Historical Farming Systems and Historic Agricultural Regions: A Word About Definitions

The concept of a "farming system" is helpful as a framework for understanding how agriculture in Pennsylvania evolved. A "farming system" gathers physical, social, economic, and cultural factors together under the assumption that all these factors interact to create the agricultural landscape of a given historical era. Physical factors like topography, waterways, soils, and climate set basic conditions for agriculture. Markets and transportation shape production too. Other components, equally important but sometimes less tangible, form part of a "farming system." Cultural values (including those grounded in ethnicity) influence the choices farm families make and the processes they follow. So do ideas, especially ideas about the land. Social relationships, especially those revolving around gender, land tenure, labor systems, and household structure, are crucial dimensions of a farming system. Political environments, too, affect agriculture. The idea of a "farming system," then, opens the way to a more comprehensive and accurate interpretation of the historic rural Pennsylvania landscape. Whether we seek to interpret German Pennsylvania, the "Yorker" northern tier, home dairying areas where women dominated, or sharecropping regions in the heart of the state, the "farming system" approach is the key to understanding the landscape. Conversely, the landscape can tell about the farming system.

Extensive primary source research and fieldwork has helped to characterize Pennsylvania's historic farming systems, and also to establish a number of "Historic Agricultural Regions" where historic farming systems shared fundamental qualities over a long period of time, within a reasonably well defined geographic area. These regions differed significantly from one another in soil quality and topography; product mix; mechanization levels; social organization of production; and cultural practices. The six Historic Agricultural Regions are as follows: Northern Tier Grassland; Central Limestone Valleys Diversified Farming; North and West Branch Susquehanna Diversified Farming; Potter County Potato and Cannery Crop Specialty Area; River Valleys Diversified Agriculture and Tobacco Culture; and Allegheny Mountain Diversified Part-Time Farming. Though overlap surely occurs (especially in the twentieth century), each of these areas has characteristics that distinguish it from the rest. For example, the Northern Tier Grassland area was shaped not only by the limitations of glaciated soil and the proximity of urban markets, but by Yankee/Yorker culture, while farm households in the North and West Branch Susquehanna Diversified Farming region

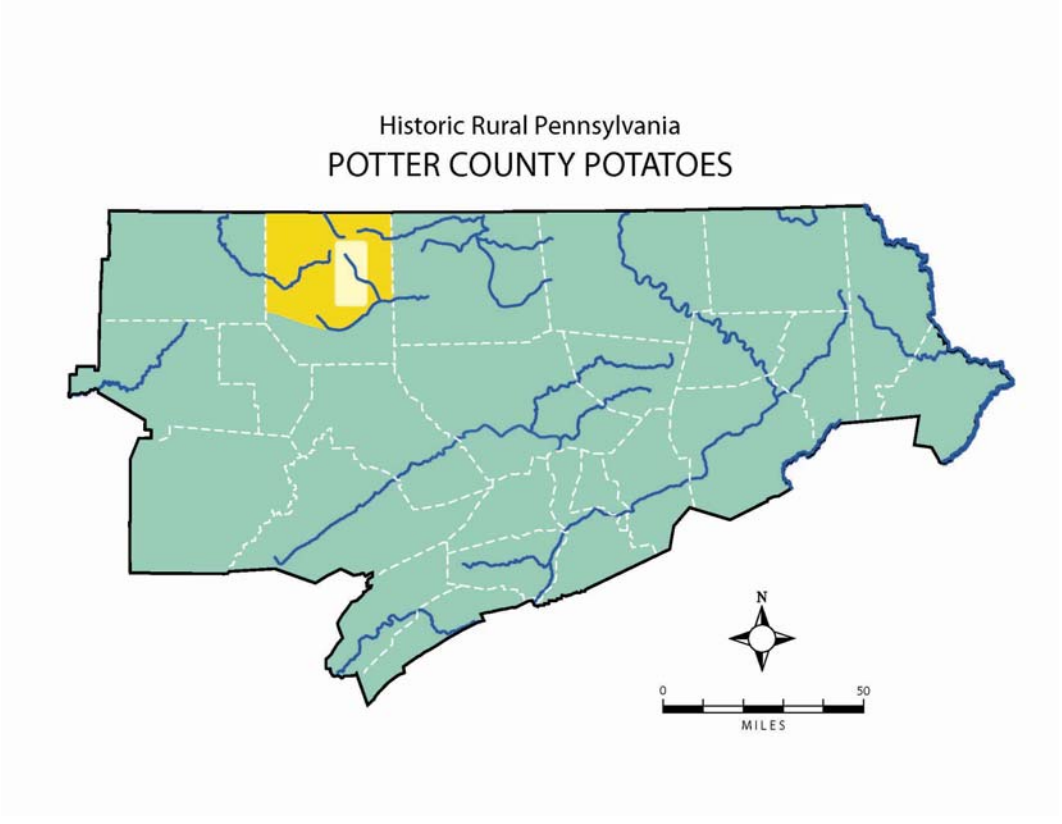
followed a diversified strategy that featured hogs and corn. In the Central Limestone Valleys, Pennsylvania German cultural influence was strong, and customs of share tenancy and rich limestone soil permitted one generation after another to raise wheat and livestock in a highly mechanized farming system. For a brief time in scattered river valley bottoms in the north and center of the state, tobacco culture forced significant alterations to farming patterns, and to landscapes. Potter County's specialty system flourished in the twentieth century, and for a time relied upon African American migrant labor. And finally, in the poor soils of the Allegheny Mountain Diversified Part-time Farming region, mining and manufacturing households used farming as a means to ensure family subsistence when wages were low.

Research into Pennsylvania's historic agricultural heritage quickly establishes an important point. No matter what the region or time period, where production was concerned the typical Pennsylvania farm unit was family-based, and survived by pursuing a wide variety of strategies; while particular *regions* of the state came to emphasize some products over others, *individual farms* rarely could be regarded as being specialized. So, we cannot approach historic Pennsylvania as if it were today's specialized, thoroughly commercialized agriculture writ small. The true essence of past Pennsylvania farming can only be captured by attending to the close-grained texture created by a multiplicity of small-scale, flexible enterprises, all of which served multiple purposes, including on-farm use, *or* off-farm sale, *or* barter. Thinking about Pennsylvania farms in terms of diversified production will allow for the most faithful interpretation of the Pennsylvania farmstead and rural landscape, which after all consist of a rich variety of buildings and landscape features -- with a variety of specialized spaces such as smokehouses, poultry houses, potato cellars, woodlots, summer kitchens, springhouses, and perhaps workshops or mills, not to mention intricate field and boundary patterns. This perspective also preserves -- indeed reclaims -- the contributions that a preoccupation with specialized market commodities tends to obscure: those of women, children, and farm laborers.

Potter County Potato and Cannery Crops, 1850-1960

Location

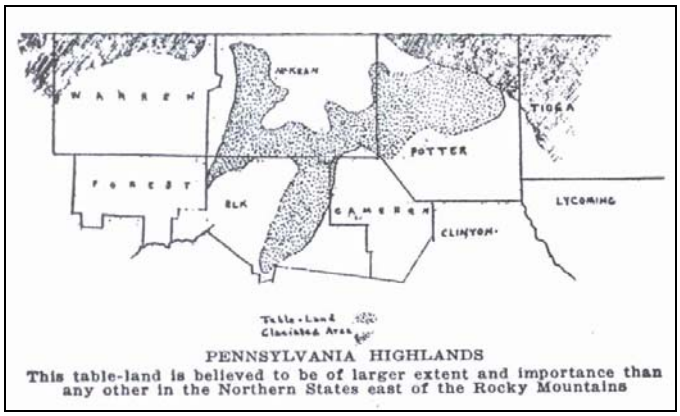
The northern two-thirds of Potter County, roughly including the townships of Sharon, Oswayo, Genesee, Bingham, Harrison, Pleasant Valley, Clara, Hebron, Allegany, Ulysses, Hector, Pike, Sweden, Eulalia, Roulette, Keating, Home, Summit, Abbott, and West Branch. On the 1929 "Types of Farming" map, Bingham, Ulysses, and Abbott townships had [potato] "crop specialty" farms as their "second most predominant types of farms."[1] (However, in neither 1929 nor 1946 Types of Farming maps did specialized potato farms here occupy a rank at the forefront.)



[1]Emil Rauchenstein and F. P. Weaver, "Types of Farming in Pennsylvania," Pennsylvania Agricultural Experiment Station Bulletin # 305, April 1934.

Climate, Soils, and Topography

The climate here is chilly, with an annual mean temperature of around 47° Fahrenheit and a growing season that is the shortest in the Commonwealth. Most of the county lies within USDA Plant Hardiness Zone 5, with about 165 frost-free days per year. Rainfall ranges from 36-42 inches.[2] Soils are ultisols of the Dekalb series whose parent material is shale and sandstone. They are not naturally productive, but in small interstices they offer hospitable conditions for potatoes. Topography consists of a "Deep Valleys" section, but in the central part of the county there is a high plateau or tableland, an especially high and relatively flat section differentiated within the Allegheny Plateau physiographic province, extending roughly across the middle of the county from east to west. On a 1926 map, this area was labeled the "Big Level" of the "Pennsylvania Highlands." Another, glaciated high plateau section occupies a triangular area in the northeastern part of the county.[3] The county's arable lands are concentrated in these two sections.



"Pennsylvania Highlands," from Rufus B. Stone, *McKean: the Governor's County*, 1926, p. 191. The 1929 "Potter County Potato and Dairy" region (Agricultural Experiment Station Bulletin # 305) took up the northern two-thirds of the county.

[2] "Types of Farming in Pennsylvania," Pennsylvania Agricultural Experiment Station Bulletin # 479, May 1946, 6-7.

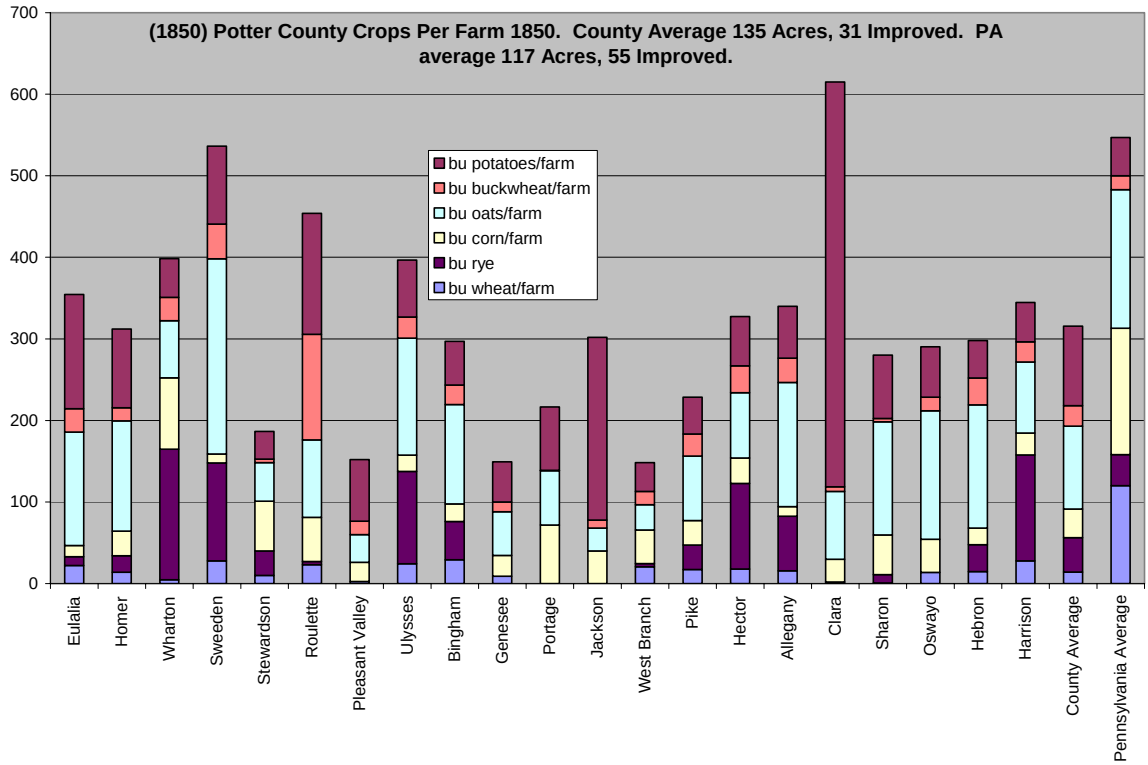
[3] Commonwealth of Pennsylvania, Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey, Map 13 (n.d.); Rufus Barret Stone, *McKean: The Governor's County* ,New York: Lewis Historical Publishing Co., 1926, 191, map of "Pennsylvania Highlands, Table Land Classified Area" called "The Big Level."

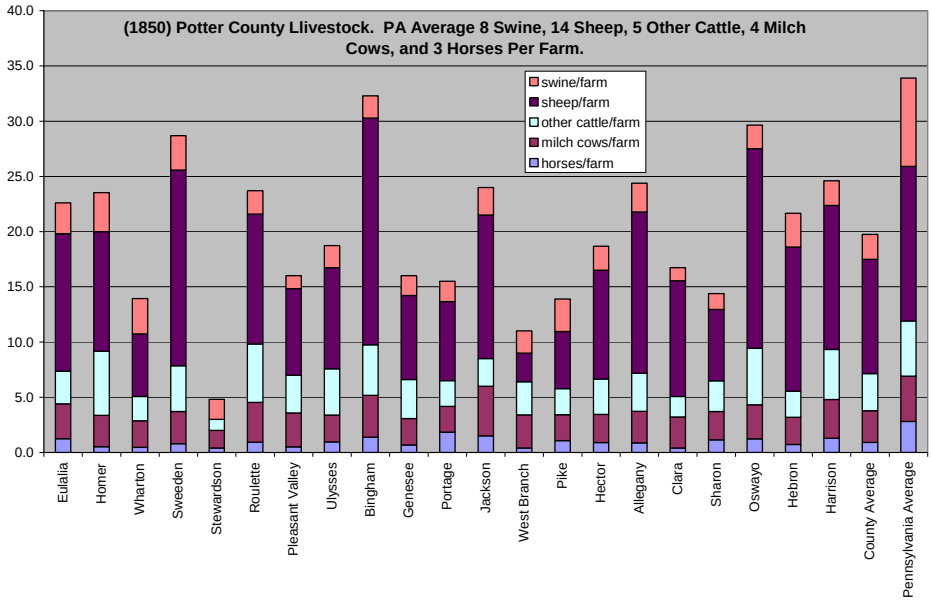
1850-1915: Diversified Home Dairying and Potato Production

Products, 1850-1915

By far the main economic enterprise of early Potter County was lumber. Coudersport became a center of the lumbering industry, and very little farmland was cleared; the population inched up from about 1,200 in 1830, to 11,500 in 1860, to a peak of 30,000 in 1900, after which it declined to about 18,000 by 1940. Farming very much resembled the grassland economy that was simultaneously developing in the remainder of the Northern Tier. Tilled acreage was low, around three dozen acres in 1850. Mechanization and horse power were insignificant. Sheep and cattle supplied the mainstay in the livestock economy; butter production was higher than average. In this cool climate, hay and oats did well, as did buckwheat. Reflecting the woodland environment, farms frequently produced over a hundred pounds of maple sugar. Notably, even at an early date, the local paper boasted that "we can raise more and better potatoes to the acre than can be raised on any other land in the Nation!"[4] The manuscript census bears this out. Seven Potter County townships show potato production well above the state average, and also well above the other Northern Tier counties. Little evidence survives about where this production may have been marketed, but we can surmise that some went to the local lumbering population; and some may have made its way out of the county after 1851, when the Erie Railroad reached Wellsville, New York, just twenty miles away. It is important to emphasize that even though it may be considered a notable crop within a diversified production system, especially in comparison to other parts of Pennsylvania, potato production was nowhere near a specialty. In the late nineteenth and early twentieth century, poultry production assumed a more prominent place in the diversified farm economy.

[4] Quoted in "The Ole Bull Colony in Potter County 1852," Hundredth Anniversary Pamphlet, PSU Special Collections.


(1850) Potter County Crops Per Farm 1850. County Average 135 Acres, 31 Improved. PA average 117 Acres, 55 Improved.
bu potatoes/farm
bu buckwheat/farm
bu oats/farm
bu corn/farm
bu rye
bu wheat/farm
700
600
500
400
300
200
100
0
Eulalia
Homer
Wharton
Sweeden
Stewardson
Roulette
Pleasant Valley
Ulysses
Bingham
Genesee
Portage
Jackson
West Branch
Pike
Hector
Allegany
Clara
Sharon
Oswayo
Hebron
Harrison
County Average
Pennsylvania Average


(1850) Potter County Llivestock. PA Average 8 Swine, 14 Sheep, 5 Other Cattle, 4 Milch Cows, and 3 Horses Per Farm.
swine/farm
sheep/farm
other cattle/farm
milch cows/farm
horses/farm
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Eulalia
Homer
Wharton
Sweeden
Stewardson
Roulette
Pleasant Valley
Ulysses
Bingham
Genesee
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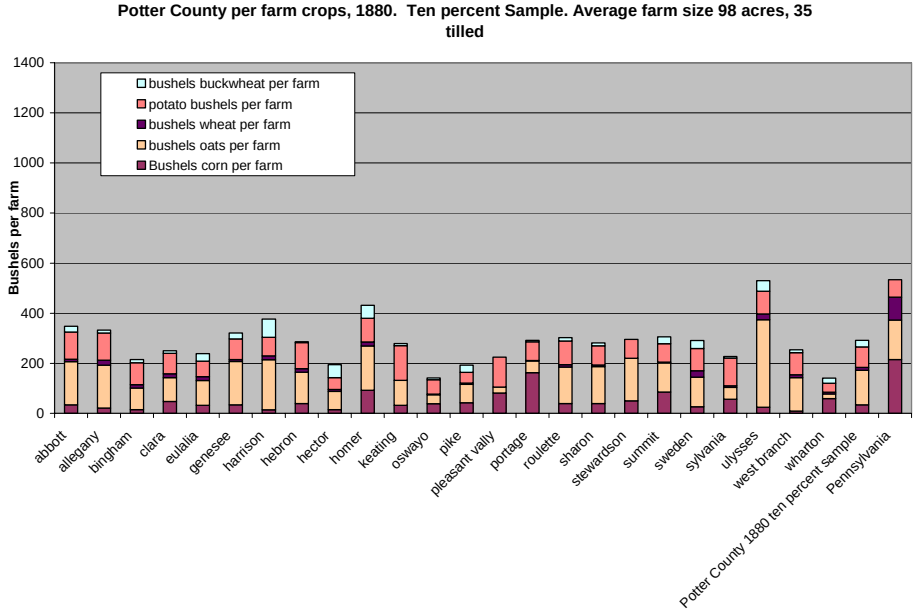
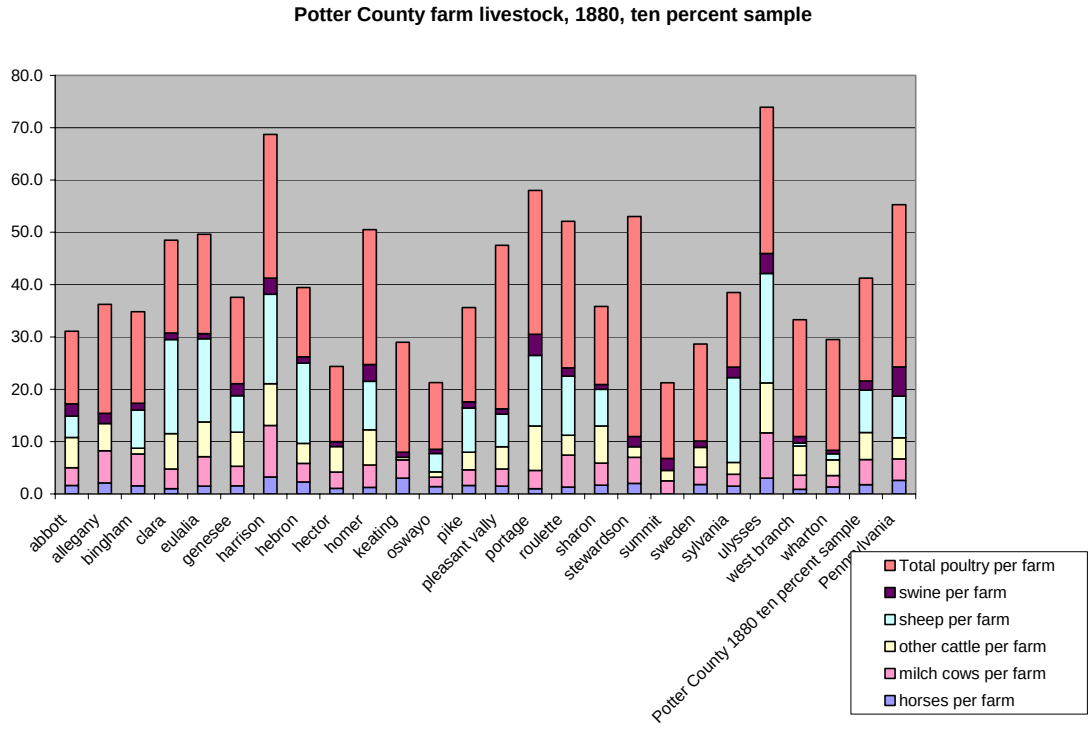
County Average
Pennsylvania Average


Potter County per farm crops, 1880. Ten percent Sample. Average farm size 98 acres, 35 tilled
bushels buckwheat per farm
potato bushels per farm
bushels wheat per farm
bushels oats per farm
Bushels corn per farm
Bushels per farm
1400
1200
1000
800
600
400
200
0
abbott
allegany
bingham
clara
eulalia
genesee
harrison
hebron
hector
homer
keating
oswayo
pike
pleasant vally
portage
roulette
sharon
stewardson
summit
sweden
sylvania
ulysses
west branch
wharton
Potter County 1880 ten percent sample
Pennsylvania



Labor and Land Tenure, 1850-1915
In only two townships did farms declare hiring even one laborer for as many as fifty weeks in 1880; otherwise, labor needs were met by family and neighbors. Mechanization was low in this grassland economy. Likely many still supplemented farm income through lumbering. The tenancy rate in 1880 was just twelve percent, as opposed to 21 percent statewide. Family members milked, hayed, herded, churned, and fed animals.

Buildings and Landscapes, 1850-1915

Houses, 1850-1915
Little remains on the landscape from this period, but a few buildings may date to the late nineteenth or early twentieth century. Two of the houses show a possible local type: a one and one half story, frame gable-roof structure, five bays across the front with central

door, and two bays deep. These houses have eyebrow windows on the second, half-story level. They are covered with clapboard and painted white. Their proportions and the eyebrow windows suggest faint echoes of mid-nineteenth century Greek Revival attributes, but their overall aspect is very plain. These visual characteristics do link them with the Yankee/Yorker tradition, however. In general, housing characteristics of the Northern Tier apply in Potter County.[5]

It is significant that one of these houses has an attached kitchen ell and a root cellar. The ell follows the Northern Tier/New England pattern of a one-story work space appended to the main block of the house. The root cellar's presence is significant as an indicator that potato culture indeed took up an important place in household production, and also because it was associated with women's work space.

105-WB-002-01, West Branch Township house, c. 1880.

[5] The Potter County Historical Society's CD, "Pictorial Tour of Potter County," 2004, reflects this well.

105-WB-002-27, West Branch Township house, view of attached kitchen ell and root cellar.

105-SW-004-01 House looking NW. Note the similarity between this pattern and the one in 105-WB-002. The house likely dates from the late 19th century.

105-UL-002. Ulysses Township, Potter County. This house has some Eastlake detailing.

Barns, 1850-1915

One surveyed property possessed a late nineteenth century "English" style barn – that is, a small, un-banked, three-bay barn with doors in the eaves side. This configuration is consistent with small-scale, diversified farming of the period. It provided, in an all-purpose space, room for hay storage, threshing, and livestock housing.

105-WB-002-06: English barn with machine shed extension, c. 1870

Landscape Features, 1850-1915

Landscape features from this period in Potter County would resemble those in the Northern Tier Grassland. Settlement and hence clearing occurred generally somewhat later than in Bradford and Susquehanna Counties, around the same time as in Tioga County. Immediately around the house, a few ornamental plantings such as sentinel trees or flowering shrubs might appear. Farm layout exhibited characteristics of Northern Tier farms. The farmstead was frequently bisected by a road, and often, farm buildings were ranged, gable side facing the road, across the road from the farm house. Pasture and meadow would account for a large portion of farm acreage, as would woodlots. Fields would be small and square-ish, and usually defined by treelines or hedges. Worm fences and possibly a few stone fences would also be present.

105-OS-001 Potter County farmstead bisected by a road.

105-OS-002. This Potter County farmstead is unusual in that it has twin barns, but the landscape features are typical: small, square ish fields, which now appear to be pasture or hay fields, divided by hedges and treelines.

The image above shows a Potter County rural scene c. 1920 Honeoye, Sharon Township, the Elliot, Geneny, Drake, and Phoenix farms). Http://www.eg.bucknell.edu/~hyde/potter/Honeoye.JPG, February 17, 2004) Note the foursquare house with shed extension; gambrel roof barns; and small gable roof sheds. By this point clearing appears to have been extensive.

1915-1940: Diversified Dairying Plus Potatoes

In this particular subsection of the Northern Tier Grassland, dairying developed along a parallel to other Northern Tier counties – that is, farms carried half a dozen or more dairy cows producing fluid milk mostly for New York City market, and thus governed by New York sanitation statutes. Cattle feed consisted of purchased concentrates, silage, hay, and pasture. In this period, potatoes emerged as a notable complement to the dairying economy, further differentiating Potter from the other Northern Tier counties. The manuscript census for 1927 reveals a complex pattern at the individual farm level. The largest farms, over 200 acres, included 10 or more acres of potatoes within a mix that included livestock and field crops. However, smaller farms that raised significant amounts of potatoes tended *not* to have a diverse operation. So, by this period, potato production can be considered a "sub" system, pursued either by large operations in combination with other enterprises, or by smaller farms that tended more toward specialization. In the aggregate, these collectively were enough to produce identifiable

patterns at the township level of analysis, especially in Ulysses, Bingham, and Abbott Townships.

Products, 1915-1940

Where acreage was concerned, only a small percentage of the average farm (36 of 132 acres) was in crops. On farms where a diverse agriculture was practiced, the cropland was dominated by hay land. In this cool climate, farmers were relatively early in adopting silage corn. Though only about half of farms had silos in 1927, this proportion was well above the statewide average. Oats, buckwheat, and potatoes accounted for the remainder of cultivated land. Dairy herds averaged from half a dozen to a dozen, and much of the milk was sold in fluid form to condensaries and cheese factories.[6] Pasture land was extensive. Interestingly, Potter County dairymen were more militant than elsewhere in the state, participating in Dairymen's League actions. Poultry represented a strong component of the farm enterprise, particularly into the Depression years. Five dozen chickens supplied eggs to sell. Some farmers made their own dairy and poultry rations using home grown oats, buckwheat middlings, and barley, but most purchased ready mixed feed. These two-horse farms probably had a surplus of oats. By 1935, the county agent also reported 2000 acres of soybeans in the county, raised in rotation for hay. There is little information on sheep raising; by far the more significant triad was dairy: poultry: potatoes.

In this period, the extension system helped local farmers to exploit a known advantage: the suitability of local conditions for potato culture. By the turn of the twentieth century, Potter County was already known for its superior potato quality and yields: "the potato crop," said the county agent in 1920 "is the second largest farm product produced in Potter County. It is the only staple cash crop grown in the county that yields a bigger crop and a better quality than can be produced in other parts of the country."[7] In 1919, the county agent reported that "the extremely high altitude and the short season in Potter County gives us ideal conditions for growing seed potatoes. In fact our conditions are among the most favorable in the US."[8] So once the agricultural extension system was in place, agents almost immediately homed in on the potential for certified seed potato

[6] Potter County Agricultural Extension Annual Report, 1919. PSU Special Collections.
[7] Potter County Agricultural Extension Annual Report, 1920. PSU Special Collections.
[8] Potter County Agricultural Extension Annual Report, 1919. PSU Special Collections.

production. They encouraged farmers to rogue[9] their plants, grade the potatoes for shipping, organize spray "rings" (cooperatively owned spraying outfits), rotate crops, plant cover crops (usually soybeans), form marketing organizations, and purchase improved varieties, developed by Penn State scientists. This work soon began to pay off, and by the 1920s the agent was reporting increased shipments of seed potatoes and table potatoes to both regional and national markets. A "Camp Potato" was set up at Denton Hill, in 1938 east of Coudersport, for experimentation and demonstration purposes.[10]

Camp Potato, about 1950. Lycoming County Agricultural Extension Archives, Slide Collection. By permission.

While local people certainly had already recognized that potatoes did well in this place, the intervention of county agents was critical in organizing and rationalizing production. Spraying, in particular, achieved spectacular results when it was first tried – as much as a 125 bushel yield increase, with accompanying "large financial returns." Certified seed

[9] Roguing is eliminating plants with undesirable characteristics before they mature, so that they do not taint the genetic pool of plants. The language of the county agent reflected Progressive era scientific and eugenic thinking when he declared that roguing promoted a "uniform appearance of fields" through elimination of "degenerate diseases." Potter County Agricultural Extension Annual Report, 1922, PSU Special Collections.

[10] "Historical Notes In the Development of Potter County," n. p., 1949, 22.

potatoes garnered a substantial price premium, too, since at the same time, agricultural extension agents all over the state were pushing their clientele to raise only potatoes from certified seed stock. The agent claimed in 1922 that over 400 farms were served by spray rings; that works out to about twenty percent of all farms in the entire county. In 1923 the agent claimed that sixty percent of the potatoes had been sprayed; and the crop was rogued by professionals brought in from the State College. Maps in the agricultural extension reports show that demonstration work was concentrated in Abbott, West Branch, Sweden, Ulysses, Eulalia, Hebron, and the northern tier of townships. Countywide, potato production just about quadrupled between the 1880s and the mid 1920s, from about 150,000 bushels to over 500,000. By the mid 1930s, almost 200,000 bushels of certified seed potatoes came out of Potter County. So, the Potter County potato economy was dramatically developed, if not created from scratch, by county agents. This is an especially sharp example of changes that were taking place in American agriculture during this period, towards more capitalistic, scientific practices as defined by the land-grant system.

Potter County farm families continued to produce seed and table potatoes in the 1920s and 1930s. Very few farms actually received enough of their income (40 or more percent) from potatoes to qualify as specialized potato farms. Rather, the county agent noted in 1939, potatoes formed one leg of a triad that consisted either of dairy: potatoes: poultry or sheep: potatoes: poultry.[11] All the while the agent was busily promoting potato production, he was helping farm families with issues relating to dairy production and poultry raising.[12]

Labor and Land Tenure, 1915-1940

In this period, the Potter County grassland farming- plus- potatoes economy was farmed with family and local hired labor, largely by owner-operators (the tenancy rate was just under the statewide average, i.e. about 27% in 1910 and 21% in 1940) on farms that averaged well over 100 acres, quite a bit of which was in woodland, while only a quarter was in crops – including hay, which took up two-thirds of the cultivated acreage.

[11] Potter County Agricultural Extension Annual Report, 1939. PSU Special Collections.
[12] Though little appears concerning sheep raising.

Buildings and Landscapes, 1915-1940

Houses, 1915-1940
In the c. 1920 photo shown above, there appears to be a "foursquare" house that could date to this period. However, in general, dating for the houses surveyed in fieldwork is uncertain and could either predate this period or date to it. Typical forms included gabled houses with "ell" wings; typical construction material was wood with siding.

Barns, 1915-1940
As in the Northern Tier, Potter County barns underwent changes in direct response to the demands of milk markets. The Dairymen's League, which marketed Potter County milk, entered an agreement with New York milk markets which required their patrons to "pass the Grade B inspection" in 1925. This resulted in a noticeable changeover – rearranging stables, building milk houses, providing light and ventilation, cementing floors, and installing stanchions, among other things. The agent reported that 200 milk houses were constructed in the summer of 1927 in Coudersport, Ulysses and Germania area. By 1937 the requirements had grown still more exacting, so the agent's work in this area continued apace.

105-EU-001-09 Barn milk house looking NE. This shows a Potter County English barn with ell, next to a milk house constructed of rock-face concrete block.

Milk Houses, 1915-1940
Because it was in the Northern Tier grassland region, Potter County had a significant number of milk houses. See Northern Tier Grassland narrative for more discussion.

Silos, 1915-1940
Because Potter County was part of the Northern Tier Grassland region, dairying was important by this period and silos were common. See Northern Tier narrative for more discussion.


105-EU-001-15 Silo

Machine Sheds, 1915-1940

Though Potter County, as part of the Northern Tier Grassland, was not heavily mechanized, still machine sheds were fairly common. See Northern Tier Grassland for further discussion.

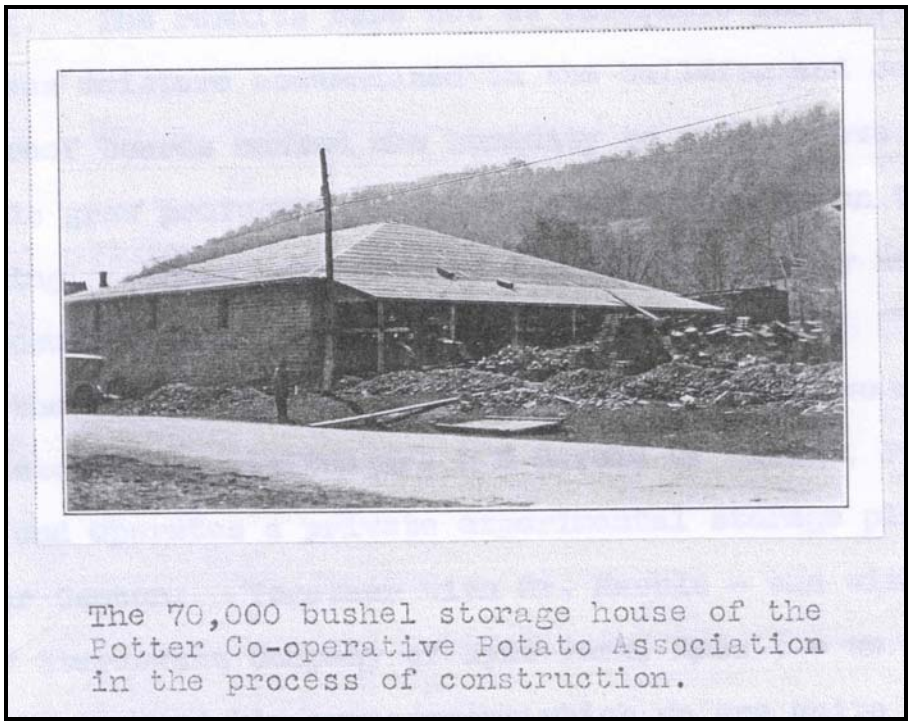
Granary, 1915-1940

105-EU-001-09, granary. The granary on Northern Tier farms was for oats for horses. See Northern Tier narrative for more discussion.

Poultry houses, 1915-1940
As elsewhere, farm families turned to poultry in the depression decades of the twenties and thirties. So, they built brooder houses, layer houses, and broiler houses, or they altered other buildings to accommodate poultry. This pattern followed those in the other Northern Tier counties. See Northern Tier Grassland narrative for more discussion.

Potato Storage Houses, 1915-1940
Central storage: Once the potato crop was more established, the need grew for proper storage. Storage was an issue, because so much of the Potter County crop consisted of seed potatoes, which would not be in demand for a full eight months. (Table potatoes, on the other hand, could be sold and moved out by the car lot as they were harvested.) This was a critical problem, because now farms were producing disease-free potatoes and producers wanted to ensure that post-harvest problems like storage rot didn't spoil their crop. So the extension agent embarked on an effort to build a centralized potato storage

facility in Coudersport. In 1922 he wrote optimistically: "The Association [the Potter County Cooperative Potato Association] took up the project of building the large storage house at Coudersport and is furnishing a service absolutely necessary in the development of the seed production program in the county. The building project is only started and more buildings will be constructed in following years."[13] This building stored 70,000 bushels. It was not an unqualified success; there were constant technical problems relating to humidity and temperature control. However, at some point problems had been solved enough so that by 1945 the agent began to refer to a "Potter County style potato storage" facility.



Potter County potato storage building, 1922, from Agricultural Extension Agent Annual Report, PSU Archives

[13] Potter County Agricultural Extension Annual Report, 1922. PSU Special Collections.

105-CO-001-01 former potato storage facility looking NW, 2004 . Coudersport.

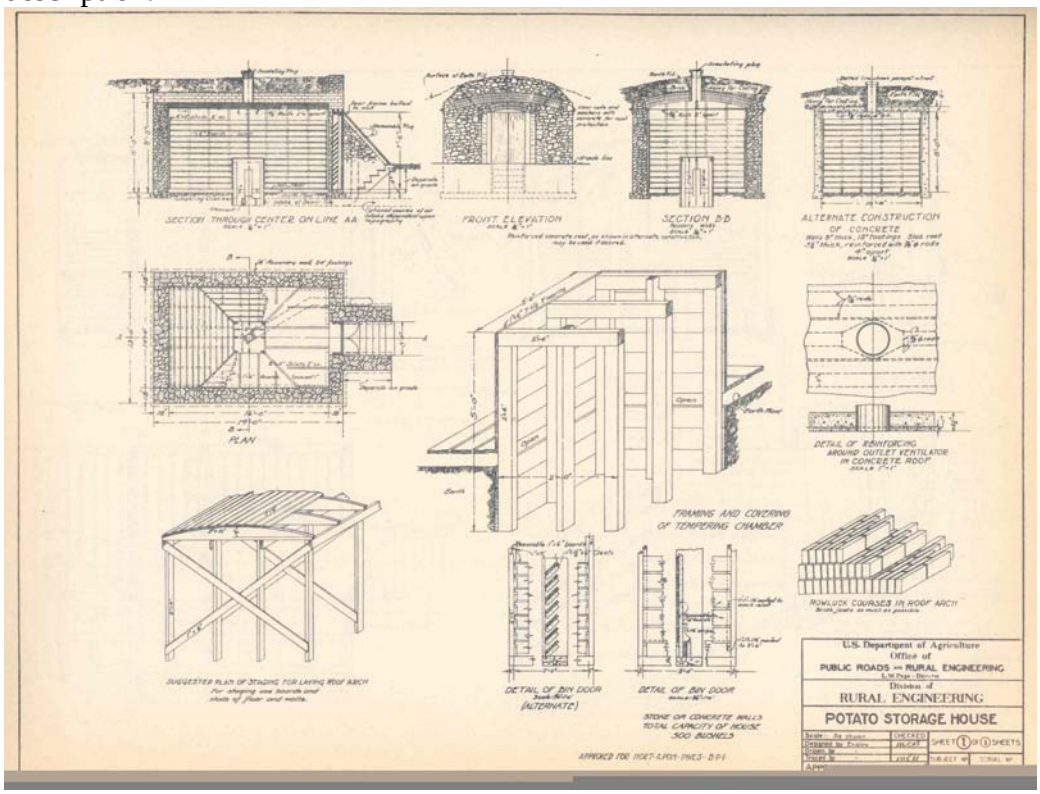
Farm storage of potatoes

Many farm families still stored their potatoes on the farm. Some people stored potatoes in their home cellars, but this wasn't always satisfactory; they lost a lot that way.[14] The agent encouraged them at least to ventilate their cellars. In 1924 he recommended "false floors and walls… together with some system of adequate ventilation either by means of windows or the chimney leading from the cellar out through the house." Pit storage outside the farmhouse was another option, though that same year the agent admitted that "we are not ready to recommend pit storage as an advisavle [sic] proposition in this climate due to the fact that pits have to be covered so heavy to protect them from the extreme frost that there is considerable danger from heating…"[15] By 1940 at least some of these problems had been solved, for the 1940 report said that "plans were made for nine potato storage houses in the county, all of which were completed and used this season. All of these were of the under ground type with earth banking at the top of the cellar. Insulating material was used in all cases over the top with a ventilated space under the roof. A ventilation system was planned in each case by using an electric fan. A cooling or temperature control system was provided in each case by having a metal door

[14] The agent reported this, but did not specifically say what the causes of loss were.
[15] Potter County Agricultural Extension Annual Report, 1924. PSU Special Collections.

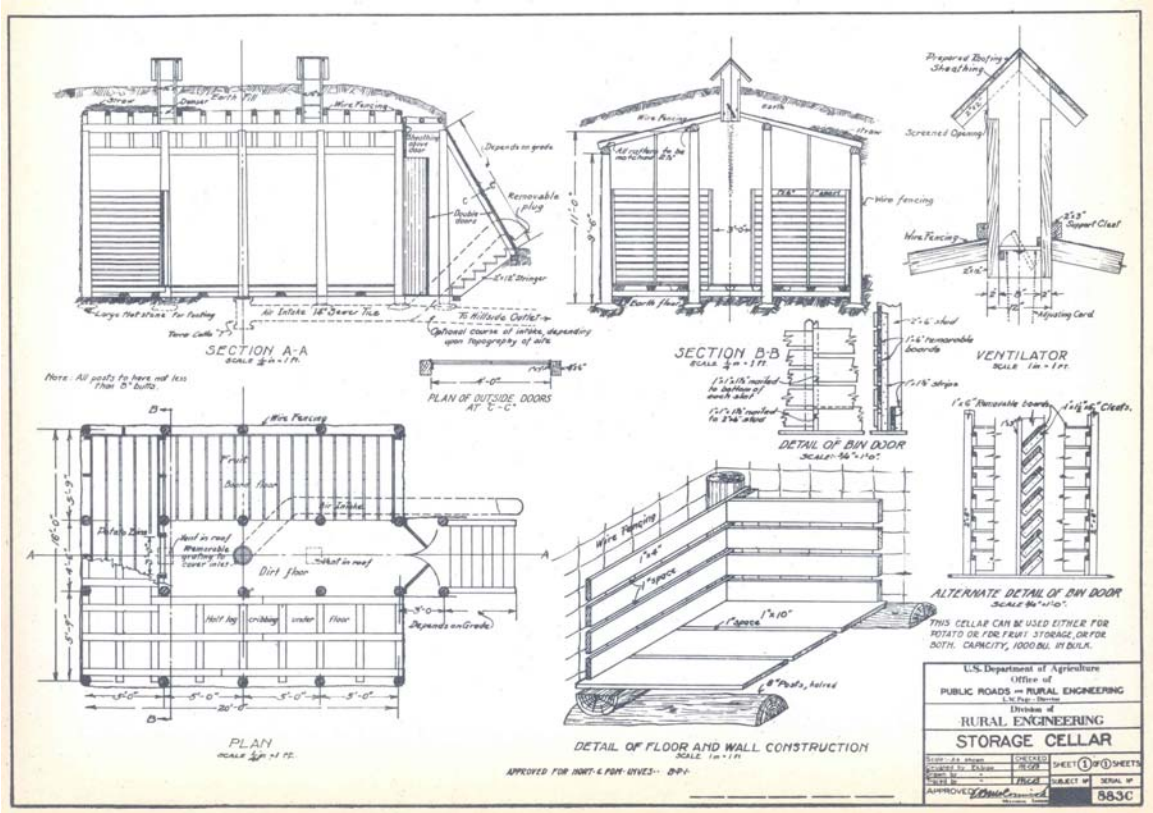
between the storage and a vestibule or cold room in front of the storage. Fans were used to circulate the air against this metal door to reduce the temperature to the proper degree. Assistance was also given in remodeling one bank barn into a potato storage." The following year, six potato storage houses were built with "plans suggested by the county agent." [16]

Here is a suggested plan from the USDA that resembles the agent's description:

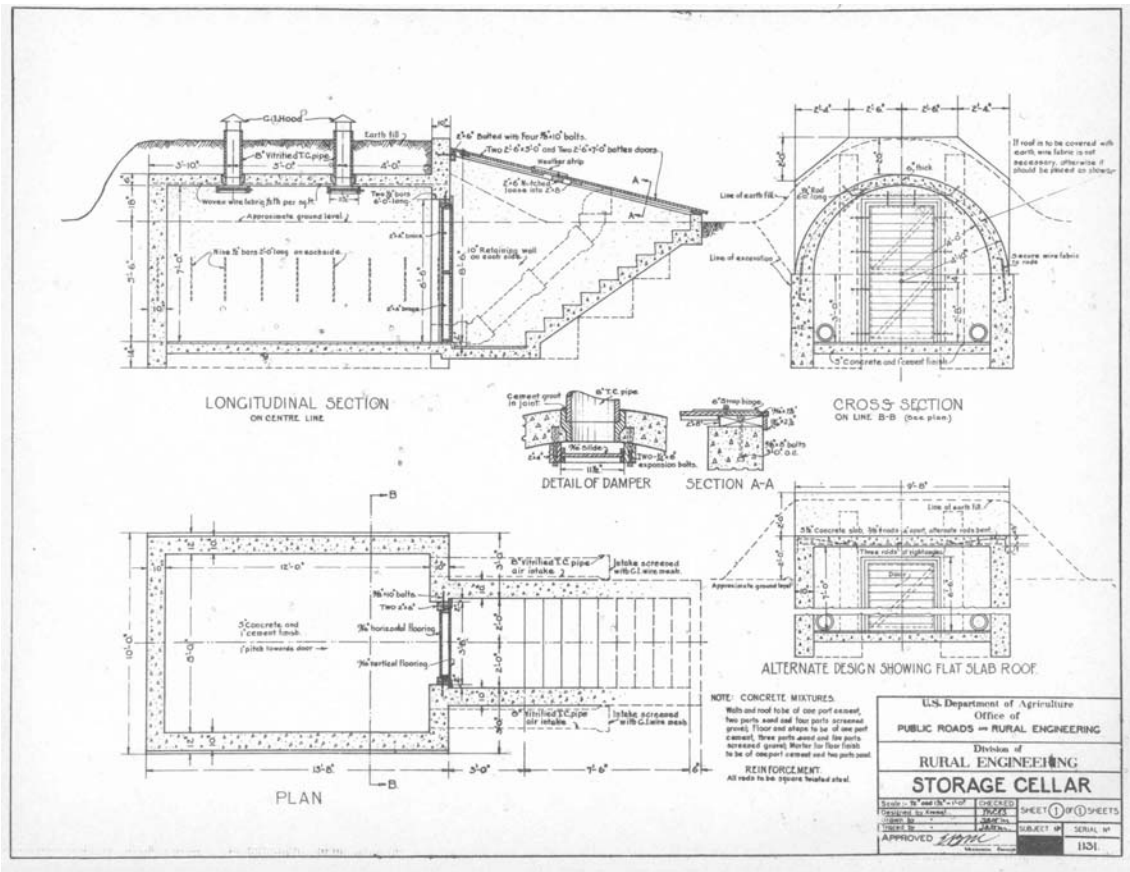


Potato storage plans from USDA Farm Building and Equipment Plans and Information Series 1929; # 880.

[16] Potter County Agricultural Extension Annual Report, 1940 and 1941. PSU Special Collections.



Potato Storage # 883C from USDA Farm Building and Equipment Plans and Information Series 1929.



Potato Storage Design # 1131, from USDA Farm Buildings and Equipment, 1929

105-AL-001-01 W. Side of Roof on Potato Barn (looking SE). This facility is recent but gives an idea of farm storage

105-SW-001-04 Photo of 1940's aerial photo of farm. Private collection. By permission.

105-SW-001-09 Potato storage # 2 This storage house dates to the 1940s.

105-SW-004-04 Potato barn

Field workers did not find many signs that barns were converted for potato storage. The considerable earth moving and particular requirements of a potato barn seem to have dictated new construction.

Landscape Features, 1915-1940
The agricultural extension agent [1924] tried to introduce new crop rotations for potatoes; it isn't clear how influential he was, but his recommendations included using clover so, and recommended planting potatoes close together so they could not be cultivated both ways.

Woodlots were being planted during this time- two owners encountered during fieldwork indicated woodlots that grandfathers had planted in the first two decades of the 20th century. As of 2004, field workers saw quite a few pine plantations (pines of various species), interspersed with larch (Larix) and Norway spruce, throughout the county. These were estimated to be about 75 years old.

Contour stripping was encouraged in hilly areas during this period. It appears now in Potter County, though further work will have to be done to document the first appearances of contour strips.

It is not clear that expanded potato culture changed the landscape significantly. Acreage was comparatively small, and fields would not have a distinctive shape.

105-SW-005-29 treeline fields woodlots looking NW. This photo shows landscape features characteristic of the twentieth century.

This 2004 photograph, 105-HA-001-17, shows a diked pasture along a stream.

1940-1960: Diversified General Farming Plus Potatoes and Vegetables

Products, 1940-1960

Production in Potter County changed dramatically with the onset of World War II. Local producers were asked to increase potato production by 39 percent. They bent their efforts toward the goal and exceeded it in 1943 with a 46 percent increase. Production in 1943 was four times that of the previous year and by 1944 the county's yield stood at over 2 million bushels – it had been just over half a million in 1924.[17]

In the postwar period, certified seed potatoes and table potatoes dominated. However, vegetable crops were added, including snap beans, peas, asparagus, cauliflower,

[17] Johnson, George Fiske, "Agriculture in Pennsylvania, A Study of Trends, County and State, since 1840," Pa. Department of Agricultural General Bulletin # 484, p. 89.

strawberries, kidney beans, and later cucumbers. These crops were destined for canneries and freezer facilities in other counties.[18] The agent noted in 1947: "Beans, peas, and strawberries are used by potato growers in place of a grain crop in their three year rotation."[19] By 1952, the number of "man-days" devoted to beans in the county was twice that for potatoes.[20] In the late 1950s cucumbers were added.[21]
This development was part of a wider set of social, economic and technological changes, in which farming shifted from diverse, multi-season production for mostly local markets, to specialized, seasonal production for distant markets. The transformation was speeded not only by changes in plant breeding, fertilization, pesticides, etc. (DDT made a spectacular debut in the late 1940s) but also by a nationwide road transportation network and refrigeration and freezing technologies. Transportation also made it possible to bring in cheap labor from long distances (see below). In turn, the availability of migrant labor drove Potter County's expansion from potatoes to other labor-intensive crops.

Labor and Land Tenure, 1940-1960

The sudden, drastic increase in potato production during World War II precipitated a labor crisis, coming as it did during a period when so many workers were being drawn away to military service or war-industry employment. Moreover, the county's year-round population was tiny, only about 18,000, and it was dropping; by 1950 it was only 16,810. Thus the local labor pool was limited to begin with. In 1943, the county agent reported that an "emergency farm labor" program had been put in place. Mostly this consisted of high school students: "during 2 weeks of potato digging season, we had over three thousand workers on the farms of the county. The total number of placements made in the County aggregated 15,788. These placements were made on approximately 581 farms and were divided about as follows." 3120 men and 3000 women were placed. 868

[18] There was a freezer plant in Centre County, and there were canneries in the North Branch/Susquehanna region. The location of plants outside of Potter County reflects several circumstances. The labor force for canneries usually consisted of local residents rather than migrant workers, and Potter County did not have a large local population. Centrally located plants were also near other vegetable-producing areas especially in Northumberland and Columbia counties. Second, there was probably more capital in the central part of the state, for investment in canning and freezing equipment. Finally, the central region had greater access to highway outlets for marketing.
[19] Potter County Agricultural Extension annual report, 1947. PSU Special Collections.
[20] Morrison Handsaker, *Seasonal Farm Labor in Pennsylvania*, Lafayette College: Easton, PA, 1953, 34.
[21] Walter Michael Whitlock, "Educational Opportunities for Migratory farm children: New York counties of Steuben and Yates, and the Pennsylvania county of Potter," Ed.D thesis, Educational Administration, Pennsylvania State University, 1961, 102.

boys under 14, 2646 boys 14-16; 1491 boys 16-18; 395 girls under 15; 2370 girls 14-15; and 1896 girls 16-18.[22] Though he did not say explicitly, these were likely students from the local public schools. However, another group also contributed; the agent made reference to a "labor camp" operated in abandoned CCC housing, where about 150 men were housed, and bussed from one site to another. This arrangement foreshadowed more systematic ones to come.[23]

Grading and Sacking Potatoes, Potter County, no date. Pennsylvania State Archives, Manuscript Group 219, Philadelphia Commercial Museum Collection.

[22] Potter County Agricultural Extension Annual Report, 1943, PSU Special Collections. Page 5.
[23] This may have been the first Southern migrant crew, because in 1948 the county agent reported that "some crew leaders have been in the county for three successive years."

In 1946 the extension agent included a separate "Farm Labor Narrative" in his report. "the largest supply of help," he noted, "were those who drove in from adjoining territory including; Allegany and Cattaragus counties in New York, and Tioga, McKean and Cameron Counties in Pennsylvania. These workers drove from their homes to work in the morning and back in the evening. This accounted for about 1600 workers." Potter County residents who furnished labor included unemployed workers from the tanneries, glass works, "unemployed veterans of World War II," and high school students. Also, "an arrangement with the farm labor office at Heightstown, New Jersey and Mr. Perrine brought us 150 southern colored people who were used in the vicinity of Ulysses." This is the first overt mention of the migrant laborers who were to play a key role in the potato harvest for the next two decades. He concluded, "the farmers of the county expect a permanent need for outside labor during the potato digging season… they … feel the need for a recruiting service outside of the county."[24]

And indeed, farmers did avail themselves of "outside recruiting services." These were both private and state-organized. By 1948, Potter County's migrant labor accounted for 90 percent of the seasonal farm labor supply in the county. In 1952, 1,200 Southern migrants were brought in.[25] Absolute numbers peaked in 1958 at around 3,000 (housed in 45 camps)[26] – almost nineteen percent of the year-round population. Briefly, around 1960, Potter County imported more migrant workers than any other county in Pennsylvania. Not every farm had migrant workers, and the numbers of workers on any given farm were typically small, ranging from half a dozen to a maximum of around fifty.

These workers were African Americans from the Carolinas, Virginia, and Florida. They were part of a developing pattern of migrant labor (sometimes called the "Florida Itinerary") organized by crew chiefs, originating early in the year in the deep South, then following work northward with the advancing season. The northernmost stop was usually in upstate New York, late in the year, after which the workers returned southward to await the beginning of a new season. These workers were being displaced by mechanization in cotton production and by the "southern enclosure" which had been going on since the New Deal era. Labor and racial policies in the South ensured that they lacked bargaining power. Indeed, one historian has argued that the rise of an Atlantic

[24] Potter County Agricultural Extension Annual Report, 1946, "1946 Farm Labor Narrative," 9a, 9b, 9c, PSU Special Collections.
[25] Pennsylvania. Governor's Committee on Migratory Labor. Report. 1952, 23; Handsaker, 44.
[26] Pennsylvania. Governor's Committee on Migratory Labor. Report. 1958, 19.

migrant labor stream brought with it a "nationalization of the farm labor market" which brought with it the "southernization" of northern states like New Jersey and Pennsylvania, where farm labor was concerned.[27] Wages were predictably low for these vulnerable workers, left unprotected by the major labor-rights legislation of the New Deal era. Working conditions and housing were uneven at best (see below). State agencies were charged with regulating sanitation and housing, but they often were understaffed, and sometimes thwarted by uncooperative local officials.[28] Schooling for migrant children was similarly patchy.[29]

Buildings, 1940-1960

Potato storage facilities continued to be an important building type in this period; see above for descriptions of these.

Migrant Housing, 1940-1960

The major new associated building type to appear in this period was migrant housing. In Potter County, migrant housing was varied and mostly improvised. At first, workers were housed in farmhouses, hotels, tourist cabins, and the like. As the influx of migrant labor grew, they were housed in other ways, for example in converted barns; and sometimes in purpose-built "camp" style housing. (The Farm Placement Program reported 45 camps in 1957 in Potter County.)

Records give good descriptions of migrant housing in the county. During World War II, the county agent reported that workers were housed in the CCC camp at Lyman Run and in a hotel at Genessee. In 1946, non-resident labor was housed in two farmhouses (owned by Leon McCasling and E. J. Worley) in the Ulysses area; farmhouses owned by L. C. Traub, Fred Winkleman, and Elmer Schall near Germania; and Seward Daily in

[27] Cindy Hahamovitch, *The Fruits of Their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty, 1870-1945*, University of North Carolina Press, 1997, chapter 5. The American Friends Service Committee sponsored a report in 1976, "Pennsylvania Farm Labor Plan," that was critical of employment practices in Pennsylvania.

[28] "Migratory Farm Labor in Pennsylvania, Report of the Lafayette College Consulting Group to the Governor's Interdepartmental Committee on Migratory Labor, Commonwealth of Pennsylvania," Easton, Pennsylvania, December 31, 1954. David Bishop Skillman Library, Lafayette College. See especially page 6 in which a Potter County inspector stated "openly, 'we do not believe in prosecutions in Potter County.'"

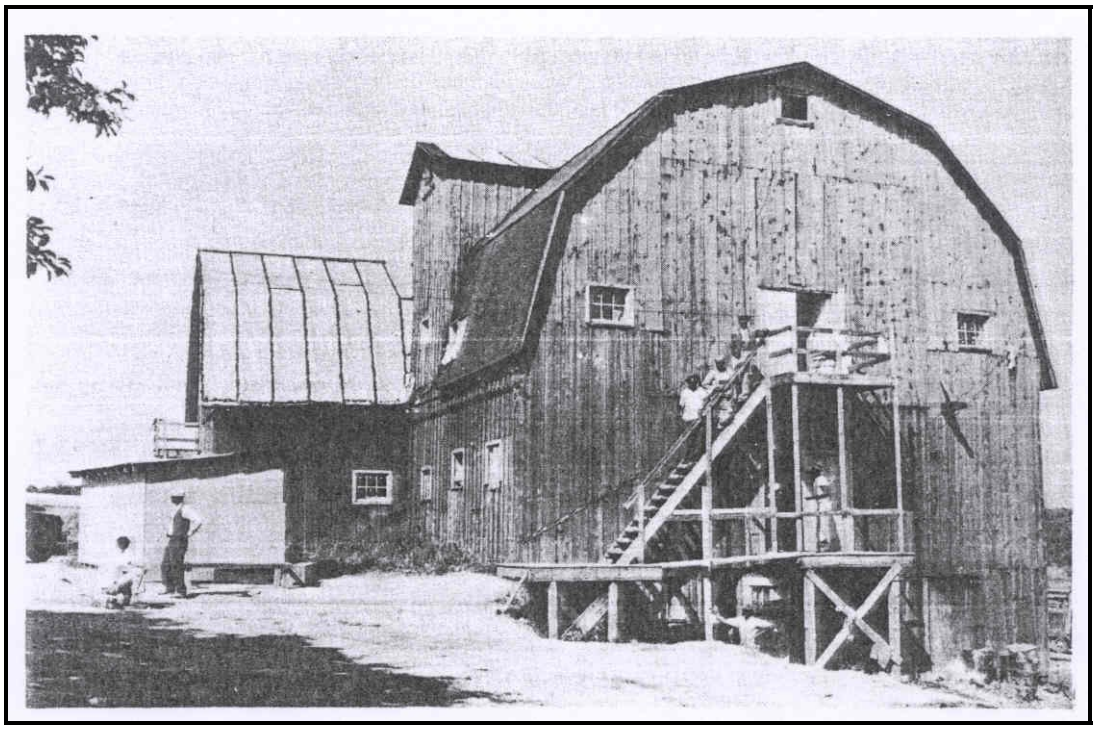
[29] Joseph Alessandro, "School for Migrant Children in Potter County at Ulysses, PA, Summer 1955…" pamphlet, 1955, PSU Special Collections.

Genessee. "The second floor of the Southern restaurant at Ulysses and a number of unused rooms in large houses at Ulysses were used and the men boarded at the two resturants [sic] in that town." Other places used included: "the large two-room school house in Germania together with the Waldhiem [sic] hotel at that place… the Brookside tourist cabins, Port O'Call tourist cabins, Mitchell's Tavern, National Hotel, and three large private homes owned by Mrs. Wm. Ayers, Leigh Neefe, and Francis Way…" Altogether, "these places accommodated approximately 1500 workers from outside of the county."[30] An undated newspaper article mentioned that prisoners of war were also used to harvest potatoes.

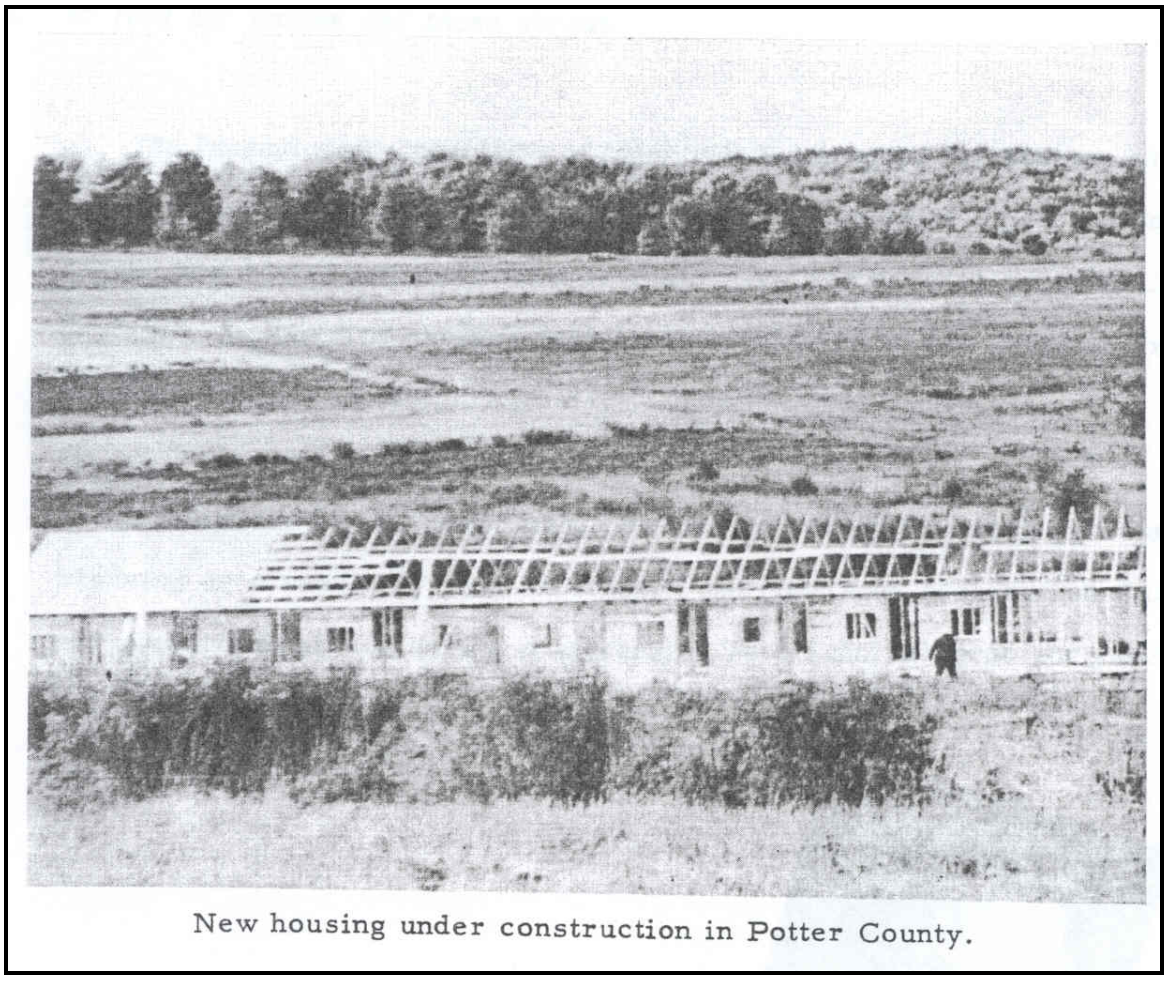
As Southern migrants replaced workers from neighboring counties, improvisation continued. Lafayette College economist Morrison Handsaker documented instances of workers living in tenant houses and in converted barns (see photo below)[31] Besides these ad hoc provisions for small numbers, some purpose-built camps were constructed. 82 percent were constructed of frame. (picture below) The map below suggests that these camps were built farm properties; note that the triangle symbols each are associated with a name, most likely that of a larger-scale producer.

[30] Potter County agricultural extension annual report, "1946 Farm Labor Narrative"
[31] See Handsaker, *Seasonal Farm Labor in Pennsylvania.*

105-SW-003-01 Migrant worker housing looking S-SE. Sweden Township, Potter County.

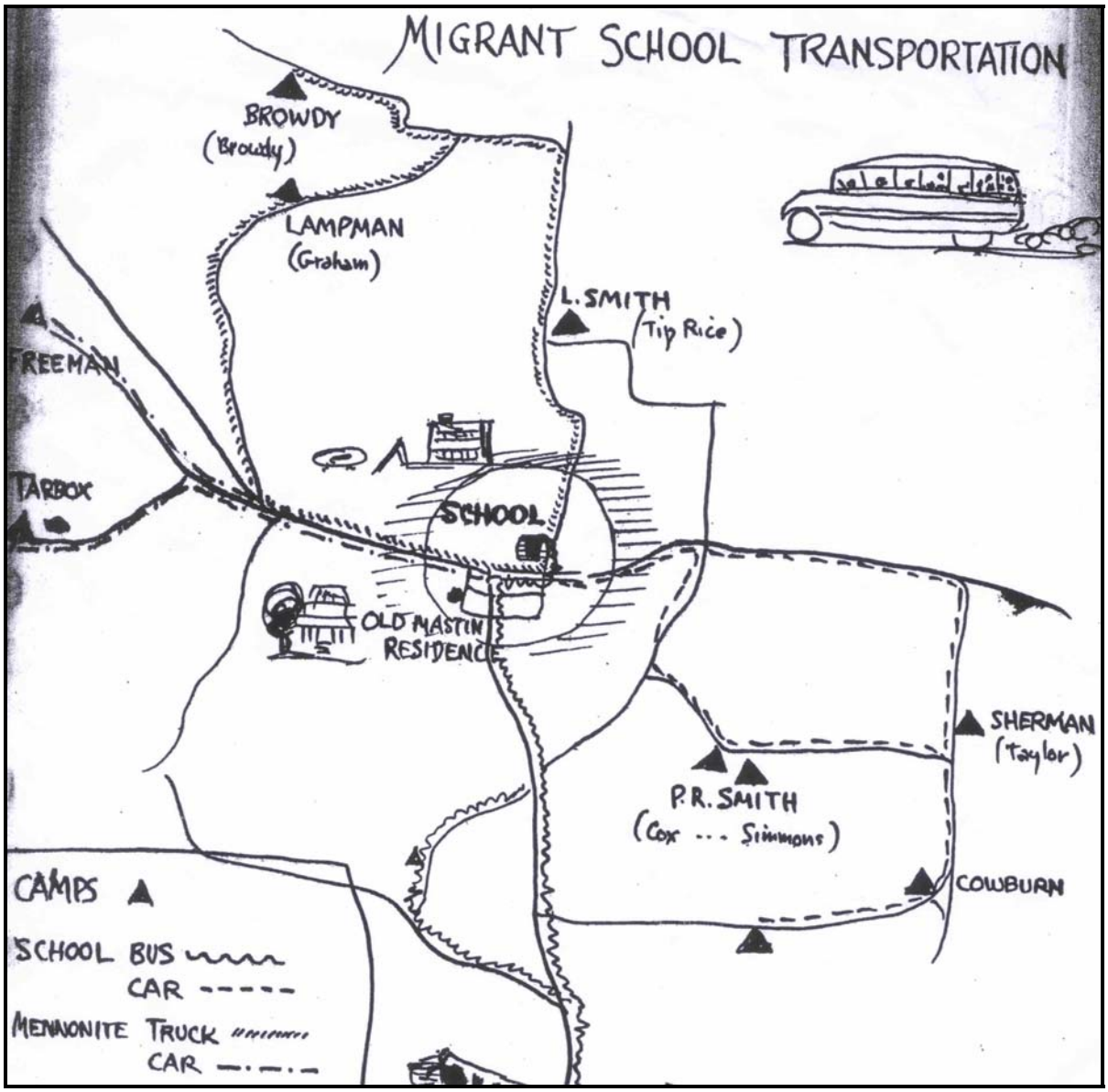


Basement barn converted for migrant housing, Potter County, 1950s. From Pennsylvania. Governor's Committee on Migratory Labor. Report, 1953.

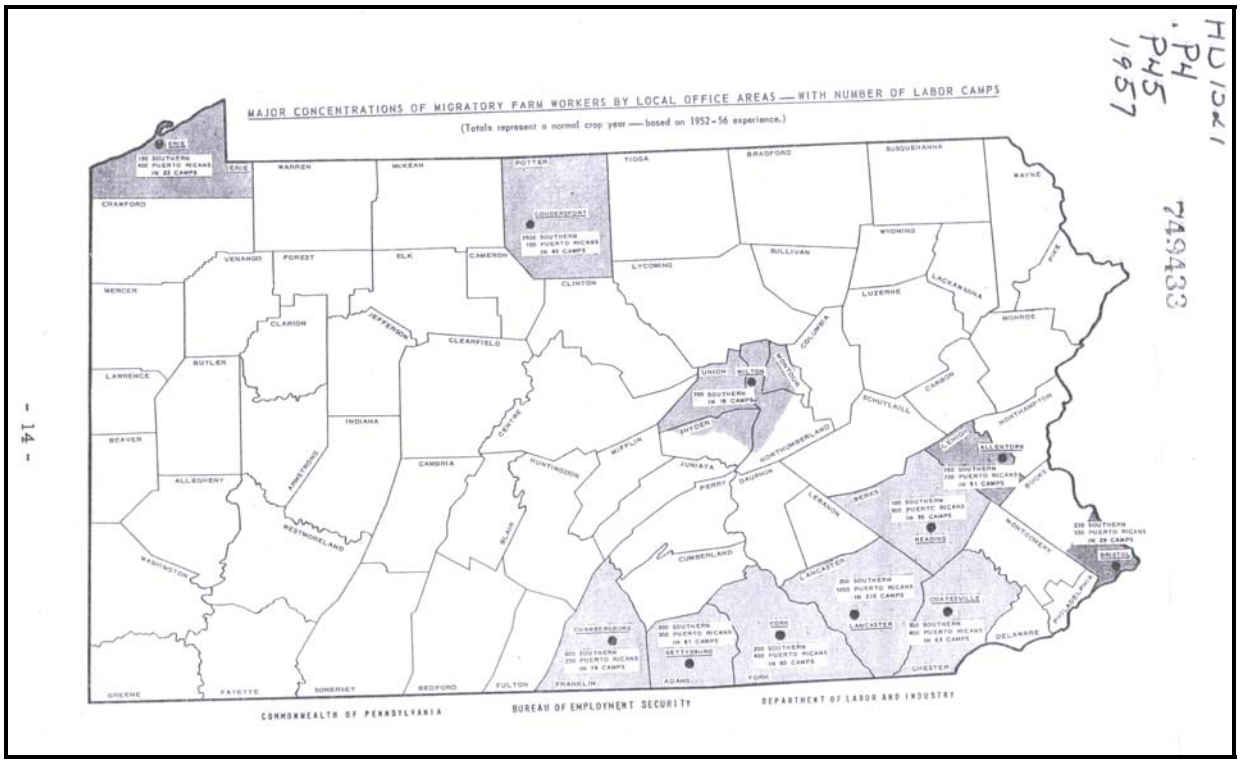


New housing under construction in Potter County.

Migrant housing in Potter County under construction From Pennsylvania. Governor's Committee on Migratory Labor. Report, 1953.



Hand drawn map showing migrant camp locations near Ulysses, Potter County. From Joseph Alessandro, "School for Migrant Children," 1955, PSU Annex.



Concentrations of Migratory farm workers. 1957. From Pennsylvania. Governor's Committee on Migratory Labor. Report, 1957.

The 1954 Lafayette College consulting group visited 28 camps in Potter County. They found that "the housing conditions of these camps were definitely inferior to the average of conditions found in all camps inspected. In fact, a majority of the county's camps were classified "poor"…[32] They scored especially badly, the group reported, in means of egress and refrigeration. The committee attributed this situation to the resistance of the county inspector; the lack of a separate budget for the sanitarian; and the already low value of farm land and buildings in the county.

[32] "Migratory Farm Labor in Pennsylvania, Report of the Lafayette College Consulting Group to the Governor's Interdepartmental Committee on Migratory Labor, Commonwealth of Pennsylvania," 48-52.

Landscape Features, 1940-1960

Landscape features from this period would include many common throughout the Northern Tier: farm ponds, utility poles, improved roads, tree plantings, strip cropping, ornamental plantings, wood-and-wire fencing, treelines, farm lanes, pasture. Field work did not ascertain any specific landscape features that would relate to potato or cannery-crop agriculture. See Northern Tier grassland for more discussion.

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