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# Nineteenth Century Wheat Production in Four New York State Regions: A Comparative Examination

by *Andrea K. Zimmermann*

**M**any articles and books have been written since the publication of Ulysses P. Hedrick's 1933 classic, *A History of Agriculture in the State of New York*, tracing the development of agriculture from its rise in the colonial period to its decline during the 19th century. Of these studies, several present excellent overviews of agricultural transformations in specific areas of New York State, such as the works by David M. Ellis, *Landlord and Farmer in the Hudson-Mohawk Regions: 1790-1850* (1946), James J. Frost, *Life on the Upper Susquehanna: 1783-1860* (1951), and Neil A. McNall, *An Agricultural History of the Genesee Valley: 1790-1860* (1952). Other contributions, mostly articles, concentrate on particular problems inherent in the agricultural system.

Hedrick once wrote in his typically witty style: "It takes as many generations to make a woodsman as it does to make a gentleman." In keeping with the theme of pioneer life, one author had been

prompted to assess the farmer's task of converting thick forests into fertile crop-producing lands.<sup>1</sup> Historians have also analyzed New York's peculiar pattern of settlement and rural society and the rate at which the diffusion of technology spurred the agricultural revolution. Agrarian thought and the formation of agricultural societies and the proliferation of agricultural journalism in New York and elsewhere has also been well documented. Diaries, stemming from the 17th through the 19th centuries, have been gleaned as well, in an effort to grasp details of the status of New York agriculture and the daily routines of farm life.<sup>2</sup> Many of these recent essays and monographs, no doubt, have derived inspiration from the ideas advanced by Hedrick in *A History of Agriculture*.

**A**griculture in New York underwent two critical periods of transformation over the course of the late 18th and early 19th centuries. The first began shortly after the close of the American Revolution in 1790, when New York emerged as one of the leading wheat-producing states in the young nation.<sup>3</sup> It held this supremacy until immediately following the opening of the Erie Canal in 1825. By 1830, the second shift in agriculture had begun and continued until the completion of the Hudson River Railroad at mid-century. New York's agriculture during the last decade of the 18th century moved from being a labor intensive, grain-producing economy to one which became increasingly capitalized and technologically advanced by the middle of the 19th century.

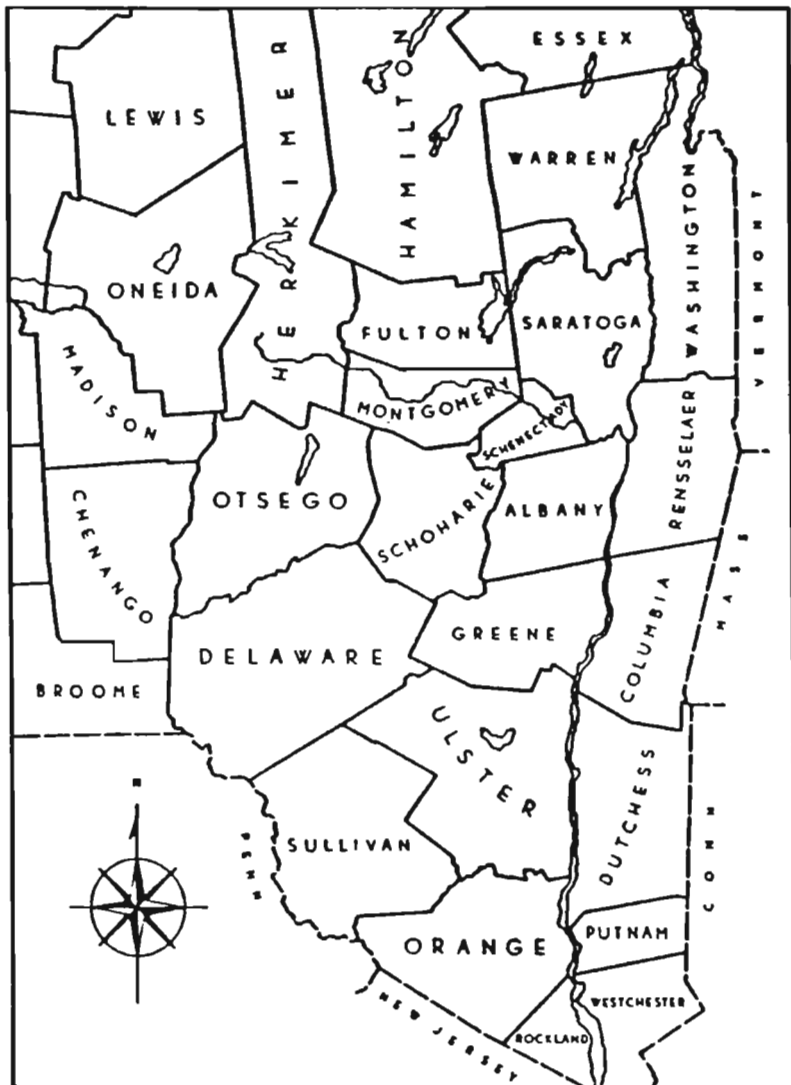
Between 1790 and 1830, wheat was the most important cash crop produced by farmers. Most historians of agriculture have maintained that a precipitous drop in wheat production occurred in the Hudson Valley region after the construction of the Erie Canal. Later in the century, similar declining trends took place in central and western New York, with the building of capillary waterways connecting the Great Lakes with the Hudson River. The principal causes cited by historians for the diminishing importance of wheat after 1830 are consistent soil exhaustion, the invasion of plant killing pests, and shortened growing seasons, all of which contributed to lower wheat yields. These factors, coupled with improvements made in transportation networks such as canals and railroads, signalled the demise of profitable wheat cultivation as vast quantities of the same grain flooded New York from the western United States. Responding to falling yields and subsequent reductions in market value, farmers

turned to raising other crops including barley, buckwheat, corn, hops, oats, and rye to satisfy the demands of the new dairy business and ever-present breweries and distilleries by 1850.

A comparative examination of wheat data reported in the *Census of the State of New York* for the years 1845, 1855, 1865, and 1875 in the Hudson, Mohawk, Susquehanna, and Genesee Valleys reveals novel and surprising results.<sup>4</sup> Figures for both spring and winter wheat are provided in the 1855 and 1865 *Censuses*, but data for spring is lacking in the 1845 listing. Although production levels and wheat yield computations for counties lying within the Hudson (Albany, Columbia, Dutchess, Greene, Orange, Putnam, Rensselaer, Rockland, Ulster, and Westchester), Mohawk (Fulton, Herkimer, Montgomery, and Schenectady), Susquehanna (Broome, Chenango, Delaware, Madison, Oneida, Otsego, and Schoharie), and Genesee (Alleghany, Genesee, Livingston, Monroe, and Wyoming) Valleys have not been weighted, findings indicate that as wheat production crept from the eastern Hudson Valley to the western reaches of the state, isolated increases in output occurred between 1845 and 1875 in the Mohawk, Susquehanna, and Genesee regions. Only the Hudson Valley displayed a steady decrease in wheat production after 1830. This downward pattern in the Hudson correlates with the assertions of historians. However, had Ellis, Frost, and McNall extended their studies into the second half of the 19th century, they would have discovered that the heyday of New York wheat production and its eventual decline were later in the four regions under consideration than they argued. During the 19th century, wheat production reached its lowest level after 1875. Furthermore, between 1845 and 1875, yields per acre had actually risen in the Hudson, Mohawk, Susquehanna, and Genesee Valleys. As wheat yields soared to new highs, total output per region slowly fell as it drifted westward over the thirty-year period. It was Paul W. Gates who labeled the two decades between 1850 and 1870 "the halcyon of New York farming."<sup>5</sup>

Farmers have been traditionally conservative in their response to changed agricultural practices. New York farmers have been especially resistant to adopting new farming techniques. Agriculturalists were not motivated to improve their condition until soil depletion threatened the livelihoods of even the most extensive and once prosperous farmers.

Several reasons can be cited as explanations for the resurgence of wheat growing in the Hudson, Mohawk, Susquehanna, and Genesee Valleys. The county agricultural societies that had flourished in early 19th century New York and their parent state association published



Counties in Eastern New York State. Source: David M. Ellis, *Landlords and Farmers in the Hudson-Mohawk Region: 1790-1850* (New York: Octagon Books, 1967).

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a large body of literature and several newspapers promoting the latest progressive farming methods. Farmers, by the middle of the 19th century, finally integrated into their schedules the use of manures, commercial fertilizers, crop rotation, and superior varieties of wheat to maximize the returns from their lands. The invention and distribution of more modernized agricultural implements such as cultivators, threshers, and reapers reduced by half the time needed for planting and harvesting.

The availability of the reaper and its widespread employment, along with the simultaneous growth of major flour milling centers like Buffalo and Rochester, allowed the Genesee Valley to become the foremost wheat-producing region after 1855, followed closely by the Susquehanna, Hudson, and Mohawk Valleys.<sup>6</sup> Thus wheat production did not begin to wane in most parts of New York State until the last quarter of the 19th century.<sup>7</sup>

No concise history of wheat growing in the state would be complete without at least a cursory survey of some of the circumstances that influenced its cultivation and marketing potential. The geographic location of the land in the four regions being analyzed, settlement patterns, population growth, speculation, and farming techniques all profoundly impacted wheat production throughout the 18th and 19th centuries.

The topography of New York State is varied from one geographic area to the next, as is its climate and soil. The rocky configuration of the Highlands to the south and the presence of the Catskill Mountains in the mid-Hudson Valley—not to mention the Helderbergs to the northwest—were ill-suited for widespread agriculture. This would explain why certain parts of the Hudson Valley were conducive to mixed farming while other sections developed industrially. The western Hudson Valley, for instance, industrialized sooner than its eastern counterpart because of the bountiful deposits of extractive and natural resources. The glacial till soils of clay, lime, and sandstone, abundant throughout all four regions, created an ideal habitat for extensive grain production in the first decades of their occupation. Some writers have implied that pioneers had been capable of determining the fertility of land by its humus and vegetation. Once the fertile ground of the valleys was broken through clearing and cultivation, it was merely a matter of time before laudatory reports describing the richness of the regions attracted eager settlers.

A decade prior to the end of the Revolution, the population of New York was estimated at 163,000 inhabitants. By 1785, just two years after the War, the total number in the state had increased to 238,000. This rose to 346,000 by 1790. Thus New York's population doubled over this twenty-year period.<sup>8</sup>

Some historians contend that the rate of population growth in New York during the first half of the 18th century had been slower than in the neighboring colonies of Connecticut, Massachusetts, Pennsylvania, and New Jersey.<sup>9</sup> The leasehold system which prevailed in the Hudson Valley from the 17th through the mid-19th centuries—first as patroonships under the Dutch and then as English manors—is blamed as the principal deterrent to settlement in the region. Albany and New York City experienced the greatest overall population growth in the early 1700s.

**TABLE I**  
**CENSUS OF POPULATION—HUDSON VALLEY—1790**

ALBANY	13,717
COLUMBIA	27,732
DUTCHESS	36,334
GREENE	7,208
ORANGE	22,809
PUTNAM	8,932
RENSSELAER	22,429
ROCKLAND	6,001
ULSTER	16,297
WESTCHESTER	24,008
TOTAL POPULATION	185,467

Source: *Census of the State of New York: 1855*

Despite the seemingly negative impact of the leasehold system, the 1790 *Census of Population* shows that the Hudson Valley held fifty-four percent of the state's inhabitants. Those areas where manors were present contained a higher percentage of New York's population than those counties where no manors existed. Of the total population of the Hudson Valley (See Table I), seventy-two percent was concentrated in Albany, Rensselaer, Columbia, Dutchess, Putnam, and Westchester Counties in which the leaseholds of Van Rensselaer, Livingston, Phillipse, and Van Cortlandt Manors were in force. The remaining twenty-eight percent of the valley's population was sparsely

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settled in Greene, Ulster, Orange, and Rockland Counties.<sup>10</sup> If the manorial system had been the fundamental cause for the delayed expansion and growth of New York, then why did those counties that were created from manors hold over one-half of the valley's population in 1790? Would not the reverse have been the more likely case? Since agriculture had been the major source of sustenance for the rural inhabitants of 18th and 19th century New York, it was obviously necessary for settlers to establish farms in the most arable regions of the valley regardless of the land's availability through sale or rental. The 1790 *Census* clearly illustrates that population density was greater on the east bank of the Hudson River than on the west due to the presence of prime agricultural land. Other conditions must have existed to justify this polarized pattern of settlement.

During the Colonial period, the leaseholds may have served as a viable vehicle with which to lure settlers who otherwise did not have the means to purchase farmland. However, by the first half of the 19th century, the manors were unquestionably anachronistic and inhibited the Hudson Valley region's capacity to urbanize and industrialize to its fullest potential.

New York Colony before and during the Revolution was nothing more than a vast jungle. Besides the burgeoning cities of Albany and New York, pockets of settlement dotted the Hudson Valley. For transportation, these budding centers were reliant on the Hudson River and the crude, rutted roads that wound snakelike through the woods interconnecting each settlement. No human dared venture too far west of the river during the War, save for a few ambitious explorers, profiteering land speculators, and bushwacking soldiers, for fear of revengeful Indians and wild animals that lurked in the dense forest. Migration to the Mohawk and beyond only began in earnest after the Revolution when peace and stability were restored and enemies eliminated.<sup>11</sup>

Residents of New York in 1790 comprised several nationalities, giving the state a somewhat cosmopolitan character. Individuals of English descent made up fifty percent of the population, although often the Scottish, Irish, and Welsh were classified as English. Those of Dutch, French, and German stock represented the balance of the state's population at that time.<sup>12</sup> These groups dispersed throughout the Hudson, Mohawk, and Susquehanna Valleys. The first wave of New Englanders arrived in New York after the Revolutionary War and eventually moved to the central and western parts of the state.<sup>13</sup> Population growth forced New Englanders to flee to New York between 1790 and 1820. Their strong antipathy toward the leasehold

system drove many to the Genesee Valley where land could be purchased outright in fee-simple. The highlands of the lower Genesee met the agricultural needs of the New Englanders where their crops were protected from the dangers of frost.<sup>14</sup>

The significance of wheat as a commodity for home consumption and trade in New York's history was realized as early as the 17th century when the Dutch West India Company imposed its bolting monopoly on flour ground in New York City mills. Notwithstanding the shortage of labor and the use of primitive agricultural implements, wheat cultivation during the 18th and 19th centuries was more profitable than livestock or dairy farming, both of which required large cash investments. Wheat was first raised on Long Island where it sold for three shillings per schepple in 1678.<sup>15</sup> In the same year, Governor Andros announced that 60,000 bushels of that grain had been produced in the Colony and exported to the West Indies.<sup>16</sup>

The small farm village of Esopus in Ulster County was renowned for its remarkable stands of wheat. A visitor to the Esopus Flats in 1679 described it as a "very beautiful and fertile wheatland which here grows so abundantly that this Esopus is the granary of the whole New Netherlands."<sup>17</sup> The price for Esopus wheat was a half-crown per schepple at New York City markets.<sup>18</sup> Nearly forty years later, Swedish scientist Peter Kalm toured the North American Colonies. During his stay in New York in June of 1749, he travelled by sloop from New York City to Albany. As he neared Albany, he recorded the following in his diary: "Wheat is sowed in the neighborhood of Albany to great advantage. From one bushel they get 12, sometimes if the soil is good they get 20. If their crop amounts to a tenfold yield, they think it a very mediocre one. Many Germans around Albany, living in villages sowe wheat haevily and export flour to New York."<sup>19</sup> Kalm adds that Albany produced some of the finest wheat in New York, second in importance to Esopus and Kingston.<sup>20</sup> The *New York Gazette* in November of 1749 reported that the going rate for one bushel of wheat was six shillings.<sup>21</sup> With the impending revolution, every facet of colonial economic life had been interrupted in the 1770s. Until the mid-1780s, no clear picture of New York's agricultural future developed.

Depending on the region where wheat was planted and in what year, its market value varied as much as the productivity of the ground on which it was raised. New York agriculture did not evolve in an



evenly distributed manner in the Hudson, Mohawk, Susquehanna, and Genesee Valleys during the early 19th century, as a result of the disparity in real estate values, discrepancies in soil fertility, and differences in the length of growing seasons.

Real estate speculators frequently promoted the sales of both un-cleared and improved lands in most areas of New York State. Land jobbers inflated the sale prices of their properties by advertising their yields per acre. The Hudson and Mohawk Valleys in the 1790s had been famous for their potentially high wheat yields, just as the Susquehanna and Genesee were to become in the century to follow.

The systematic tabulation of agricultural data for New York State was not compiled completely until 1845, when the *Census of the State of New York* included such information. Decennial Censuses of 1855, 1865, and 1875 were also taken. The 1845 *Census*, as do the others, lists annual output figures by town and county. Among other crops, statistics for barley, buckwheat, corn, hops, oats, rye, and wheat are reported. For each item presented the following questions were asked: 1) the number of acres improved; 2) number of acres cultivated; 3) number of bushels raised; and 4) the number of bushels harvested.<sup>22</sup> Output levels of wheat for each valley have been determined by adding the total wheat produced by county in each year. Wheat yields have been computed by county and for each region by dividing the number of bushels raised by the acreage harvested ( $Y = \text{Bu}/\text{Acres}$ ). This measure is the best index for evaluating soil productivity.

Between 1845 and 1875, wheat output in the four regions declined by twenty-five percent over the thirty-year period. As discussed earlier in this essay, isolated increases in wheat production were apparent in the Mohawk between 1845 and 1855 and 1865 and 1875, although a noticeable decline took place at mid-century. A similar pattern of output took place in the Genesee between 1845 and 1855 and 1865 to 1875. A forty-eight percent drop in wheat production took place from 1855 to 1865. In 1845, the Genesee grew 2,700,000 bushels of wheat compared to 2,400,000 bushels harvested in 1875. The Susquehanna Valley by contrast, experienced a 201 percent rise in wheat growing between 1855 and 1865. The output rose from 299,000 bushels in 1855 to 901,000 in 1865. A sixty percent fall in output was evident in this region between 1845 and 1855, while a sixty-one percent fall was evident in the Susquehanna from 1865 to 1875.

Only the Hudson Valley consistently fell in wheat production over the thirty-year period studied. This would substantiate the point made by Ellis and other historians that wheat output in the Hudson Valley declined due to the impact of the Erie Canal. The great bulk of grain shipped into the Hudson Valley was brought from the Mohawk, Susquehanna, and Genesee. A resurgence in wheat in the Mohawk and Genesee Valleys between 1865 and 1875 was due to the fact that New York City continued to dominate as the largest grain market in the state even through the late 19th century.

**TABLE II**  
**TOTAL WHEAT OUTPUT BY REGION**  
1845-1875  
(Data is in bushels)

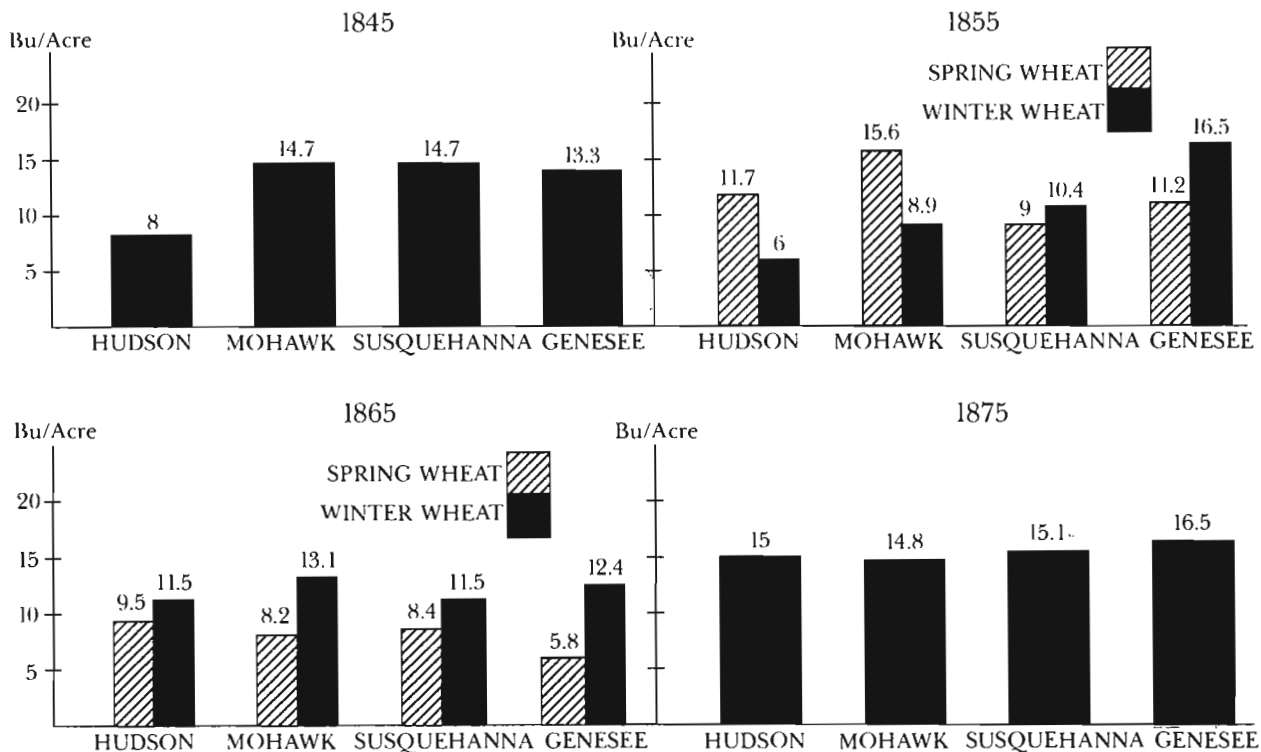
REGION	1845	1855	1865	1875
Hudson	453,332	301,845	216,111	203,700
Mohawk	167,161	170,984	31,758	82,755
Susquehanna	731,652	299,653	901,589	353,068
Genesee	2,707,755	3,205,973	1,673,004	2,401,498

Source: *Census of the State of New York for 1845, 1855, 1865 and 1875.*

The 1855 and 1865 Censuses include figures for both spring and winter wheat for all four regions, which underscores the rise in output in the Mohawk and Susquehanna regions. In 1855, the Mohawk raised 154 percent more spring wheat than it did winter, while the Susquehanna produced 128 percent more of the spring variety. In that year, spring wheat production in the Mohawk amounted to 122,000 bushels as compared to a winter wheat total of 48,000 bushels. The Susquehanna grew 208,000 bushels of spring in 1855 compared to 91,000 bushels of winter. Both spring and winter wheat were combined to determine the total levels of output for the Mohawk and Susquehanna Valleys in 1855 and 1865. The increase in output from 1845-1855 for the two regions may thus be attributed to the heavier cultivation of spring wheat.

The lowest levels of production in all four areas occurred in 1865 and 1875. For example, from 1845 to 1875 the Hudson Valley's wheat output declined by fifty-five percent, the Mohawk by fifty percent, the Susquehanna by fifty-two percent while the Genesee output fell by only eleven percent over the same period. This illustrates the

### WHEAT YIELDS (Bushels/Acre) IN FOUR REGIONS 1845-1875



Source: *Census of the State of New York: 1845, 1855, 1865, and 1875.*

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## Notes

1. Ulysses P. Hedrick, *A History of Agriculture in the State of New York* (New York: Hill and Wang, 1966), p. 6. Harold S. Lamar, "Land Clearing Under Nineteenth Century Techniques: Some Preliminary Conclusions," *Journal of Economic History*, Vol. 22, No. 4 (1962), pp. 484-497.
2. Sung Bok Kim, *Landlord and Tenant in Colonial New York Manorial Society: 1664-1775* (Chapel Hill: University of North Carolina Press, 1978). Gould P. Johnson, "Innovation and Diffusion in Agriculture," *Agricultural History* (July, 1968), pp. 143-187. Donald B. Marti's excellent 1966 Doctoral Dissertation at the University of Wisconsin entitled "Agrarian Thought and Agricultural Progress: The Endeavor for Agricultural Improvement in New England and New York, 1815-1840" led him to publish the following three articles: "Early Agricultural Societies in New York: The Foundations for Improvement," *New York History*, Vol. 48, No. 4 (1967), pp. 313-331; "Agricultural Journalism and the Diffusion of Knowledge: The First Half Century in America," *Agricultural History* (1980), pp. 28-37; and "In Praise of Farming: An Aspect of the Movement for Agricultural Improvement in the Northeast" *New York History* (1970), pp. 357-372; Charles Wolley, *A Two Year's Journal in New York: 1678-80* (New York: Harbor Hill Books, 1973); Daniel Denton, *A Brief Description of New York*, first published in London in 1670; Adolph B. Benson, ed., *Peter Kalm's Travels in North America: The English Version of 1770* (New York: Dover Publications, 1987); Alexander Coventry, M.D., *Memoirs of an Emigrant: The Journal of Alexander Coventry, M.D. in Scotland, the United States and Canada: 1783-1831* (Albany, New York: The Albany Institute of History and Art and the New York State Library, 1978); Roger Haydon, ed., *Upstate Travels: British Views of Nineteenth Century New York* (Syracuse, New York: Syracuse University Press, 1982); Yasuo Okada, "Squire's Diary: New York Agriculture in Transition, 1840-1860," *New York History*, Vol. 52, No. 4 (October, 1971), pp. 396-422.
3. Geoffrey Gilbert, "The Role of Breadstuffs in American Trade: 1770-1790," *Explorations in Economic History*, Vol. 17 (1977), pp. 378-387.
4. *Census of the State of New York for 1845* (Albany, New York: Cornell and Cook, 1846); *Census of the State of New York for 1855* (Albany, New York: Charles Van Benthuyzen, 1857); *Census of the State of New York for 1865* (Albany, New York: Charles Van Benthuyzen, 1867); *Census of the State of New York for 1875* (Albany, New York: C.W. Seaton, Weed, Parson & Co., 1877).  
By "weighting" it is implied that production levels and yields do not reflect the variations in the size of the counties, their respective outputs, nor the percentage of farms devoted to wheat cultivation in each county of the four valleys.
5. Paul W. Gates, "Agricultural Change in New York State: 1850-1890," *New York History*, Vol. 50 (1969), p. 117.
6. Marti, "In Praise of Farming," pp. 355-356; *Census for 1845*; Johnson, "Innovation and Diffusion," pp. 177-179; McNall, *An Agricultural History*, pp. 120-124; *Census for 1875*; T.E. Lamont, "Agricultural Production in New York, 1866-1940," *Bulletin #709* (Ithaca: Cornell University Agricultural Experiment Station, 1941), pp. 3-4; 14.
7. Lamont, "Agricultural Production," p. 14.
8. *Census for 1855*. Recapitulations of population statistics are computed from 1698 through 1855.
9. For a thorough discussion of Colonial New York growth rates, see Michael Kammen, *Colonial New York: A History* (New York: KTO Press, 1978), especially Chapter II; also Kim, *Landlord and Tenant*, Chapter VI.
10. *Census for 1855*.

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# Barns: A Photographic Essay

*by Patricia Beringer and Howard Dratch*



*Beringer-Dratch, 1988*

*Red barn detail, East Kerley Corners Road, Elizaville, Dutchess County.*



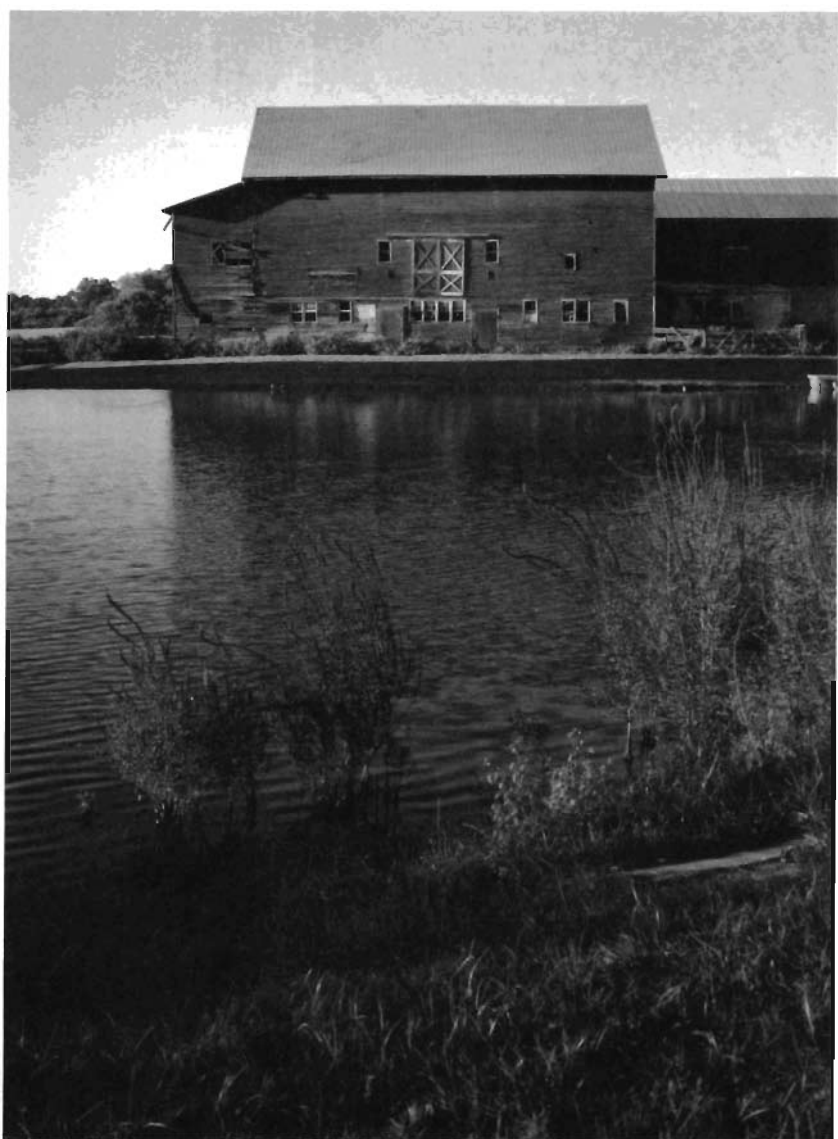
Berringer-Dratch, 1988

*Weathered wood barn with red door, Bearsville, Ulster County.*



Berringer-Dratch, 1988

*Dutch barn, circa 1790, Zena, Ulster County.*



Berringer-Dratch, 1988

*Red barn, East Kerley Corners Road, Elizaville, Dutchess County.*



Berringer-Dratch, 1988

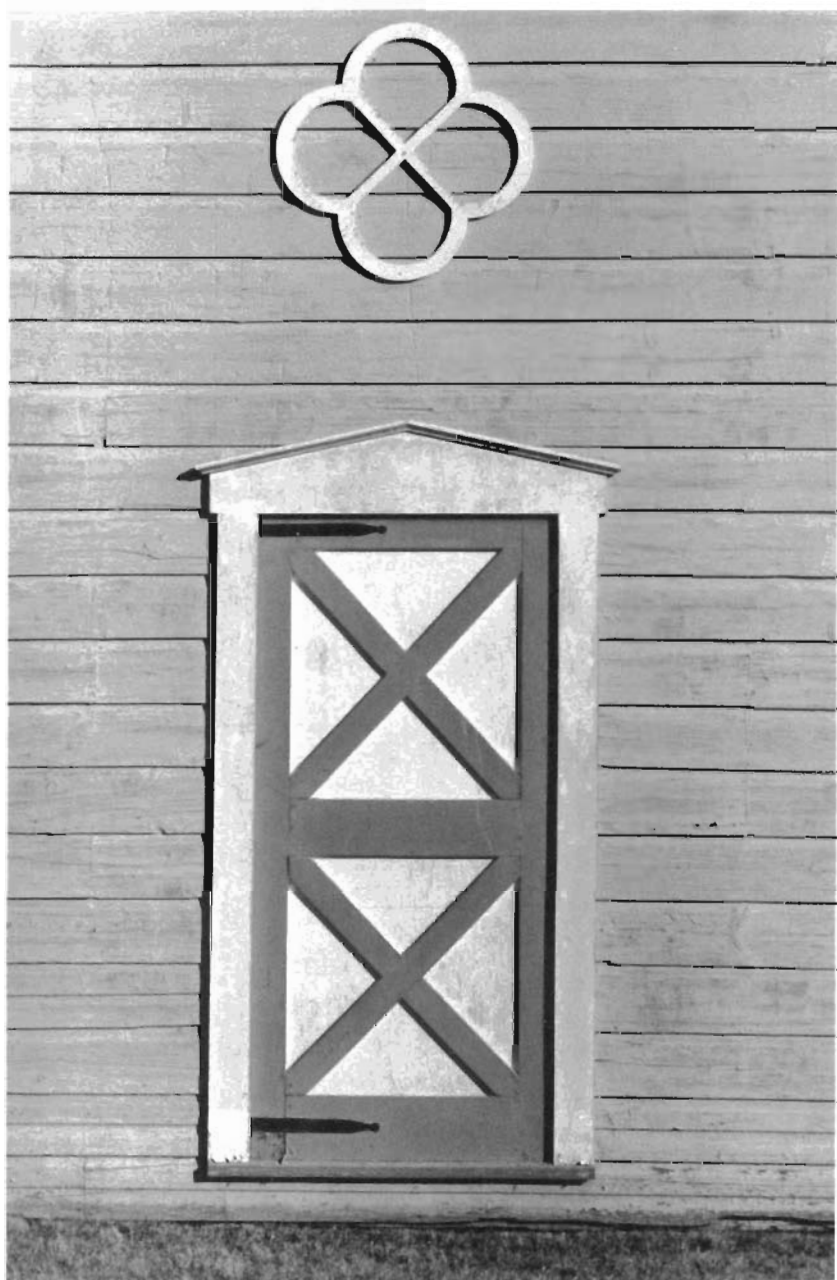
*Blue barn, Staatsburg, Dutchess County.*



Berringer-Dratch, 1988

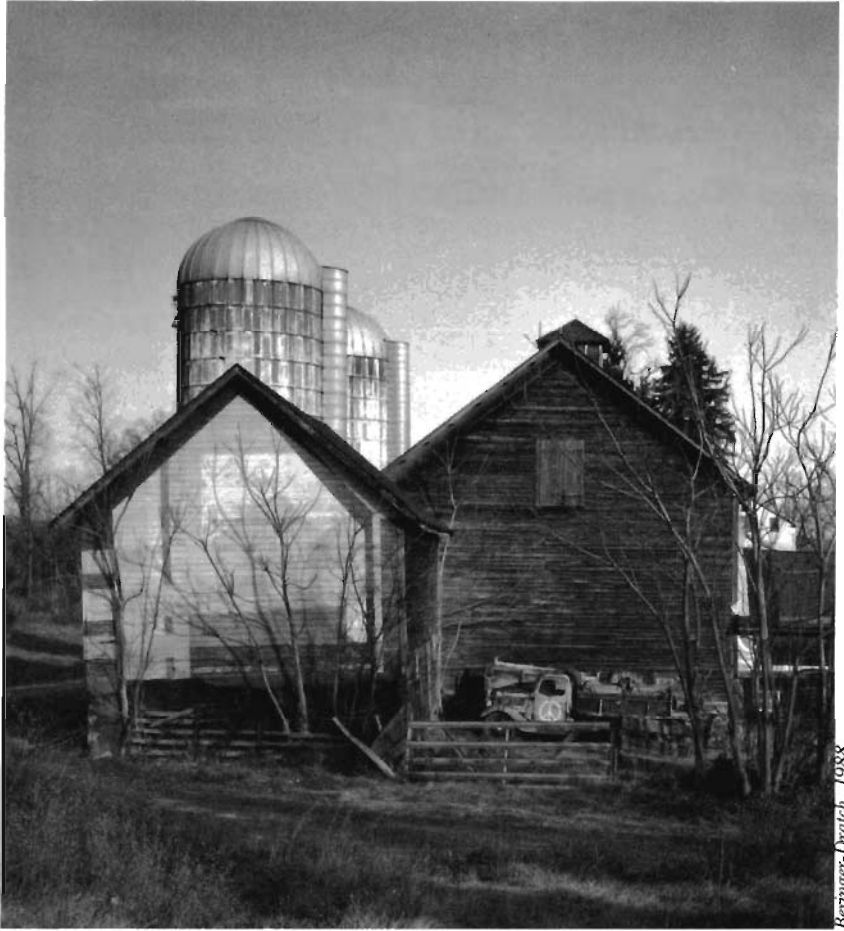
*Red barn in Tivoli orchard, Dutchess County.*





*Berringer-Dratch, 1988*

*Blue barn detail, Staatsburg, Dutchess County.*



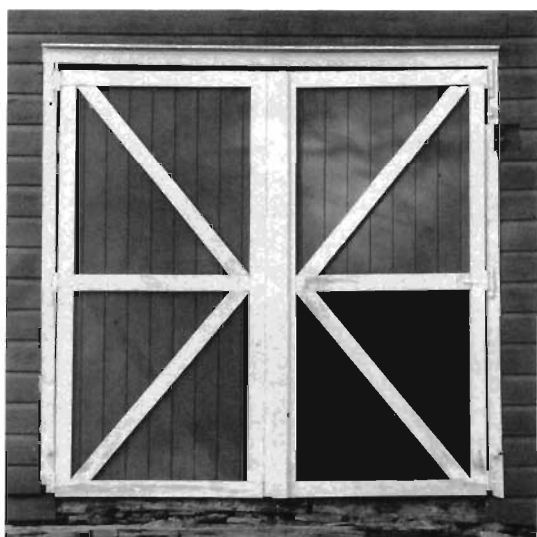
Berninger-Dratch, 1988

*Barn with painted mural, Taconic Parkway, Dutchess County.*



*Berringer-Dratch, 1988*

*Fulton farm, Jacksons Corners, Dutchess County.*



*Berringer-Dratch, 1988*

*Door detail, red barn, Blue Mountain, Town of Saugerties, Ulster County.*



*Berlinger-Drach, 1988*

*Red barn, Elizaville, Columbia County*



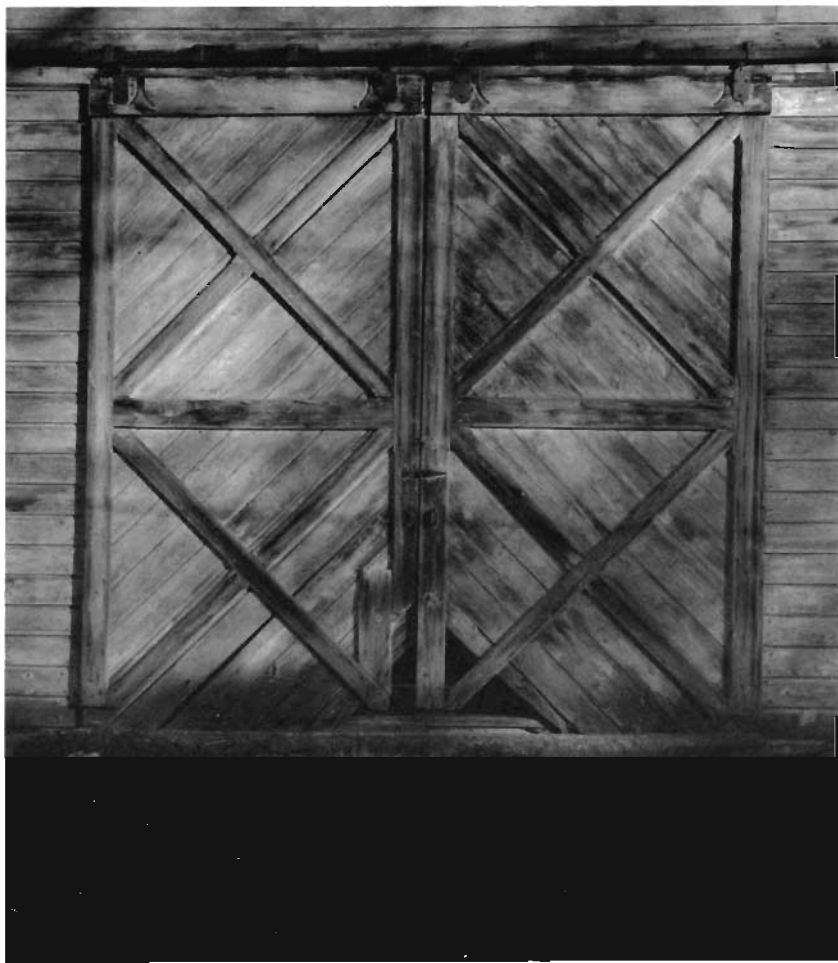
*Berlinger-Drach, 1988*

*Red barn complex, Town of Gallatin, Columbia County.*



*Beringer-Dratch, 1988*

*Unpainted barn with cupola, Route 32, Greene County.*



Berninger-Dratch, 1988

*Unpainted barn door detail, Route 32, Greene County.*



Berringer-Dratch, 1988

*Cupola of Greene County barn, Route 32, Greene County*



Berringer-Dratch, 1988

*Red barn, Red Hook, Dutchess County.*



Berringer-Draugh, 1988

*Door with wooden hardware, 18th-century Dutch barn, Zena, Sawkill Road, Ulster County.*