861; Diary of Adriance Van Brunt, 12-13 January 1829; Diary of John C. Bergen, 10 December 1846; 25 November, 10 December 1847.

Diary of Benjamin F. Conklin, 20 November 1855, 1 December 1860, 15 February 1873; Noah Youngs Daybook, 30 December 1844, 26 January, 5 December 1849; Diary of Adriance Van Brunt, 16 January 1829; Account Book of Alexander Cutting, 16, 22 December 1870, 24 January 1879.
Joyce Wagner, 78; Diary of Rebecca Vail, entries from February – May 1847, New Jersey Collection, Alexander Library, Rutgers University, New Brunswick, New Jersey; Account Book of Alfred Cutting, 31 October 1878, 8, 13, 20 January, 11 12-14, 18-20, 28 February 1879.

Diary of Selah Wicks, 6 January 1856; Diary of Adriance Van Brunt, 23-24 February 1829; Diary of Garret S. Baxter, 18 January 1830, John Baxter Papers, Brooklyn Historical Society; Diary of Benjamin F. Conklin, 4-5 January 1859; Journal and Account Book of James Hawxhurst, 12 February 1836.
CHAPTER 9. CONCLUSION AND RETROSPECTIVE

A range of options exists for interpreting the nature of changes in agriculture in nineteenth century America. The most contentious issue in this debate concerns the "readjustment" or "transformation" from subsistence farming to commercial agriculture. As with many historical events, scholars are in general agreement that agriculture underwent significant changes in the middle nineteenth century. They disagree in deciding which of these changes is most important and what brought on the transformation after 200 years of relative stability. The reasons most frequently cited (for both) include the development of faster modes of transportation, rising prices, an expanding domestic market, the invention of machines to replace human laborers and fresh competition from newly established farms in the West. Scholars believe that, depending on location, the transformation to commercial agriculture occurred in the northern states between 1810 and 1850.

While providing keen insight into the past, this historiography suffers from some important deficiencies. First, the transition to commercial agriculture occurred in the New York City region in the eighteenth century, far earlier than for the rest of the northeast. Any discussion of nineteenth century farming activities in downstate New York and northern New Jersey therefore relate to the activities of commercial, not subsistence agriculturists. Second, scholars present cities and agriculture as two mutually exclusive entities. Agricultural historians leave out the city for the farm, while urban historians assume that nothing of importance preceded their cities. Third, where urban agriculture and eastern farming are depicted, the models used to interpret change rely on flawed assumptions. Some scholars reference Thünen's model of agricultural intensity to explain the relationship between cities...
and their hinterlands. While useful as a visual aid, this model breaks down in actual situations because it places emphasis on distance from a single market and assumes widespread rational economic behavior, while discounting variation due to environment and culture. A second model of development, found in studies of Northern and Eastern agriculture, depicts change in the context of Western environmental and economic conditions where grain (wheat) culture was the most important crop and certain technological improvements necessary for successful farming. Northeastern agriculture followed a similar, but separate trajectory.

This study addresses these historiographic deficiencies by taking an agrarian perspective on rapid urbanization in the vicinity of New York City between 1820 and 1870. The dominant feature of agriculture in this region is the existence of three separate farming systems, each with its own set of characteristics. These systems emerged after the year 1815 from the single system of mixed farming that dominated the rural north in the eighteenth and nineteenth centuries. The emergence at this time is attributable to rapid, non-farm population growth, rising land values, the increasing availability of urban waste products, introduction of new forms of transportation, and western competition along certain lines of agricultural production. It avoids the temptation of making too strong a connection between agricultural change and distance from a central marketplace. Distance is important, but a better method of explaining urban influences on agriculture is to compare farms across space and time. The model used here, which describes three “farming systems,” is based on the characteristics of agriculture and the region’s agrarian population. Households fall into each category, regardless of their distance from Manhattan, although distance is an important component.
In the *mixed* agricultural system farmers raised livestock, grain, hay and orchard crops. Farm family members represented older immigrant ethnic groups. They owned the land they worked and sought wholesale and retail markets. In the *near-urban* farming system, agriculturists possessed ethnic and economic backgrounds similar to families in the mixed system. They also engaged in similar productive activities, but with the addition of a specialized sideline. Recognizing the benefits of accessibility to urban markets, these families added either fluid milk production or commercial horticulture to their mainline economic activities. Over time, as they gained experience and distribution and as marketing structures improved, specialization increased and these “sidelines” grew to more substantial portions of a farm’s total output. Many (but not all) near-urban farmers eventually realized tremendous capital gains in the value of their land. Encouraged, cajoled, or forced by would-be purchasers, they (and their heirs) sold off piecemeal or in full, to real estate speculators. Once sold the land passed out of its productive phase, but while waiting for the right time to sell or build, a period sometimes years in length, the new investor-owners leased the land to tenant farmers. Located only in the vicinity of cities, and therefore possessing the strongest relationship to urban proximity, these tenants participated in the *urban agricultural* system. Urban agriculturists differed in many respects from other farmers in the region. They were usually first generation immigrants and often used agriculture as a temporary means to sustain a living. Their work was labor intensive and relied on low cost resources. They engaged in the production of highly perishable products and consequently sold in retail and niche markets.
For each of these systems family labor assumed a high level of importance. Extended family members also shared tools and labor, and frequently attended markets together. This communal reliance permitted them to operate small units with low overhead. Where family labor proved insufficient, proprietors hired help on a long-term basis. Low labor costs reduced demand for improved implements and agriculturists in the New York City region could exhibit greater selectivity in choosing only the best machines for their farms and gardens. This trait earned the scorn of progressive farmers and improvers of agriculture who, rather than see them as careful consumers judged them as cheap curmudgeons.

Despite the fact that by 1860 over 1.5 million people lived in the New York City Region, agrarian life retained a strong seasonal rhythm. Farm and gardening families lived by two different calendars, one that recorded the passage of days, months and year and a more important, unwritten calendar that marked time by the seasons. Although an increasing portion of rural Americans began to think in terms of the passage of mathematical units of time, the seasonal calendar remained important throughout the nineteenth century. Their agricultural year ran about three months behind the official calendar year, beginning in spring (March) and it ending in winter (February). On farms and in gardens across the New York City region work activities such as plowing, planting, weeding and harvesting, plus a full complement of household and social activities took place according to season, and in this way agrarian Americans viewed the passage of time. Yet many chose not to insulate themselves from the non-farm world, and adhered to dual systems, an impressive feat given their numerical status as minorities. These are the essential characteristics of agriculture and farm life in the New York City region.
Although disagreement is plentiful regarding when and how the era of transition from subsistence to commercial agriculture began, scholars are in greater agreement about when it came to a close. They pinpoint a relatively narrow period of time of less than fifteen years between the outbreak of the Civil War and the depression of 1873. For the New York City region this period also marked the end of an era. Whereas in 1820 urban population growth was the most important factor in agricultural change, by 1870 the national economy had taken its place. This had important ramifications in the political realm (and elsewhere) during the last thirty years of the nineteenth century. The Civil War served to tear some of this away, as did the sum total of fifty years of social, economic and agricultural change. The major proceedings of the 1820-1870 period also set the stage for the important political events that would rock agrarian America for the next thirty years.

For the first half of the century, a sort of buffer protected farmers and gardeners against extra-regional competition. It existed in the form of limited transportation facilities, locally oriented market structures, labor surpluses and comparative economic advantage in terms of production. These protections evaporated slowly, as early as the 1840s, but with little real effect for more than thirty years. For example, through 1862 regional farm wages remained low enough to discourage adoption of more than a few improved implements. But during the Civil War wages rose to unprecedented heights, and even though they fell after 1865, they never again reached such favorable levels relative to price. During the war, agriculturists reconsidered investing in improved implements and, in the post-bellum era they continued to trade increased costs for greater efficiency. Influenced by newly founded institutions such as the agricultural colleges at New Brunswick (1864) and Ithaca, (1865) this post-war
generation was educated to accept of the substitution of labor with capital. They purchased more improved implements, used brand name fertilizers and newly developed chemical pesticides. Such measures served to increase the costs of farming and encouraged specialization and the assumption of debt. This made families more susceptible to low prices, and during repeat deflationary episodes after the Civil War, farmers felt the negative effects more strongly than ever in the past. One result of this condition was the beginning of an extended and often vicious political debate over the role of government in making capital available to farmers.²

Railroads also became vehicles for breaking down the protective walls that surrounded New York and New Jersey. They introduced a new level of national competition along new lines of products on a level that dwarfed a similar event brought on by the Erie Canal fifty years earlier. In the 1830s and 1840s, railroads allowed producers in all parts of the region to reach city markets. Little extra-regional competition existed, but with the connection of Eastern lines to Midwestern ones in the 1850s, the stage was set. The Civil War spared Northeastern farmers, buying them twenty years before receiving the full force of national competition. During the 1860s, as the nation’s attentions were diverted to the war effort, advancing Union forces reconstructed standard gage track deep into the heart of the Confederacy. Post war financiers, both Yankee and Southern, continued building track through Dixie well into the 1890s. Meanwhile, 1,500 miles to the west, work progressed on two transcontinental railroads, the first of which was completed in 1867.³

The decade of the 1870s then, was the first in which a nation’s farm products could be sent to its largest commercial cities for consumption or redistribution. A national depression
buffered the effect of the rails for a while, but Ulysses Hedrick, who lived through this era, viewed it as “perhaps the most momentous change in the agricultural readjustment.” In New York, wholesale merchants, already key players in the sale and distribution of foodstuffs reached far beyond the confines of New Jersey or the Hudson Valley for supplies. In fruit, vegetable, butter and beef, the mainstays of agricultural production in the New York City region after 1850, farmers and gardeners faced growing extra-regional competition where little or none had before existed. Before the war, beef cattle, driven from the west and finished on eastern farms, and fruits and vegetables shipped by steamer from Norfolk County, Virginia, failed to threaten entire industries. The distribution systems and infrastructure that functioned well for Northeastern farmers before the war, contributed to the new competitive climate of the gilded age.4

Post-war readjustments forced farmers in the old Confederacy to seek alternate forms of production. Encouraged by exuberant newspaper editors, many saw salvation in northern fruit and vegetable markets. It took some time for this sector of Southern agriculture to become profitable, but Georgia peaches found ready markets in New York in the 1870s, and by the middle 1880s fresh cucumbers and melons passed from commercial cultivation in light of Southern advances. Looking westward to California, a slumbering agricultural giant in the 1870s, farmers there waited for improvements in refrigeration technology and falling freight rates. Both occurred before 1900, although California’s full potential was not reached until long after that date. Shipments of vegetables and other farm products east from the Golden State did begin in the 1870s, but without regularity before the 1890s. Successful experimentation with refrigerated boxcar technology in the late 1860s fueled extra-regional
competition in other areas as well. By 1877 Chicago meat packer Gustavus Swift shipped frozen dressed beef east by rail. As with other forms of perishable freight, it took until the middle 1880s to work out distribution problems, such as the establishment of ice supply depots, but the 1870s marks a turning point for the dressed beef industry.5

Fleeing "gluts," (a new word in the agrarian lexicon) and record low prices, agriculturists found respite in specialization. The mixed farming system withered as agriculturists turned to horticulture and dairying, modes of production characteristic of the near-urban farming system. The 1870s witnessed continued expansion of the milk shed into upstate New York, Long Island and New Jersey. Yet postwar growth transformed the milk business into the dairy industry, and complex supply and distribution problems brought city milk dealers and railroads officials together. In the process producers lost what influence they had in negotiating wholesale prices, and the formerly amicable relationship between seller and buyer eventually soured. Although a group of dairy farmers collectively requested a price increase from city dealers in 1864, significant organization for the purpose of obtaining higher prices did not occur until the "Orange County Milk War," some fifteen years later. Continued efforts were made for better prices and lower freight rates by the Patrons of Husbandry the Farmers' Alliance, and regional organizations. For example, the importation and sale of oleomargarine, a byproduct of the western meat packing industry and cheap butter substitute, brought tremendous protest from New York's rural districts and resulted in the establishment of the New York State Dairy Commission (later the State Department of Agriculture) in 1884.6
This second period of readjustment, which began after the Civil War, had its roots in the prior half-century. Population growth, rising land values, development of inexpensive forms of transportation, and the transition from retail to wholesale marketing shaped agricultural production in the sixteen county area surrounding Manhattan Island. Despite the changes that took place over this fifty year period, certain aspects of agrarian life remained the same. The extended family remained an important social unit, critical to the success of the operation. Family members relied on one another for the exchange of tools and labor, and for business and social relations. Farm and gardening families also continued to live by a seasonal calendar, preparing, plowing, planting, harvesting and marketing by season and tradition. Looking back at the dawn of the twenty-first century, these latter two characteristics are perhaps the most enduring elements of nineteenth century agriculture.
Notes

1 Thünen's representation of agriculture near the hypothetical town is represented by a series of concentric circles. In reality, a tri-colored checkerboard would be more accurate, with examples of each type existing at various distances. More "urban agricultural", than "mixed" squares would be located near urban areas, but no distance would be made up of solely one type.

2 Hubert G. Schmidt, Agriculture in New Jersey: A Three-Hundred Year History (New Brunswick, New Jersey: Rutgers University Press, 1973), 114-15, 132; Ulysses P. Hedrick, A History of Agriculture in the State of New York (1933; reprint, American Century Series, New York: Hill and Wang, 1966), 421-22. Enrollment remained low in the early years of these colleges, but annual lectures on agriculture, required by the Morrill grant, and chemical evaluation of fertilizers, an early function of the agricultural colleges, served to change attitudes regarding the role of government in agriculture. High land prices in the East also encouraged greater capital investment in order for farmers to remain competitive with western competitors who worked less expensive land.


6 The decision of near-urban farmers to specialize in horticultural pursuits is what Marc Linder observed in Kings County after 1860. This even was not the beginning of commercial horticulture; it had been in existence for decades. Cronon, Nature's Metropolis, 245; Schmidt, Agriculture in New Jersey, 185-86, 211; John J. Dillon, Seven Decades of Milk: A History of New York's Dairy Industry (New York: Orange Judd, 1941), 5-18; Leland Spencer, "Evolution of the Milk Pricing System of the New York-New Jersey Market Part 1: The Era of Small-Scale Competition (Before 1880)" Agricultural Economics Research 231 (1968): 24-27, 31-38; Hedrick, History of Agriculture, 425.
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