***NOTE: Before reading this narrative please read the Introduction and User's Guide to the MPDF, particularly the section "Conceptualization (Historical Farming Systems and Historic Agricultural Regions)."***

# XI. Southwestern Pennsylvania Diversified Agriculture and Sheep Raising, c1840-1960

### *Location*

The Southwestern Pennsylvania Diversified Agriculture and Sheep Raising region encompasses all of two counties, and parts of several others, in the state's southwestern corner. All of Washington and Greene Counties are included in the region, and they are by far the most important. Greene County, in the extreme southwest, borders on West Virginia and Ohio; to its immediate north, Washington County shares a border with Ohio on the west and Beaver and Allegheny Counties to the north. Fayette County shares most of the region's eastern border. Portions of Allegheny, Beaver, Mercer, and Lawrence also historically belonged to the region. Development in Allegheny and Beaver has effaced much of the farming history. In Mercer and Lawrence, however, the region's boundaries trace roughly an oval around the urbanized areas in each county's center. Mercer and Lawrence, though they share in the regional characteristics, are significantly less important than Washington and Greene, so they receive less attention here.

> See the map of historic agricultural regions in figure 2 of the Introduction and User'
> Figure 1: Map of Region

### *Climate, Soils, and Topography*

The region is part of the un-glaciated portion of the Allegheny Plateau and is topographically extremely hilly, and deeply dissected in most places, with hills ranging between 1300 and 1450 feet in elevation, rising about 3-400 feet above the valleys below. Numerous short streams drain to the Monongahela on the region's eastern border.[1] Greene County is more hilly than the other counties. Soils are alfisols with sandstone, shale, and limestone as the parent rock.[2] Their agricultural capacity is modest. The Pittsburgh coal seam underlies much of the region, and there are also oil and natural gas deposits. Over time, erosion has compromised agricultural potential.

The climate zone is classified as "humid continental warm summer." The region receives about 40 inches of precipitation annually, most of it in the form of rain. The growing season ranges from 150 to 175 days.[3]

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[1] Richard Beach, *Two Hundred Years of Sheep Raising in the Upper Ohio Area, with Special Reference to Washington County, Pennsylvania* (Monongahela, PA: Bicentennial Commission of Washington County,PA), 1976, 8.
[2] E. Willard Miller, ed., *A Geography of Pennsylvania* (University Park, PA: Penn State Press, 1995), 69, 70, 71.
[3] Beach, *Two Hundred Years of Sheep Raising*, 9.

## *1830-1850: Diversified Farming and the Rise of Sheep Raising*

### *Products, 1830-1850*

The periodization for this narrative begins at the point when a well settled rural economy had become established. Sources from the late 1820s to mid-century indicate that the region's agriculture was highly diversified. A highly varied mix of cultivated crops (corn, wheat, oats, rye, buckwheat, hay), along with an ever expanding proportion of pasture land, supported an emerging system of stock raising and droving. Geographer Charles Trego enumerated among Washington County's products "wool, wheat, corn, oats, flour, horses, hogs, cattle, sheep, &c." In Greene County, wheat was the main agricultural product, mainly ground into flour before market, but also converted to whiskey; another geographer wrote that "large quantities of flour and whiskey" were sent to Pittsburgh and then to New Orleans." A good bit of the grain crop went to feeding stock, "of which a large amount, particularly of hogs and cattle, is raised and driven eastward for sale." Baltimore and eastern Pennsylvania were principal destinations. There was a seasonal rhythm to droving: "After the spring droves are disposed of, then comes on the fat cattle, then horses, and then lean cattle again." Greene County also produced 100,000 pounds of maple sugar during this period, making good use of forest resources.[4]

The immense droves of animals coming out of the region were herded along several main routes. The National Road (or National Pike) swung up into Pennsylvania from Ohio, running through Washington, Pennsylvania toward Cumberland, Maryland and points east. A bit further north, the Forbes Road ran from Pittsburgh to Bedford and then eastward. Along these well travelled ways, wagons headed west with emigrants and their foundation herds; livestock trotted along in either direction. In general, smaller groups of breeding animals went west, and large droves of animals destined for slaughter went east. Sheep and cattle did better than hogs on the long haul, so they came to predominate. Two kinds of sheep were driven eastward: "stock sheep" (or “feeders”) for fattening in eastern Pennsylvania and the Potomac Valley; and mutton sheep (or “muttons”) sold directly to butchers in Baltimore and Philadelphia. Declines in grain prices stimulated droving: "In fact," remarked historian Edward Wentworth, "the driving east of fat livestock was the only means of marketing the western corn crop." (He inexplicably omitted whiskey from his calculations.) Between 1817 and 1820, droves increased considerably, reaching into the tens of thousands. Looking back on this heyday of droving, James Russell Lowell reminisced that the mixed herds learned a daily routine, with sheep becoming habituated

[4]Charles Trego, *A Geography of Pennsylvania for the use of schools and private families.* Philadelphia: Key and Biddle, 1835, 364; Rebecca Eaton, *A Geography of Pennsylvania, for the Use of Schools, and Private Families.* Philadelphia: Key and Biddle, 1835, 202; "Trade of Greene County," *Hazard's Register*, April 1833, 239; Trego, 253.

to falling in behind the cattle. Long-distance droving lasted until railroads made the practice obsolete, around the mid 19th century.[5]

Hazard's Register in the late 1820s showed that the area was already achieving special notice for sheep raising. Writing from Washington County, a group of petitioners estimated that sheep numbers in the county were around 160,000, having rapidly increased in the last few years. They continued:
one half are full and mixed blood Merinos -- the other half coarse wooled or native sheep producing between four and five hundred thousand pounds of wool: about one half of this quantity is consumed within ourselves, (principally the coarse wool) the balance is sold to neighboring manufacturers, or sent east of the mountains.[6]

By 1843 Washington County was among the foremost wool growing counties in the Union with 482,603 pounds annually from 223,000 sheep. In addition, many sheep were "driven to the eastern counties for sale." That same year, Sherman Day's Historical Collections of Pennsylvania described a region where luxuriant meadows occupied the lowlands, and pasturage the hills; the land was cleared to the hill tops; grains and fruits were grown; and immense sheep flocks produced almost a half million pounds of wool. Even discounting for boosterism, these were impressive figures. The town of Washington was a principal wool-trading entrepot. A report published in 1849 noted that “Philadelphia was formerly our principal market; but recently most of our wool has been sent directly to New York and New England.”[7]

The 1850 census showed that across the region, average sheep numbers significantly exceeded statewide averages. Extra sheep accounted for the almost all the difference between county and state averages.

Figure 2: Livestock, 1850 Greene, Washington, Mercer and Lawrence counties

Sheep raising in western Pennsylvania developed as part of a broader shift. New England and New York (especially the upper Hudson Valley) had been the preeminent sheep raising regions in the colonial and early national periods, and Ohio soon joined them. In 18th-century Pennsylvania as well, virtually every farm had a small flock. Early in the nineteenth century, several developments combined to redistribute sheep geographically. One was the rise of cotton and resultant decline of woollen textiles, which made sheep raising economically difficult,

[5] Edward N. Wentworth, *America's sheep trails: history, personalities.* Iowa State College Press, 1948, 65-66; Richard Beach, *Two Hundred Years of Sheep Raising in the Upper Ohio Area; with Special Reference to Washington County, PA.* Monongahela, PA: Bicentennial Commission of Washington County, PA. 1976, 15;
[6] *Hazard's Register*, February 23, 1828, p 128.
[7] Trego, *A Geography of Pennsylvania* , 364; Sherman Day, *Historical Collections of Pennsylvania, (*Philadelphia: G.W. Gorton, 1843), 658, 664; U. S. Patent Office Annual Report, 1849, 256.

especially in the older regions. There, where land values tended to be high, farm families needed better income producers than sheep, which took up a lot of acreage for comparatively low return. A second factor was competition from wool imports, from Britain and its empire as well as South America. A third was competition from the newly developing western states, that is the Old Northwest and western Pennsylvania. As these areas opened up, sheep raising shifted westward because farmers in the west (many migrants from New England themselves) could raise them more cheaply than in the east. [8] And finally, grain farmers in the lower Ohio Valley and soon in Illinois and Michigan took away cash grain markets for farmers in southwestern Pennsylvania, so the Pennsylvanians sought other ways to more profitably market their grain. In 1833, for example, Greene County residents reported that a shift to livestock raising had taken place when, with settlement in the Ohio River Valley, their market for grain and flour in New Orleans was pre-empted.[9]

The soils, terrain, climate, and vegetation in southwestern Pennsylvania, eastern Ohio, and northwestern Virginia (now West Virginia) were well suited to sheep raising. Sheep raising was an ideal hill-country pursuit, because by grazing sheep, a herdsman avoided the perils of plowing and harvesting on steep slopes, and prevented erosion at the same time. Sheep required relatively little labor. They could get by (though perhaps not thrive) with rudimentary shelter. And even capital requirements were not always high, since in some instances aspiring herdsmen could rent sheep.[10]

Early sheep grazing in the region was aimed primarily at wool production. Mutton and lamb were not very popular meats among Americans, though sheep were always sold for slaughter; so early breeds were mainly chosen with regard to their wool quality. The most famous importation of sheep to the US was the influx of Spanish Merino sheep which had taken place early in the 19th century. A few came in around the turn of the century, but the most notable importation occurred when the Spanish government, desperate to stave off financial and political instability during the Napoleonic Wars, sold off thousands of prime Merino sheep which had been confiscated from their owners. Twenty thousand came to the United States in a single year.[11] A Merino "craze" swept the country briefly when Jefferson's Embargo kept out foreign

[8] This discussion is based on Stevenson Fletcher, *Pennsylvania Agriculture and Rural Life*, volume 2, pp 265-268. Fletcher says that Pennsylvania sheep numbers peaked in 1850 at 1.8 million, but this is incorrect as the 1870 figures are higher, as are figures from the Civil War years. See also Robert Leslie Jones, *History of Agriculture in Ohio* (Kent, Ohio, 1983), especially pp 140-155; James Westfall Thompson, *History of Livestock Raising in the United States;* and Paul Wallace Gates, *Agriculture and the Civil War*, 158-9; Beach, *Two Hundred Years of Sheep Raising*, 5.

[9] *Hazard's Register*, Volume XI, April 1833, 239.

[10] For a perceptive discussion of this point, see Jan Albers, *Hands on the Land: a History of the Vermont Landscape*, 144-149. A rental agreement is described in *Hazard's Register* volume XIV (August 1835), 125; *Special Report on the History and Present Condition of the Sheep Industry*, 485.

[11] USDA Bureau of Animal Industry. *Special Report on the History and Present Condition of the Sheep Industry of the United States.* Washington, DC: Government Printing Office, 1892. Prepared under the direction of Dr. D. E. Salmon, by Ezra Carman, H. A. Heath, and John Minto, 190-191.

competition, then prices settled to more realistic levels. These animals and their progeny helped to establish the American flock. One observer in 1811 witnessed no fewer than six hundred Merinos being driven through Robbstown, Pennsylvania, now New Stanton, about forty miles east of present day Washington, Pennsylvania.[12] This was to be the heart of the Pennsylvania wool growing region.

The original Spanish Merino was renowned for its fine, long-staple wool. In fact, the Merino produced a particular class of wool that was labeled "fine wool" in the industry. The "fine" qualities stemmed from the extremely small diameter of typical fibers, and from the pattern of microscopic structures in the fiber's outer layers that imparted smoothness. The wool was used in manufacture of fine broadcloth and worsted, by local manufactories and later by manufactories on the east coast, now accessible to western wool growers because of improved transport.[13] The Merinos were not a hardy breed, though, and reproduced in the Americas at alarmingly low rates. North American breeders set about crossing them with local animals, which were the progeny of animals brought over at the time of initial settlement. Credit is often given to a Mr. Hammond for establishing the "American Merino" in the mid 1850s.[14] This cross was shorter and more compact than the Spanish Merino, and its wool made up a greater percentage of overall body weight. A locally specific breed of renown was the the Victor-Beale Delaine Merino of Washington County, a cross between the old Pennsylvania Black Top Merino and the Spanish Merino; "kept in large flocks,without housing and without pampering.". Their "short, sharp, and shapely hoof" supposedly helped them keep from getting foot rot.[15] Other American Merino variants (for example, the "Saxon" Merino) had better carcasses for mutton, and the deep wrinkles that had distinguished the Spanish ancestors were bred out. [16] The American Merino ultimately combined fine-wool production with improved mutton qualities. During the period up to about 1850, this process of breed development was taking place, but had not yet culminated.

Given that sheep growers could make money from their animals in several ways, they manipulated the composition of their flocks. Wethers (castrated males) yielded the best fleece; a few rams were kept for breeding; and ewes for increasing the flock.[17] In times of good prices, there was money to be made; in 1847 an excited correspondent reported to the US Patent office that the Washington County clip in that year was "estimated at 1,300,000 pounds!" "… the large

[12] Robert Leslie Jones, *History of Agriculture in Ohio* (Kent, Ohio, 1983), 141.
[13] Beach, *Two Hundred Years of Sheep Raising*, 15.
[14] *Special Report on the History and Present Condition of the Sheep Industry*, 214-215, 434
[15] Stephen Powers, *The American merino: for wool and for mutton*. ( New York, 1887), 26, 25.
[16] Stephen Powers, *The American merino: for wool and for mutton : a practical treatise on the selection, care, breeding and diseases of the merino sheep in all sections of the United States* (1887), 21, 25-6; Henry Stewart, *The domestic sheep: its culture and general management.* (Chicago: American Sheep Breeder Press, 1900), 36; Black Top Breeders Association of Washington County, PA, Black Top Sheep Register, volume 1 (Washington, PA, 1885), 17-19.
[17] Beach, *Two Hundred Years of Sheep Raising*, 17.

sum of $487,500 was realized by the farmers of Washington County for this year's clip of wool!" [18]

Though breeding had improved the quality of western Pennsylvania flocks by the mid 19th century, sheep grazing was by no means a certain path to prosperity. Prices fluctuated quite sharply, affected by conditions abroad, ever-changing tariffs, and the increasing popularity of cotton goods. In general, wool growing in the eastern US seems to have been only marginally profitable in the 1840s and 1850s. Graziers complained about the depredations of dogs and wild predators. Overall, the number of sheep in the North did not keep pace with human population growth. But for western Pennsylvania and eastern Ohio farmers, sheep raising was a "niche" that seemed to work reasonably well given their particular conditions.

Because it was too risky to pursue exclusively, sheep raising took place within the context of a diversified agricultural economy. The 1850 census for Washington and Greene Counties reveals a rather highly developed, large-scale diversified agriculture with sheep as its most exceptional feature, while Mercer and Lawrence had a similar but less pronounced profile. Greene County farms were worth far less on a per-acre basis than statewide, while Washington County farms were about average, ($30 per acre). The average farm in both counties was quite large by Pennsylvania standards -- 169 acres in Greene County, 140 in Washington County, when the average Pennsylvania farm was only 117 acres. Mercer and Lawrence farms were right about at the state average. Improved acreage in the southwest far outstripped the statewide average -- over 90 acres, as opposed to just 55 in the state as a whole. Southwestern Pennsylvania farms produced slightly more field crops than the average Pennsylvania farm, mainly because they grew more corn. Wheat, oats, and hay production approximated or exceeded state averages (on a per-farm basis), while buckwheat, rye, and potatoes were produced in lesser amounts than statewide (though these were relatively unimportant everywhere). The grain, especially corn and oats, would have been fed to livestock, and hay also would provide fodder. Horses, milk cows, and beef cattle were as common on Greene and Washington County farms as elsewhere in the state[19](on a per-farm basis), and swine were a little more numerous than average. So, overall, the southwestern Pennsylvania farm at this moment claimed a diverse crop and livestock mix.

Figure 3: Farm crops, 1850, Greene, Washington, Mercer & Lawrence counties

Accounting for larger sized farms in Washington and Greene Counties, and average sized farms in Lawrence and Mercer, crop production was at or below state levels.

[18] U. S. Patent Office Annual Report, 1847, 211.
[19] On a per-farm basis; cattle were declining as a proportion of grazers overall.

Despite their much greater than average size, these farms were operated with significantly less machinery than the average Pennsylvania farm. All four counties had below average machinery values, and this was magnified in the case of the larger Washington and Greene county average farm size. The reason for the high improved acreage and low mechanization rate is because pasture (rather than tilled acres) accounted for such a large percentage of improved land. The census definition of "improved" land was land that was cleared and in use for grazing or crop production (even if fallow), so pasture would be included. Sheep numbers dramatically outstripped statewide averages, with the average Washington County holding at 100 per farm, Lawrence at 48, Mercer at 25, and Greene at 28, while the average Pennsylvania farm had just 14 sheep. Some townships averaged over 200 sheep per farm. In fact, by 1850 sheep surpassed other competing grazers (cattle) in terms of absolute numbers and in the acreage of pasture taken up; between 1840 and 1850 the absolute number of sheep in the extreme southwest rose and the number of neat cattle actually declined, as did the number of horses.[20] It is possible, though difficult to document, that tilled acres were converted over to pasture as the number of sheep increased.[21] Geographer Richard Beach estimated that 50 percent of pasture acreage in Washington County around 1850 was being grazed by sheep.[22] Pastures did not require frequent plowing or seeding; they were perennial grasses (red clover, timothy, and bluegrass) that, though not indigenous to the area, were apt to grow spontaneously or at least with minimal intervention.[23] The pasture grasses were cropped by the sheep, again eliminating the need for machinery for this job. One correspondent noted that Washington County sheep men planted timothy seed on the hilly slopes, taking care to plant so as to avoid erosion. "To keep our land we plough it only once in 8 or 10 years."[24]

Figure 4: Value of farm implements, 1850, Washington, Greene, Mercer & Lawrence counties

***Labor and land tenure, 1830-1850***

Most of the primary sources relating to labor in this system pertain to specific tasks, but are not specific to the four- county region. Nonetheless it is reasonable to assume that labor patterns held consistently in a very wide area; and given what we know about the topography and production patterns, we can make defensible inferences. All in all, family and neighborhood labor predominated in this period. The crop regime – which resulted in about 200 bushels each of corn, wheat, and oats – would require labor for ploughing, sowing, harvesting, and processing (threshing or shelling). In this era of low mechanization, hand tools prevailed. Communal

[20] Beach, *Two Hundred Years of Sheep Raising*, 21.
[21] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 63: "grassland farming" succeeded crop farming, taking over previously cultivated areas and halting deterioration of the soil. See also *Special Report on the History and Present Condition of the Sheep Industry*, 484.
[22] Beach, *Two Hundred Years of Sheep Raising*, 21
[23] *Special Report on the History and Present Condition of the Sheep Industry*, 483.
[24] U. S. Patent Office Annual Report, 1850, 10.

sharing of work was thus very important if the crops were to be harvested quickly. Published sources such as almanacs and travel accounts suggest that while men probably performed the heavy work of plowing, most other tasks were shared by men and women, and often children as well. For example, during haying, men cut the hay and women followed behind to form windrows.[25] Men and women butchered together; this work included not only the slaughtering, but also curing, sausage making, and so on. Women would have been responsible for tending and milking cows and making the 250 or so pounds of butter produced on a typical southwestern farm. Where sheep husbandry was concerned, the evidence suggests that few farmers hired shepherds; the animals apparently grazed without much human intervention. Some early accounts maintain that women did the shearing and that fleece were washed and sometimes fulled through communal "bees."[26] As flocks got bigger and sheep keepers became more serious about breeding and productivity, probably some of the larger operations employed hands specially assigned to sheep herding, breeding, feeding, and care.[27] A great many subsistence items were raised in the farm garden and orchard, and those required tending, harvesting, and processing; again, these tasks were shared, but probably women did more than men. Droving may have taken male labor away from the farm at certain times; but fulltime drovers did most of this work. They sometimes hired farm boys to help along the way.

The level of mechanization in the four counties was below the state average. This means that overall, mechanization levels were low, because farms (in Washington and Greene) were so much larger than the state average. Such a pattern would be expected for an agricultural economy in which grazing played so prominent a role.

By mid-century, since so much acreage was cleared, forest products did not present opportunities that were available in other parts of the state. Maple sugar production, for example, was modest or negligible as was lumbering, a result of rapid deforestation. So seasonality on southwestern Pennsylvania farms was rather different from (for example) in the Northwest. Haying and corn and wheat harvesting would peak beginning in June and roll into the early autumn; dairying, too, tended to concentrate work in the warm months. Sheep shearing took place in late spring or early summer. Wintertime months were slower; threshing , fence repairs, and other tasks took place then.
Tenancy figures were not collected on an official basis until 1880, but farm tenancy had long been present in the region and state. It was a means through which young farmers could acquire capital and eventually move on to landowner status. Historians Lee Soltow and Kenneth Keller conclude that tenancy in Washington County around the turn of the century existed in a

[25] Sally McMurry, *From Sugar Camps to Star Barns: Rural Life and Landscape in a Western Pennsylvania Community* (University Park: Penn State Press, 2001), 10-11.
[26] John McDowell, "Agriculture," *The Centennial of the Organization of Washington County, Pennsylvania* (Washingon: Washington County Historical Society, 1881), 68.
[27] Beach, *200 Years of Sheep Raising*, 15.

relatively benign form, in which tenants owned appreciable personal assets, and landlords were local landowners rather than absentees.[28]

### *Buildings and Landscapes, 1830-1850*

A number of fine early 19th century houses were documented in Washington County survey work. However, very few barns or outbuildings were listed as predating 1850. This is a little surprising given that agriculture was so well developed during this period. Several explanations can be offered for the discrepancy. One could be that field surveyors were conservative in their dating estimates. However, this does not seem likely, because based on the barn style, form, and materials documented in digital photography on the survey forms, most barns legitimately can be dated after 1850, and indeed after 1870. Outbuildings are notoriously difficult to date in any case. Two interlocking explanations may be offered; these may require revision as more information is researched. One is that even as late as 1850, this grazing economy was architecturally non-intensive. In other words, sheep were afforded minimal shelter, and possibly other livestock as well. Since so many animals were destined to be driven out, shelter would be needed only for breeding stock and work animals -- a modest stable would suffice. Hay and straw could be stored in ricks or stacks, or in small, insubstantial hay barns, obviating the need for large barn storage areas. And crops could be stored in granaries and corn cribs. A second explanation depends on knowing what came next. There would come a huge wool boom in the 1860s and 1870s; most barns surveyed date from this period. These new structures may have replaced older ones.

#### *Houses, 1830-1850*

Previously documented nineteenth century domestic rural architecture in Mercer and Lawrence Counties shows a varied repertoire of housing, combining New England-derived forms with forms more common in southern and central Pennsylvania. The Historical Resources Inventory for Mercer County[29] includes the Howard House in Findley Township, a single story building executed in brick, built 1848. The Stranahan House in East Lackawannock Township was a simple, one and one half story gabled structure, built in 1828. Upright-and-wing houses in the inventory date respectively to 1860 (the Sellers House, Fairview Township) and the 1830s (Byerly House in South Pymatuning Township). These examples suggest a New England / upstate New York provenance in their proportions and classicist stylistic detail. In the 1877 local history, several images (for example Nathan Morford's house, a full blown New York style Greek Revival house with central block and two one-story wings), showed that the Yankee-Yorker habits stretched down to Mercer and Lawrence Counties. Lawrence County's historic

[28] Lee Soltow and Kenneth Keller, "Tenancy and Asset-Holding in Late Eighteenth-Century Washington County, Pennsylvania," *Western Pennsylvania Historical Magazine*, January 1982, 1-17.
[29] *Historical Resources Inventory for Mercer County*. Prepared by the Mercer County Planning Commission, 1977.

resources include a “Salt Box House” dating from after the 1830s,[30] further demonstrating the strong association with New England. However, others attest to the mixed cultural origins of the population. Fullterton Mitcheltree's farmhouse in Mercer County, for example, was shown in the 1877 history as a simple, two-story, three-bay gabled house with ell. The Courtney House in Liberty Township (shown in the cultural resources inventory) was a five-bay, two-story structure with an integral two-story porch reaching across the entire front eaves side. The shallow pitched gable roof and two gable end windows add features that are more commonly associated with German Pennsylvania and the southwestern portion of the state. The Byers House in Lackawannock Township was another five-bay, two-story structure.[31] Durant's 1877 history also shows a Gothic Revival cottage (page 63). A great many plain four- and five-bay houses are also depicted there. Website archives from Mercer County (the Old Black farm, Grove City) show a generic L shaped frame house with Victorian trim. In Lawrence County, this mixing was also evident. The A. I. Allen Farm house, for example, a three bay, two-story structure with a shallow roof pitch, center chimney, walk-in basement, and a two-story porch reaching to the ground level, has characteristics found in German central and southern Pennsylvania.[32] Website photo archives show that "national" styles such as the Italianate were popular here in the nineteenth century also. Field research did verify that this mixing is more pronounced in Mercer and Lawrence Counties.

In Washington and Greene Counties, by this period, substantial farm houses were being built. The surviving examples are probably not representative of period housing, simply because less substantial houses tend to survive at lower rates; but they do suggest that farming paid well in this period. At survey sites 802426, 802253, and 802418, for example, there are fine early 19th century Federal brick houses. The four- and five- bay house continued to be popular into the mid 19th century. Similar designs were executed in wood as well. These houses generally borrow from a cultural repertoire associated with Anglo-American forms, particularly the I-house. They are grand versions of the one-room deep, two story, center passage house that Henry Glassie analyzed in Folk Housing in Middle Virginia. A few, such as the Greek Revival cottage at survey site 254, represent popular national styles of the mid 19th century. In general, it seems that this area has more affinities with Ohio and upper Virginia than with eastern Pennsylvania.

Figure 5: Brick house, Washington County.
Figure 6: One story Greek Revival house, Washington County.
Figure 7: Brick “I” house, Washington County.
Figure 8: Frame “I” house, Washington County.

[30] *Lawrence County Historic and Geographic Report*. Prepared by the Lawrence County Planning Commission, 1976. See page 11 and 21.
[31] *Historical Resources Inventory for Mercer County*. Prepared by the Mercer County Planning Commission, 1977.
[32] Pennsylvania Historic Survey Form files, PHMC.

*Barns, 1830-1850*

Pennsylvania Barn: The Pennsylvania Barn and its variations appear in the southwestern counties. The cultural and agricultural makeup of Mercer and Lawrence Counties, in particular, resulted in the appearance of more Pennsylvania Barns there than in the other two counties. The Pennsylvania barn's main diagnostic feature is the projecting 7-8 foot forebay, or overshoot. The barn is banked, and organized such that the upper level consists of central threshing floor(s), flanked by mows, and a granary (sometimes in the forebay, sometimes next to a mow on the bank side). The Pennsylvania barn almost always has a gable roof. On the lower level, stables and stalls (organized crosswise to the roof ridge, separated by alleyways for humans) housed horses, milk cows, beef cattle, and sometimes sheep or hogs.

The Pennsylvania barn is a highly flexible form; it ranges in size from just twenty feet long to over a hundred. It can accommodate features such as an "outshoot" or "outshed" that would extend back from the bank side; multiple threshing floors and haymows; a root cellar; a corncrib/machinery shed extension; a machinery bay on the lower level; or a 'horse power' on the bankside. The forebay might project unsupported, or it might have supporting end walls or posts. Nomenclature for these various features varies, too. But in order to be considered a Pennsylvania barn, a barn must have the essential features: a projecting forebay and banked construction, almost invariably with the eaves side in the bank. The Pennsylvania Barns documented in southwestern Pennsylvania fieldwork often had posted forebays. These are common in the Ohio-Pennsylvania border region and in Ohio they are often called "Pomeranian" barns.[33]

The Pennsylvania barn appeared late in the 18th century and flourished from about 1820 to about 1900, but in the southwest surviving examples date only from the mid 19th century and there exemplifies a diversified grain-and-livestock agriculture with particular attention given to sheep. The examples given below have illustrations dating from the late 19th century, but the buildings could date from an earlier period, so they are included here.

Figure 9: Pennsylvania barn in East Lackawannock Township, Mercer County.
Figure 10: Posted Forebay barn, Scott Township, Lawrence County.
Figure 11: McCollum farmstead in Lawrence County.
Figure 12: Posted forebay barn, Washington Township, Lawrence County
Figure 13: R. J. Davidson's farm.
Figure 14: James M. Lawrence farm..

[33] Stephen C. Gordon, *How to Complete the Ohio Historic Inventory*. Columbus, Ohio: Ohio Historic Preservation Office, 1992, page 145. Examples of posted forebay barns are: Lawrence County, Scott Township, site 073-SCO-001; 073-SCO-007; 073-WAS-007; in Mercer, 085-WIL-002.

In Washington and Greene Counties, there are fewer mid-19th century barns remaining on the landscape. These are all relatively small, tripartite structures. Some were all on ground level, others had multi level access. At site #802275 in Washington County there is a gable-entry bank barn with a cut stone foundation. It had small doors and one window in the basement level, for livestock ingress and egress; and the upper level likely was used for machine storage, hay storage, and grain storage. At site 802332 in Washington County a barn dated c 1850 looks like it may be an English barn.[34] This barn had its entrance in the long side and three sections consisting of hay bay, threshing floor, and stables. This multipurpose barn housed the absolute necessities of settlement-era farming: draft animals and a few cattle to over winter; perhaps a few sheep, a few tons of hay to feed them; a place to thresh grain and store equipment.

Figure 15: Log barn, Washington County.

At site 802467 in Washington County, there is a mid 19th century log barn. It seems to be organized on similar principles to the English barn, but it has a shallow basement, probably for livestock. At sites 802294 and 802369 log barns were probably double-crib bank barns before alterations converted them later. There are also log crib barn at sites 802857 and 802860 and 802850 in Greene County. These barns likely functioned in the same way that settlement-period barns did. They housed livestock, probably over wintering a few select animals; stored some of the hay crop and perhaps some grain; and had a threshing floor.

These barns reflect several aspects of southwestern Pennsylvania agriculture at mid-century. One was that many animals were either driven out or minimally sheltered. Another is that some hay and straw were probably stored outdoors in stacks or ricks. And finally, a diversity of cultural repertoires were represented, with no one tradition predominating.

Figure 16: Log barn, Washington County.

*Springhouse, 1830-1850*

A spring house is a structure built over a spring or creek. Materials can be frame, log, brick, stone, or concrete block. Spring houses generally have a gable or shed roof, but a few have pyramidal roofs. The lower portion is usually masonry, since water either runs through it or rises up into it. Spring houses have a square-ish or rectangular footprint. Sometimes they are banked. Usually they are only one story, but sometimes they have working spaces over the ground-floor level. A gable end door provides access. Few openings pierce the walls. Inside, there is usually

[34]An "English" barn is a frame, gabled, un-banked three-bay barn, also sometimes called the "thirty by forty" because of its most common dimensions. Henry Glassie calls them "three-bay", "Yankee," or "Connecticut" barns. Sometimes lean-to "cow house" sheds were added. Henry Glassie, "The Variation of Concepts Within Tradition: Barn Building in Otsego County, New York." *Geoscience and Man* 5 (June 10, 1974): 177–235.

a channel for water to run through, or to confine the spring; often there will be masonry or flagstone floors, and low ledges on which milk pans were set.

The purpose of a spring house is to protect a valuable water source, but also to provide a space with a constant, cool temperature for cooling milk and other perishables. The spring house's siting is determined by where the spring is; so with respect to the farm buildings, its location is unpredictable. Sometimes it's near the house, but springhouses can be found in a field. Spring houses in the southwestern Pennsylvania region represent the work of butter dairying. The average Washington and Greene County farm in 1850 produced over 250 pounds of butter per year. In Amwell, Chartiers, and Mount Pleasant Townships (Washington County), the average was significantly higher.

Figure 17: Spring house, Washington County.
Figure 18: Spring House, Washington County.
Figure 19: Log spring house, Washington County.
Figure 20: Springhouse, Washington County.

Washington County survey sites 802184, 802251, 802253, 802306, and 802367 also have mid 19th century springhouses.

*Granary, 1830-1850*
A granary is a structure devoted to storing threshed grain. Whether grown as a cash crop or for animal feed, small grains (principally wheat, oats, barley, and rye) were a valuable and highly vulnerable component of the diversified farm's product mix. So, secure storage for small grains has consistently been a priority. (Corn, another small grain, was stored in the ear in a specialized corn crib.)

Their typical characteristics include the following: wood construction; tight boarding, thus few if any windows; gable end pass doors and entry doors; interior bins, partitioned from one another; interior walkway. Very often, the granary was elevated off the ground, as a means of deterring rodents. Many of the granaries surveyed in the southwest were sited near the barn, or between a sheep barn and a multipurpose barn.

The freestanding granary seems to have been quite common in the southwest. Here, the Pennsylvania Barn, with its integral interior granary, was not as common a barn type as in the southeast and central portion of the state. In the early period of agricultural development, possibly the granary was necessary because there was so little barn space of any kind.

Figure 21: Granary, Washington County.

The dating for granaries is extremely imprecise. There are dozens of granaries documented in Washington and Greene County survey work, and survey crews dated most to the late 19th and early 20th centuries. This one may be a little earlier simply because the boards are relatively wide and the size small. It would not be rare to replace the piers on which the granary stood.

Figure 22: treelines, Greene County..

*Landscape Features, 1830-1850*
Landscape features including pasture, treeline, woodlot, specimen trees, stream, and meadow. Crop fields may retain their original location owing to soil fertility and topographical conditions, but crop field size is likely to be larger than historically would have been the case, because modern machinery requires room for maneuver.

In some cases boundaries within the farm may remain, for example between crop field and pasture. Woodlot and pasture locations may also have continued from historic patterns. Many roadways still follow portions of their historic paths. The National Road, Forbes Road, and many minor roads are good examples. These had an influence in shaping farmstead layout.

***1850-c 1890 The Civil War Era Peak Period***
*Products, 1850-1890*
While the 1850s saw mixed economic fortunes for sheep growers in general, the wool growing economy in the southwest continued its development. The "American Merino" breeding projects began to show encouraging results in the mid 1850s, with some specific breeds developed right in Washington County. Area wool growers found new markets among eastern manufacturers, increasingly accessible through the new rail system. Washington was connected to Wheeling, West Virginia by 1860, and to Pittsburgh in the 1870s; and Waynesburg and Washington were connected in the 1870s.

By 1860, Washington County, Pennsylvania was the nation's leading sheep county. Over 350,000 sheep were counted within its borders. (For comparative purposes, there were 46,805 humans in the county that year.)[35]

With the American Civil War came a boom in wool growing. The vast Union Army generated huge demand for uniforms and blankets. Moreover, since the cotton supply had been cut off, other fibers would need to replace it for civilians, too. Military historian Carol Reardon offers the following information about military uses for fine wool cloth:

> While enlisted men wore heavy wool uniforms manufactured for and issued by the U.S. Army, officers usually purchased their own tailor-made

[35] Paul Wallace Gates, *Agriculture and the Civil War* (New York, 1965), 158. There is a map in Beach, page 7.

> wool uniforms made of "fine cloth." The demand for these uniforms would have been constant throughout the war, since the cut of the uniform and the button arrangement differed from rank to rank. If a captain got promoted to major, he'd probably want to upgrade his uniform. New regiments with whole new sets of officers were raised throughout the war, so there would always have been a need for uniforms of this sort. Cassimere, a "light woolen" cloth, seems to have been a particularly popular choice for suits and uniforms. Apparently a good number of pre-war or early-war militia units that designed their own uniforms used cassimere cloth in their manufacture. …. As the war progressed and the original uniforms wore out, it got tough to replace them with goods of similar quality, and most soldiers reverted to the coarser government issue--but not always…Things like enlisted men's rank chevrons (sergeant and corporal stripes, for instance) could be made of cotton or wool worsted. …One other cloth with a wool base to it was felt, of course. Felt had many uses during the war, from hats to canteen covers. The higher quality felt came from the finer wools.[36]

During the wartime years, sheep numbers nationally rose dramatically as farmers responded eagerly to this new opportunity. Agricultural historian Paul Wallace Gates infers that the increase was achieved by withholding older sheep from the meat market, arguing that this is a valid inference because mutton prices rose during the period. Not only did sheep numbers increase, but each fleece weighed more owing to better care, feeding, and shelter. Overall, paper-currency prices for wool achieved an encouraging lift, but this was deceptive since by the gold standard, prices did not rise far above prewar levels. This was because imports from Britain, its empire, and South America continued essentially unabated. Nevertheless the voracious Northern woolen manufactories snapped up all they could obtain and so demand was brisk.[37]

During the war, the newly formed United States Department of Agriculture issued Monthly and Bi-Monthly Reports on agricultural production. These were not censuses, but rather estimates based on various reports issuing from localities, and also on responses to circulars the department sent out. As pioneering efforts in statistical data gathering, they probably fell short in many respects; yet the general picture they assembled is corroborated in other, impressionistic sources. They are critical for estimating the impact of war, because by the next census year (1870), circumstances would again change significantly. In May 1863, the department reported a 20 % increase over 1862 in the number of sheep in the Loyal States. In early 1864 the

[36] Email communication, Carol Reardon to Sally McMurry, March 4, 2008.
[37] Gates, *Agriculture and the Civil War*, 159-162.

department estimated that wool production in the Union had doubled, from about 50 million pounds in 1861 to a projected 109 million pounds in 1864. In Pennsylvania alone, sheep numbers went from 1.6 million to about 2.6 million in the same time period. The Secretary of Agriculture in the spring of 1864 reported that "there is no change in our agriculture so gratifying as the increase in sheep." In March of 1865 he also noted that not only had sheep numbers risen, but the weight of fleece had, on average, improved. From around 3.5 pounds per head, now "the general increase of the larger breeds, the substitution of Spanish for the Saxon merinos, and the greater care now bestowed upon the keeping of the flocks, have increased this average yield to at least 4 pounds."[38]

In all, the evidence points to the southwest's energetic participation in the wartime wool boom, though Washington County, as a fine-wool country, did not produce the types of wool in greatest military demand. Paul Wallace Gates points out that coarse wools were more prized for army purposes than the fine wool. It is not clear to what extent southwestern Pennsylvania participated in the trend discussed by famed sheep expert Henry Randall, in his introduction to the 1863 edition of his standard text The American Shepherd. Randall noted that "… a great change has taken place, as fine-wool sheep are gone, replaced by the 'improved English' breeds. These were virtually unknown 15 years ago. The war has further made matters urgent…"[39] Given the dramatic increase in sheep numbers, it is likely that both coarse and fine wool were raised in the southwest. Fine wool, too, was highly sought after, because civilians needed substitutes for cotton and the military needed fine wool for dress uniforms and undergarments. During the war, buyers from the east coast frequented Washington County and advertised their services in local newspapers. Sales of Spanish Merinos were also advertised in the paper in 1863. Growers' voices appeared, too, mostly in complaints about wool brokers' alleged dishonesty. [40] It is a little hard to escape the impression that the growers mainly hoped to extract large profits in a wartime situation. Fleece weights increased significantly during this period, and breeding efforts began to pay off, and to give the county a national reputation. Local sheep breeders helped to develop the Delaine Merino and the Black Top. Improved feeding and care also helped boost productivity. Greene County joined in the sheep boom; by the 1870s, numerous flocks of over 100 appeared there.

After the war, wool prices began to drop as the South recovered and the global cotton boom continued, and as the western United States developed its grazing capacity. Tariffs rose and fell depending on the national political situation. For a time, wool growers enjoyed protection, but by 1894 free trade asserted itself for good. These factors, compounded by expanding extractive

[38] US Department of Agriculture, Monthly and Bi-Monthly Reports, Spring 1864, 21; March 1865, 21.
[39] Henry Randall, *The Practical shepherd: a Complete Treatise on the Breeding, Management and Diseases of Sheep.* New York: the American News Company, 1863.
[40] *Washington Reporter and Tribune,* April 29, 1863; May 20, 1863; June 8, 1863; July 1, 1863; Greene County manuscript agricultural census for 1870.

industries, would eventually cripple the sheep grazing business in southwestern Pennsylvania.[41] It is important to recognize that as a fine-wool district, southwestern Pennsylvania preserved a competitive edge for a while longer after the national price decline set in. Indeed, in 1880, Washington County boasted the highest farm value in the entire state.[42] To be sure, farms here were larger than average, too, but nonetheless this speaks to the great prosperity sheep husbandry brought. The deeper effects of decline were not felt until the 1890s.

Where land use was concerned, the significant differences from the typical Pennsylvania pattern continued, if anything exaggerated. In 1880, the typical Washington County farm devoted, on a percentage basis, far more of its land to pasture and far less to woodland than the average Pennsylvania farm. About 60% of its acres was tilled (as compared with 52% in the state as a whole), but this is misleading, because more of that land would be in grass than on a typical Pennsylvania farm. Popular grasses and legumes included red clover, timothy, and bluegrass.[43] In Mercer and Lawrence Counties, land use patterns were closer to state norms; but sheep numbers on average were high there, in numerous townships exceeding 50 head per farm. [44]

Despite its sheep raising fame, the region's farm economy was still very much based on a mixed grain and livestock system. Where major grains were concerned, Washington County farms still out produced the average Pennsylvania farm – though probably because farms were larger, rather than because per-acre productivity was high. These grains were used primarily for feed, and as nurse crops,45 rather than as cash crops.[46] By 1880, Mercer and Lawrence County crop production had developed to a point where their cropland and production actually exceeded statewide averages. The region out-stripped state sheep raising averages by more than ever, primarily because by 1880, Pennsylvania as a whole only had eight sheep per farm. Otherwise, livestock numbers in the region varied. Washington County also had more swine than average; slightly more beef cattle than average; and about average numbers of horses and milk cows, and poultry. Washington County was beginning to develop a dairy industry; it slightly exceeded state averages in butter production per farm (384 pounds, well above subsistence levels), and in milk sales (143 gallons per farm per year) as well. This was a significant change from a position below state averages at mid-century. Richard Beach notes that this growth was geographically concentrated near Washington, Canonsburg, and Monongahela, and also along rail lines that led to Pittsburgh.[47] The industrial and extractive booms of the period created new population centers

[41] Beach, *Two Hundred Years of Sheep Raising*, 28.
[42] Discounting the urban counties of Philadelphia and Delaware
[43] *History and Present Condition of the Sheep Industry*, 483.
[44] *History of Mercer County, Pennsylvania* (Chicago, 1888), 207-216, notes that Mercer was third in the state in wool production and they had a Wool Growers Association beginning in 1868.
[45] A nurse crop is an annual grown in with the seeding of a perennial.
[46] *Report of the Farm Visiting Committee of the Washington County, Pennsylvania Agricultural Society, for the Year 1874*, Visit # 1.
[47] Beach, *Two Hundred Years of Sheep Raising*, 27.

and thus markets for farmers in the vicinity. In keeping with the grazing tradition, Washington and Greene Counties also had more beef animals than average in 1880. [Greene County figures unavailable as of April 6, 2008]Finally, the region had slightly more poultry numbers than the state average; a report from Greene County noted that "people are paying more attention to poultry…" [48]

Diverse family production flowered in these years. Farms were well established and families looked to gain a "competency."[49] As time went on, the meaning of a "competency" evolved away from something close to subsistence, and for many people it came to mean a life with an enhanced level of material comfort—not ostentation or excess, perhaps, but beyond the mere necessities. Architecturally it often meant more room, up to date furnishings, and better heating. Where food was concerned, it usually meant greater variety. New technologies, most notably the wood burning cook stove, helped to raise expectations for dietary variety. Old methods for processing and preserving foods (drying, pickling, smoking, etc) continued, and newer ones (notably canning and preserving jams and jellies with now inexpensive sugar) were added to the repertoire. Pies, jams, preserves, and baked goods became popular. These were created through the energies of women.

By the late 19th century, the farm family's "competency" was becoming elaborated all over the southwest. Most farms had mature orchards and well established vegetable gardens. Orchards supplied apples, peaches, pears, cherries, and plums. Often multiple varieties of each were raised, each having particular characteristics and purposes (cider, drying, sauce, etc) and staggered harvest times. Small fruits such as raspberries, gooseberries, blueberries, and strawberries were often cultivated.[50] The census figures do not capture ordinary garden production, but in this period it was considerable.[51] Period catalogues survive in plentiful numbers and they show that home gardeners could obtain seeds for an astonishing variety of garden crops.[52] A small sampling would include tomatoes, snap beans, peas, squashes, beets, asparagus, rhubarb, turnips, and carrots. Of course, many garden crops were also grown from seeds handed down over several generations. Bees were also kept on some farms.[53] Gathering continued as well, for wild fruits such as blackberries and huckleberries were plentiful, as were wild-grown walnuts and hickory nuts. Another 1896 summary mentioned over twenty fruits and vegetables commonly grown in Greene County.[54]

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[48] *National Stockman and Farmer* November 8, 1894, 13.
[49] For further discussion of this term, see the first section of this agricultural context on early agriculture in the settlement period.
[50] *National Stockman and Farmer*, August 23, 1894, 21.
[51] Washington County Agricultural Society, *Report of the Farm Visiting Committee… for the Year 1874* , Visit # 2 (Farm of Robert Buchanan).
[52] http://www.sil.si.edu/digitalcollections/SeedNurseryCatalogs/collection.cfm; http://ohsweb.ohiohistory.org/ohiopix/Image.cfm?ID=3159
[53] Washington County Agricultural Society, *Report of the Farm Visiting Committee… for the Year 1874* , Visit # 5.
[54] *Centennial edition : Greene county centennial, Aug. 26 & 27, 1896. The Independent, Waynesburg, Pa.*

Figure 23: graph, Washington County livestock, 1880.
Figure 24: graph, Washington County crops, 1880.
Figure 25: graph, Washington County land use, 1880.

***Labor and Land Tenure, 1850-1890***

As before, family members supplied much of the labor during this period. Farm tenancy figures show that in 1880 Washington had a higher tenancy rate than the state average (31 percent as opposed to 25 percent), while Greene, Mercer, and Lawrence Counties' tenancy rate were lower. Tenant farms were sometimes noted on county atlas maps. It is likely that access to land was a little more difficult there owing to high land values and competition from industrial and extractive organizations.

In most respects, the pattern of labor allocation followed a conventional division of labor according to gender and age. Women tended the garden and put up fruits and vegetables for the winter; typical tasks would include drying, canning, pickling, and making preserves. Women and children were responsible for poultry raising (for meat and eggs), and they were often assigned to feed swine, cattle, and sheep. Women churned butter and milked cows. Colonel A. Manchester of Independence Township told the Washington County Agricultural Society's Farm Visiting Committee in 1874 that his "ten very fine milch cows" were "all milked by Mrs. M. and her daughters, without hired help." The women and girls also made cheese, handled the "large and thrifty garden," and smoked meat in a "smoke house in the garret." (Visit # 1) [55] Everyone worked at haying time, during fruit harvesting season, shearing season, at threshing and reaping time, and at butchering time. Men handled the sheep; images in the Caldwell atlas depict men or boys (but never women) out in the sheep fold or chasing sheep with sticks. This made sense considering that women were responsible for so many duties in and near the farm house. Men did the shearing as well, either on their own or in cooperation with neighbors.[56] This job was probably more exclusively masculine than before. Still, women would need to cook for the assembled shearers.

Figure 26: Woman and children feeding poultry.
Figure 27: An entire family group posed in a large truck patch.
Figure 28: Women feeding poultry.
Figure 29: Two women with cow, note spring house in lower right, Washington County.[57]
Figure 30: Woman milking, Washington County, c 1876.

[55] Washington County Agricultural Society, *Report of the Farm Visiting Committee… for the Year 1874* , Visit # 1.
[56] Beach, *Two Hundred Years of Sheep Raising*, 32, 54.
[57] "Residence of the late Isaac van Voorhis, Carroll Township," *Caldwell's illustrated, historical, centennial atlas of Washington Co., Pennsylvania* (Condit, Ohio, 1876).

Figure 31: Woman feeding livestock.

***Buildings and Landscapes, 1850-1890***

As a boom period, this era saw many fortunes made, which in turn left an imprint on the landscape in the form of substantial houses, barns, and outbuildings. Survey work documented many houses dating to this time period. Barns, too, proliferated. A particular adaptation of a common type seems to have characterized the sheep economy. Prominent outbuildings from the period included granaries, spring houses, corn cribs, hay barns, sheep sheds/houses, machine sheds, hog houses, and carriage houses. In this period the landscape was so intensively grazed that few woodlots remained. Crops would be planted on level areas and in bottomland. Fencing and other boundary markers would be very important.

*Houses, 1850-1890*

Figure 32: Five bay center door house, Washington County.
Figure 33: Five bay center door house, Washington County.
Figure 34: Gable front house with ell, Washington County.
Figure 35: Five bay center door house, Washington County.
Figure 36: Gable front house with Victorian trim, Washington County.
Figure 37: Victorian house, Washington County.
Figure 38: Late Victorian house, Washington County site 802310, c1900
Figure 39: Gable front house, Washington County.

During this period of prosperity, quite a few new farmhouses appeared. Many of them showed a consciousness of current Victorian stylistic trends. The characteristic farm house of the region continued to be the modest "I" house and variations on the form.[58] Some of these farm houses suggest a conservative response to contemporary architectural trends, in that they begin with a common form such as the I house, and add Victorian bracketing, window surrounds, bargeboards, and porches with machine turned elements. Others, however, departed from the standard folk forms of the I-house or the five-bay, two room deep rectangular mass. These buildings, for example at Site 802487, 802353, 802516, and most notably 802310, not only show Victorian era ornament, but forsake traditional forms for intersecting masses and irregular shapes. They were not innovative for their day, but nonetheless they suggest a consistent interaction with city and town of the period, and also possibly an awareness of popular forms and styles derived from published materials such as pattern books, farm journals, and popular magazines. They also signify substantial financial means. In Greene County, the atlas showed similar examples in the depiction of the Residence and Farm of Henry Grimes, Morgan Township, and that of M. M. McClelland.

[58] Other examples can be found at sites 802302, 802307, 802318.

*Sheep Barn, 1850-1890*

Since the average number of sheep per farm was high during this period, a good many farms must have had buildings that accommodated sheep. At the least, many general-purpose barns of this period would likely have had interior sheep pens, wool rooms, shearing rooms, feeding racks, and hay storage which would have facilitated the sheep raising economy. Specialized sheep barns were also present. Many sheep barns have been documented in Washington County; though dating is difficult, some probably date to this period. Local historian John Jaqueth maintains that "sheds were considered expensive but indispensable, especially for breeding ewes and early lambs."[59] The analysis presented here first focuses on characteristics of sheep barns as described in 19th century agricultural publications and secondary sources, then moves on to consider examples from field survey work.

Siting received careful attention in discussions of sheep barns. In 1847, a sheep barn was described in the *American Agriculturist*. In this one, the writer "gives the preference to single barns, which are situated on the borders of his meadows, and therefore very convenient for the reception of hay." His sheep barns with hay storage were 32 by 24 feet.[60] Others argued for a central barn, but still noted that it should be carefully situated. Most believed that the barn should be protected from north and west winds, either by topography or wind breaks.[61] Many argued for siting on a south-facing or east- facing slope. Randall mentioned that the sheep barn was usually near the farm house. [62] There was a general consensus also that siting should take advantage of good ventilation and a dry location. Though sheep needed protection from winds, authors agreed that "an abundance of fresh air… is one thing that sheep demand." [63] The dry location was needed because sheep are susceptible to foot rot. Some advice manuals recommended a dirt floor, plentifully covered with straw. This recommendation stemmed from another susceptibility of sheep, their tender hooves.[64] Multiple doors and windows were recommended, the former to give flexibility in patterns of access, the latter to provide light and ventilation. Typical heights recommended for doors were 7-8 feet. [65]

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[59] John Jaqueth, "A history of sheep in Pennsylvania : the development of the sheep industry up to the close of the nineteenth century." Pennsylvania State College MS thesis, 1938, 58-9.
[60] "Sheep-Barns and Shelters," *American Agriculturist* November 1847, 344.
[61] James D. Ladd, "Sheep Husbandry," *Ohio Cultivator* February 1, 1857, 36.
[62] Henry Randall, *The Practical Shepherd* (New York, 1863), 217, 216; Henry Stewart, *The Shepherd's Manual* (New York, 1882), 50; Randall, *The Practical Shepherd*, 215.
[63] K. J. T. Ekblaw, *Farm Structures* (New York: MacMillan, 1914), 212; *Barn Plans and Outbuildings* (New York: Orange Judd, 1907; copyright 1881 and 1903), 134; William James Clarke, *Modern Sheep: Breeds and Management* (Chicago: American Sheep Breeder Co., 1907), 197. Though these date from a later time period, the advice was also given throughout the 19th century.
[64] Edward R. Jones, *Farm Structures*, University of Wisconsin, 1933, 112; Walter Coffey, *Productive Sheep Husbandry* (Philadelphia: J. B. Lippincott, 1918).
[65] "Sheep-Barn," *The Farmers Cabinet and American Herd Book* August 1. 1837, p. 4; "Plan of a Sheep-Barn," *American Agriculturist* October 1847, pp. 318-319; "Sheep-Barns and Shelters," *American Agriculturist* November 1847, p. 344; James H. Ladd, "Sheep Husbandry,"*Ohio Cultivator* February 1, 1857, p. 36; "North Elevation of Capt. Hammond's Sheep Barn," *Prairie*

Plans published in the mid 1840s showed a two story central portion with one story wings flanking it.[66] Sheep barns as described in 19th century published sources ranged from 40 by 60 feet, to just 20 feet wide. For example, in 1847 the American Agriculturist published a "Plan of a sheep-barn." This was actually three long, narrow sheep barns arranged in a "U" pattern, each "fifty feet in length by twenty in width, with fifteen-foot posts, the first room or sheep-room to be six feet in a half in height…" This writer believed that the sheep should be "on the ground," that is, the building should have a dirt floor. (Others repeated this advice over the years.)[67] The writer went on to emphasize that the building should be "well ventilated" by windows on the upper level." Filling out the bottom of the "U," making it a square, was another barn with carriage house, shearing room, horses, hay mow, wool room, oat granary, and root cellar. The wool storage room, the author stated, should be "made tight against rats, mice, and dust, lighted by a window in the end of the barn…"[68] Stephen Powers, writing about The American Merino in 1887, described a sheep barn with pens on the ground floor and loft above for hay and wool. The wool room had a "tight and smooth" floor and walls, and a shearing area at one end.[69] Adequate doors for ingress and egress were important. James D. Ladd explained why: "this allows a large number to pass abreast, and prevents injury from jambing against the sides."[70] Doors for manure removal were also needed. Another frequently mentioned characteristic was that the hay storage above the sheep be fitted with an extra tight floor. This was to prevent hay seeds and stalks from falling down and getting into the fleece.[71] Powers explained: "I have seen sheep going around with hay-seed sprouting and the grass growing out of the wool on their backs."[72] This statement was no doubt hyperbolic, but Powers made his point colorfully.

Figure 40: Plan of a sheep barn.
Figure 41: Engraving of a sheep barn.
Figure 42: Engraving of a sheep shed.

*Farmer* June 25, 1864, p. 441; "How to Build a Sheep Barn," *Prairie Farmer* May 6, 1865, p. 349; "Plan of Sheep Barn," *Prairie Farmer* May 13, 1865, p. 370; "Geddes' Sheep Barn,"*Ohio Farmer* June 6, 1874, p. 356; "Sheep Barns and Sheds," *Ohio Farmer* January 20, 1877, p. 36; H. A. Simon, "Plan of Sheep Barn," *Ohio Farmer* January 12, 1893, p. 24. Full length books about sheep husbandry from the period include: Henry S. Randall, *The Practical Shepherd* (New York, 1863) and *Sheep Husbandry* (New York, 1848); Luke Morrell, *The American Shepherd* (New York, 1845); and Henry Stewart, *The Shepherd's Manual* (New York, 1878). The publication dates given here are not certain, because the library cataloguing is ambiguous.

[66] Luke Morrell, *The American Shepherd* (New York, 1845), 261.

[67] "Geddes' Sheep Barn," *Ohio Farmer* June 5, 1874, 356; Henry Randall, *The Practical Shepherd* (New York, 1863), 219; Powers, *The American Merino*,169.

[68]"Plan of a Sheep-Barn,"*American Agriculturist* October 1847, 318-319; accessed online through APS. A later article, "Sheep Barns and Sheds," *Ohio Farmer* January 20, 1877, 36, essentially repeated the advice in the 1847 piece. Ladd, "Sheep Husbandry," advocated good lighting and ventilation as did Henry Randall, author of the most popular sheep raising manual, *The Practical Shepherd* (New York, 1863), 214.

[69] Powers, *The American Merino*, 166.

[70] Ladd, "Sheep Husbandry".

[71] Randall, *Practical Shepherd*, 219.

[72] Powers, *The American Merino*, 169.

Figure 43: Sheep barn with Sheds.

An 1893 book titled *Practical Hints about Barn Building.…* contained several plans and elevations of sheep barns. Of particular interest for our purposes was a design from central Ohio of a sheep barn put up by "Hill and sons," probably in the 1880s. On the eaves side, the barn's lower level had three window openings and two hinged doors. A pent eave provided protection. The eaves side second level had asymmetrical fenestration (three louvered ventilators) and a centrally located hay door; one end was blank. The plan revealed the inner workings of the sheep barn. The ground floor was essentially an open-plan space lined on three sides with feed racks. These were supplemented by two hay boxes and a root cellar. On the second story, behind the blank wall was a hay mow; behind the central door was a combination threshing floor and sheep pen. Behind the louvered openings was a lamb pen. Partitions sealed this off from a second-story wool room. Hay chutes allowed for tossing hay down from the mow; a trap door served an unknown function; and a grain bin was located in the wool room. Since wool and grain both needed tight sealing to keep out small creatures who would enjoy a cozy wool nest and access to food, it was logical that these two storage items be located in the same place. This setup would involve moving sheep vertically; this isn't the only such plan, but it is still a puzzle as to how sheep would be shuttled back and forth upstairs and down. A plan in *Barn Plans and Outbuildings* showed a one and a half story sheep barn. This barn, too, had doors and windows in the eaves side and gable end. Roof ridge ventilators provided for the fresh air sheep required. A hay door and hay hood was situated in the upper gable end. The plan for this barn showed that upon entering the gable-end central door, the sheep were diverted either to the right or left of feed troughs that ran lengthwise in the center, about three quarters of the way to the opposite wall. The remainder of the space was partitioned to give a shearing room and lambing pan.

Recommendations from prescriptive literature offer a beginning basis on which to identify sheep barns in the field. Actual sheep barns did not always contain all of these features, but they did generally share certain basic characteristics. The sheep barns documented in southwestern Pennsylvania do have some of the characteristics recommended in prescriptive literature of the 19th century, but they do not closely resemble the 19th century depictions, and they do not always resemble New England sheep barns, either.[73] With these qualifications in mind, it is still possible to identify consistent characteristic features of southwestern Pennsylvania sheep barns. Siting could be near the farmhouse or main barn, but often sheep barns can be found at a distance from house or barn, in pasture areas. Barns were long and relatively narrow. They were usually two stories, with a gabled roof. On the ground floor, gable end doors were centrally positioned, usually only on one gable end. A row of small, square windows lined the eaves side on each

[73] According to Thomas Visser, characteristic features of a New England sheep barn could include sheds with long open sides, sometimes with feed racks along one wall; and a hayloft above the ground floor. Others lacked the open sides, but instead exhibited patterns of door and window placement, and second-story hay storage, similar to those discussed in the prescriptive literature. Thomas Visser, *Field Guide to New England Barns and Farm Buildings*, 161-165.

side. Above them, sometimes rows of louvered ventilators would admit air to the loose hay within. On the upper level, in one gable end, a hay door and sometimes a hood or track extension showed where hay was loaded into the loft. Most sheep barns possessed these basic elements, though sometimes they were differently arranged. For example, at Washington County Site 802144, the position of doors, windows, and hay door were essentially reversed, ie hay door and entry doors in the eaves side and windows in the gable end. At Site 802213, a central two-story hay storage area was flanked by one-story shed-roof animal shelters, as recommended in the prescriptive literature.

Figure 44: Sheep barn, Washington County.
Figure 45: Sheep barn, Washington County.
Figure 46: Sheep barn, Washington County.

No interior plans are available for any of these buildings, but some textbook plans suggested a central feeding rack, running lengthwise. Large pens, or even an open plan, rather than individual stalls, were generally recommended. At Washington County Site 802190 a c. 1880 sheep barn suggests a possible interior plan like that in *Barn Plans and Outbuildings*, which was published in 1907, but first copyrighted in 1881. Site 802144 has an exterior pattern that is similar to the Hill and Sons barn. Site 802213 is organized on the same principle as the Jennings "sheep barn with sheds" illustrated above, except that the sheds are enclosed.

Figure 47: Plan of a sheep barn. Figure 48: Ohio sheep barn, elevation.
Figure 49: Ohio sheep barn, plan.
Figure 50: Sheep barn.
Figure 51: Residence of Robert D. Henry, South Strabane Township, Washington County.
Figure 52: Buffalo Sheep Farm, Buffalo, Washington County.
Figure 53: Residence of R. S. Caldwell, Buffalo, Hopewell Township, Washington County
Figure 54: Bellevedere Farm, Col. C. H. Beale, Proprietor, Washington County.

In Mercer and Lawrence Counties, sheep numbers still were relatively high, as well. Fieldwork documented a number of buildings that were probably sheep barns.

Below are photos of some Mercer and Lawrence County buildings encountered in fieldwork that may have been sheep barns. Fieldworkers tentatively labeled most of these wagon sheds or machine sheds, but if we look at these buildings more closely, compare them with historic examples, and match them with historic criteria for sheep barns, we may plausibly consider them sheep barns. Most have the characteristics commonly mentioned: low (7-8 foot), numerous doors/openings; ventilation; protected siting facing east on a rise and near or adjacent to the main

barn; provision for hay storage. While many of them do now store machinery, their entrances are often too small to admit modern machinery. In some cases they have had to be enlarged. Historically, this area had only an average level of farm mechanization, so large machine sheds may not have been needed. Finally, historically the townships where these buildings were documented had relatively high numbers of sheep per farm, and several specific sites have been documented as having sheep flocks in 1880. All of these considerations taken together point to the probable identification of these buildings as sheep barns.

Examples from Fieldwork that exhibit these characteristics:

Figure 55: Sheep barn, Mercer County, East Lackawannock Township.
Figure 56: Sheep barn, Greene Township, Mercer County.
Figure 57: Sheep barn, Scott Township, Lawrence County .
Figure 58: Sheep shed, Washington Township, Lawrence County.

*Barns, 1850-1890*

The most common barn dating to this period found in southwestern Pennsylvania is termed a "basement barn." The southwestern barns are related to the basement barns of New York State and Ohio, which became popular there in the late 19th century. The basement barn has many alternative names, making identification confusing. Researchers have called it a “raised basement barn,” a “side-hill barn,” and a "Northern Basement Barn." This barn does have some identifying features, though. According to Henry Glassie, it is essentially an English barn raised up on top of a full basement. This contrasts to the partial basement characteristic of the banked Pennsylvania forebay barn: on the lower level of the basement barn, light can enter from all four sides rather than just three. Henry Glassie has noted that frequently the English barn's three-bay organization was augmented by additional bays (for hay) or runways (for machinery or threshing), so that the basement barn version sometimes had more than three upper-level bays. The basement barn never had a forebay, so there would be no forebay wall on the ground level nor framing that would suggest a forebay on the upper level. The basement barn is usually not built into a bank, but normally a bridge or ramp gives access to the upper level on one side. The lower level often has a lengthwise central aisle, and stanchions for dairy cows. There are gable-end doors, usually one in each end. Off center windows in the gable end can indicate where the stable area is located. These barns frequently had gambrel roofs for extra hay storage, even in the 19th century.[74]

In southwestern Pennsylvania, the basement barn appears to have been adapted for the specialized livestock raising in that region. Basement barns here look like overgrown sheep barns; the southwestern Pennsylvania basement barn is essentially a multipurpose barn adapted

[74] Henry Glassie, "The Variation of Concepts Within Tradition: Barn Building in Otsego County, New York." *Geoscience and Man* V (1974), 186.

to cater to the needs of sheep. For example, a Mr. S. Lahm wrote to the *Ohio Cultivator* in 1859 that he had a barn whose lower story was "divided into eight separate apartments for sheep…" The upper level was used for grain, hay, machinery storage, and shearing and wool house.[75] These larger barns had enough room to accommodate not only sheep but also cattle and horses; hay; machinery; sometimes grain; and possibly wool storage and shearing space. John C. Clark of Franklin Township, Washington County, was visited by the agricultural society in 1870; his barn was described as a new barn which had cost $1,800 and had sheep stables on the ground level.[76] Robert Wylie, who lived a short distance from Washington, built a new barn 60 by 44 feet for $3,000 with all the requisites: “every convenience for storing away grain in the sheaf or in the garners [granaries], hay in the mows, corn in the cribs, with a room for tools and implements of husbandry… the stabling for horses, cattle, and sheep is all well arranged…”[77] The barns have multiple, small doors, in keeping with the primary livestock’s size and habits. Sometimes the doors are positioned on the eaves side, sometimes on the gable end, and sometimes in both locations. Sometimes these barns have the owner's name over the doors on the eaves side, at the very top. Many of them have shed extensions. Some extensions are on the eaves side, making an asymmetrical gable-end profile. Occasionally these sheds are on a gable end.

The southwestern basement barns usually have a gable roof, sometimes a gambrel roof. All are at least two stories tall, and many are two and a half stories. The southwestern barn usually (though not invariably) has many window openings. On the ground level, there are typically rows of small, square openings on at least one eaves side, frequently on both sides. On the upper level there are varying numbers and types of openings. Sometimes they are glazed windows (example, Washington County sites 802337, 802349, 802407, 802414). Most often they are just louvered, regularly spaced openings. On the eaves side opposite the ramp, at the upper level, often there are large doors positioned roughly in the center. Often 19th century depictions show large stacks underneath these doors, probably depicting straw from threshing or hay thrown down from the mow.

The southwestern sheep region barn seems to merge barn design elements from more than one type. The form itself – a three-bay second level atop a full basement story – is consistent with the basement barn’s organization. The styles and patterns of openings, however, take elements from the eastern Pennsylvania forebay barn, especially the louvered openings or windows in gable and/or eaves side which were popular in the late 19th century, precisely during the years of the sheep boom. The southwestern Pennsylvania barn design employed these openings liberally, probably because they worked so well to provide the ventilation sheep needed above all else. A second affinity with the Pennsylvania forebay barn was a single, square-ish, central door in the

[75] S. Lahm, "Sheep Barn and Sheep Feeding," *Ohio Cultivator* February 15, 1859, 51-3.
[76] *Report of the Transactions of the Pennsylvania State Agricultural Society*, 1871-2, 105-8.
[77] *Report of the Transactions of the Pennsylvania State Agricultural Society*, 1871-2, 109-110.

eaves side. In Pennsylvania barns this would be located in the forebay. In either case, the doors allowed for hay or straw to be thrown down to the animal yard.[78] Notably, the Caldwell atlas shows both forebay barns and basement barns with this feature.

Figure 59: Farm of John Maxwell, Hopewell Township, Washington County.
Figure 60: Farm of John Davison, Hopewell Township, Washington County.
Figure 61: Basement barn, Washington County .
Figure 62: Basement barn, eaves side, Washington County.
Figure 63: Basement barn, Washington County.
Figure 64: Basement barn, Washington County.
Figure 65: Basement barn, Washington County.
Figure 66: Basement barn, Washington County site.
Figure 67: Washington County site 802241, late 19th century
Figure 68: Basement barn, Washington County.
Figure 69: Barn, Washington County.
Figure 70: Barn, Washington County gable end
Figure 71: Washington County showing siting
Figure 72: Washington County showing siting and screening of house by ornamental trees
Figure 73: Washington County aerial showing siting of house (center), barn (lower center), and windbreak.

*Hay Barn, 1850-1890*

Thomas Visser notes that in New England, occasionally hay barns were erected away from the main farmstead, to serve an outlying meadow. Hay barns, as their name implied, mainly stored hay, and their diagnostic feature was a large opening to admit the hay, usually located in the gable end at the peak, often with a protective hood projecting. Southwestern Pennsylvania hay barns typically had the opening and the hay hood, but most buildings that fieldworkers labeled "hay barns" also seemed to have animal quarters below, and most were located within the orbit of the main farmstead.

Figure 74: Hay barn, complete with hay, Washington County.

*Granary, 1850-1890*

As mentioned above, granary is a structure devoted to storing threshed grain. Whether grown as a cash crop or for animal feed, small grains (principally wheat, oats, barley, and rye) were a valuable and highly vulnerable component of the diversified farm's product mix. So, secure

[78] Contrast with basement barns in the dairy areas of the Northern Tier and Northwestern Pennsylvania, where the upper-level eaves side opposite the bank has fewer openings. Central hay doors are not uncommon in the Northern Tier and Northwestern areas, but just as often, the upper eaves side is blank, or has one or two small window openings.

storage for small grains has consistently been a priority. (Corn, another small grain, was stored in the ear in a specialized corn crib.)

Their typical characteristics include the following: wood construction; tight boarding, thus few if any windows; gable end pass doors and entry doors; interior bins, partitioned from one another; interior walkway. Very often, the granary was elevated off the ground, as a means of deterring rodents. Siting seems to have varied. In some cases, the granary was sited away from the barn and closer to the farmhouse; in others, it was situated next to the barn.

The freestanding granary seems to have been quite common in the southwest. Here, the Pennsylvania Barn, with its integral interior granary, was not as common a barn type as in the southeast and central portion of the state. The dating for granaries is extremely imprecise. There are dozens of granaries documented in Washington and Greene County survey work, and survey crews dated most to the late 19th and early 20th centuries. This c 1880 barn has a bankside outshed that bears the characteristics of a granary: tight boarding, access on gable end, above-ground elevation.

Figure 75: Barn with probable granary outshed, Washington County.
Figure 76: Farmstead, Washington County.

*Springhouse, 1850-1890*
The springhouse and its diagnostic features are described above. The need for springhouses continued into this period. Washington County farms in 1880 averaged 342 pounds of butter per year, just under the statewide average, so springhouses would be an important component in the farmstead. It seems that one particular springhouse configuration is quite common in the region. This is a two-level springhouse with gable end built into a bank. The second story level often has windows and what seems to be ample work space. Frequently there is a gable overhang to shade workers on the lower level. The door usually is in the lower gable end, but on the upper level it is in the eaves side. These buildings signify more than usually elaborate work space and suggest that these springhouses were used for more than simple storage.

Figure 77: Spring House, Residence of John Gillespie, Peters Township, Washington County.
Figure 78: Spring house, Washington County.
Figure 79: Spring House, Scott Township, Lawrence County.
Figure 80: Spring house, Washington County.
Figure 81: Two level Springhouse, Greene County .
Figure 82: Spring house, Washington County.
Figure 83: Spring House, Washington County.

*Wash House, 1850-1890*
The Washington County agricultural society visiting committee in 1870 described a wash house that had a "large fire place" plus a "very strong spring of pure crystal water" flowing through it. Churning and cheese making took place here. Buildings over a spring with two stories and a fireplace might be called wash houses. To date, no wash houses were positively identified in field work.

*Carriage House, 1850-1890*
During this prosperous period, carriage houses appeared on southwestern Pennsylvania farmsteads. These buildings were mainly intended to house equipment for human transportation, and the horses which drew them. As such, they commanded a privileged place in the farmstead site plan, usually in proximity to the house. According to Thomas Visser, early ones were "distinguishable by their large hinged doors, few windows, and proximity to the dooryard."[79] A carriage house would not usually be as large as a barn, and it might sit on the same side of the road as the house; also, carriage houses not uncommonly had some ornamental architectural trim that would not always appear on a barn. Interiors (originals that is) would have large stalls, and a hayloft above.

Figure 84: Carriage House, Residence of the late Hon. William Montgomery, Washington County.
Figure 85: Carriage House, Washington County.
Figure 86: Carriage House, Washington County.

*Wool Room, 1850-1890*
Visser notes that occasionally wool rooms are found above carriage houses in Vermont. Wool rooms could also be included in other buildings. For example, the Pennsylvania Agricultural Society Transactions reported in 1872 on a farm where the "grain house [is] well arranged for convenience; in the upper story has … wool stored."[80] Field work did not definitively note wool rooms, but a second inspection might uncover some. In general, wool storage facilities probably existed in varied buildings. Wool storage required a means to keep out mice and other creatures, so an elevated position and tight sealing would be signs of a possible wool room.

*Corn Crib, 1850-1890*
The corncrib was needed to store field corn in the ear. Its features would include slats (usually horizontal wooden ones) and/or wire netting for ventilation; doors in the ends for accessibility; anti-rodent provisions (elevating it off the ground level, tight flooring). The earliest corncribs were made of log; it's doubtful that any of these survive in the study area, though a few were

[79] Thomas, *Field Guide to New England Barns*, 145.
[80] *Transactions* of the State Agricultural Society of Pennsylvania, 1872, 121.

depicted in the 1876 Caldwell atlas. "Keystone" shaped cribs, flaring from bottom to top, were designed to prevent settling and shed water. Once machine-milled beveled boards became available, designs tended to feature straight sides rather than flared ones. "Cribbing" boards came in several different profiles: slats on wedges, triangular slats cut from two by fours; and beveled cribbing. The last of these could be spaced an inch or so apart, thus providing ventilation; other types overlapped. Most corncribs had wire mesh inside to protect from vermin. Double cribs are not uncommon; these usually consisted of two single cribs, roofed over with a sheltered space between for husking or machinery storage. Corncribs could stand alone, or be incorporated into a barn assembly, either as an integral feature or (probably more frequently) as a shed roof extension.[81] In Washington County, with larger than average per-farm corn production, this outbuilding was a frequent sight, as confirmed by illustrations from the 1876 Caldwell atlas. Field survey also documented numerous corn cribs, but they date only as far back as the turn of the twentieth century. These extant buildings can be assumed to be replacement buildings.

Figure 87: Corn Crib, Cedar Hill Farm, Residence of Margaret Caldwell and Daughters, Peters Township, Washington County.
Figure 88: Corn Crib, Washington County.

*Smoke house, 1850-1890*

The smokehouse is a small structure, often with a square footprint, of frame or masonry, windowless, with facilities inside for smoking meat. These facilities usually consist of a hearth, and hooks or laths from which the smoking meats could be suspended. The smoke house was usually near the main house. Hams and bacon were smoked here in the late fall. Smoke houses should be considered a mixed-gender, community workspace, as most often neighborhood men and women cooperated at butchering time. The 1876 Caldwell Atlas of Washington County shows a few smoke houses (see illustration above, in corn crib section), but fewer than would be predicted. Given that Washington County farms raised more swine than the usual Pennsylvania farm, we might expect to find smoke houses on farmsteads. However, few survey forms recorded smoke houses. Tentatively, we may hypothesize that in this less Pennsylvania German area, foodways related to pork may have been less dominant than in central and eastern Pennsylvania. However, given the impact of Southern culture in the area, this is still a little puzzling. There is one very elaborate combination smoke house and ice house at a Greene County site, built by M. M. McClelland about 1873.

*Landscape features, 1850-1890*

Probably the late 19th century was the peak period for land clearance, though the number of farms would not peak for another decade or two. Farmstead layout seems to have developed a

[81] Keith Roe, *Corncribs in History, Folklife, and Architecture* (Ames: Iowa State University Press, 1988).

few characteristic features, mainly with respect to houses' and farm buildings' carefully-distanced relationship to public roadways. Pasture dominated over crop fields, and woodlots were small. Fencing was a very prominent landscape feature. Picturesque ideas about homestead landscape seem to have taken root in Washington County. Atlas depictions often give romantic homestead names for these places ("Mount Pleasant"; "Locust Hill"; "Evergreen Home"). Of features that were important in this period, those that survive most frequently are pasture, treelines, crop fields, pathways, and relationships among buildings and to the road. Much less likely to survive original fencing, orchards, homestead landscaping, historic ornamental plantings, and garden plots.

Pasture, 1850-1890: By 1880, a very large proportion of the extreme southwest was in pasture. It is difficult to say exactly how much, because Federal agricultural census statistics include pasture in two separate categories: the figure for "tilled acres" included "grass in rotation whether pasture or meadow," and in addition there was a separate category for permanent pasture lands. If we consider only the "permanent pasture," we find that statewide (on a per-farm basis) about 16 percent of the land was in permanent pasture, while in Washington County around 22 percent was in permanent pasture. In the other counties the percentage was more like the state average. The Caldwell atlas images clearly show expanses of pasture land extending right to the hilltops. Washington County historian Alfred Creigh noted in 1870 that "the country presents a rolling character… These hills are cultivated to the very tops…"[82] John Jaqueth, author of a 1938 "History of Sheep in Pennsylvania," noted that pasture "ground was so arranged as to take a piece of woodland into every field to shade [the sheep] from the sun."[83]

Figure 89: Residence of J. L. Patterson, Burgettstown, Washington County.
Figure 90: Pasture and Treeline, Washington County.
Figure 91: Pasture, treeline, shade tree, and fencing, Washington Count..

Crop Field, 1850-1890: Crop fields tended to be relatively small, between 5 and 20 acres, and irregularly shaped. They often would be sited on level bottom land. Their location and use often continues down to the present. See the engraving of James Hawkins's farm, below.

Figure 92: Crop field, Washington County.

Relationship of Farm Buildings, 1850-1890: A particularly interesting aspect of southwestern Pennsylvania farm layout is the relationship of the farmstead to the road. A review of Caldwell's illustrations shows that (though there are exceptions) in general, the farm buildings are sited well away from the road. Access frequently was carefully designed to be limited. For example, a

[82] Alfred Creigh, *History of Washington County: from its first settlement to the present time.…* (Harrisburg, 1871), 45.
[83] John Jaqueth, "History of Sheep in Pennsylvania," 58-9.

long, narrow path would lead to the house from the main road. The 1870s farm visiting committee noted that James W. Dickey's barn was "off some distance, in a suitable place…"[84]

Figure 93: Residence of R. S. Caldwell, Buffalo, Hopewell Township, Washington County.
Figure 94: Five farms in Washington County.
Figure 95: In this case, it is not even possible to visually identify a roadway passing by the farm. *Caldwell's illustrated, historical, centennial atlas of Washington Co., Pennsylvania* (Condit, Ohio, 1876).

Nineteenth-century rural Washington County residents appear to have been interested in contemporary romantic-inspired landscaping ideas of the Victorian era. Curved pathways, circular flower beds, and ornamental plantings appear in many of Caldwell's illustrations, and a few remnants can be found even today.

Figure 96: Evergreen Home, Farm Residence of T. P. Vance, Cross Creek Township, Washington County.
Figure 97: Ornamental trees and picket fencing, Washington County.
Figure 98: A large shade and shelter tree located in front of this late 19th century house, Washington County.
Figure 99: Farm lane, ornamental evergreens, fencing, and woodlot, Greene County.
Figure 100: Residence of W. G. Sphar, Allen Township, Washington County.
Figure 101: N.G. Cook's residence, Washington County.

Now let us consider relationships of the other farmstead buildings to each other and to the road. For the most important of these – the main barn – its position vis-a-vis the roadway seems to have been a secondary consideration. As we have seen, orientation, shelter, and topography were more important than access from a road. The view of N. G. Cook's residence illustrates this. To be sure, some barns were located right on the road, usually so that wagon loads could enter on grade to the mow level. But this was not a dominant pattern. Note also the two willow trees standing guard at the farm entrance.[85]

The other farm outbuildings generally were clustered, sometimes in a linear pattern, more often irregularly. Topography doubtless accounts for some of the siting decisions. Siting for springhouses was inflexible. The privy, summer kitchen, ice house, or smoke house were sited within the house's orbit. The carriage house usually stood between house and barn, convenient to the roadway. Corn cribs, machine sheds, and granaries were in the barn's orbit. Sheep barns

[84] *Report of the Farm Visiting Committee of the Washington County, Pennsylvania Agricultural Society, for the Year 1872*, p 121.
[85] *Caldwell's illustrated, historical, centennial atlas of Washington Co., Pennsylvania* (Condit, Ohio, 1876).

might be near the main barn, but could also be sited in an outlying pasture. Hay barns were also likely to be sited beyond the main farmstead.

At site 802001 in Washington County, substantial aspects of the farm layout have persisted over a hundred years, inferred through comparing the 1876 atlas view with present landscape. These features include pathways from road to house; tree plantings around the house; siting of barn; location of carriage house where the road meets the pathway; and pasture and crop field.

> Figure 102: Washington County site 802001, contemporary aerial. Note curving paths, crop and pasture land, evergreens around the house, and carriage house where the road and pathway to house intersect.[86]

Fencing: While of course the solid wooden "worm" and "post and rail" fences of the nineteenth century are long gone, fencing remains on the landscape, in diminished presence. Its function and location are all that remain; modern woven wire, barbed wire, and other fencing predominates. In some instances, horse farming has resulted in a sort of continuity, in that board fences are used on horse farms; see Washington County sites 802101 and 802102. A hierarchy of fencing prevailed, with picket fences around the house, post and rail fences by the barn, and "worm" fences in more distant places.

> Figure 103: Woven wire and board fence, Washington County.
> Figure 104: Woven wire pasture fence.

These illustrations obviously do not document historic fencing from the period, but they do suggest that the use of fencing to delineate pastures has been continuous.

Treelines:

> Figure 105: Washington County.
> Figure 106: Washington County.

Orchard: Virtually every farm had an orchard in the 19th century. These have been among the most thoroughly effaced landscape features. Fruit trees are not long lived, and with the localization of fruit growing, small farm orchards became outmoded.

[86] At Site 802002, and site 802064 it appears little landscaping elements remain. At Site 802003, the pathways to the house have changed, but the location of woodlots, crop field, and pasture remains essentially as depicted in the 1876 atlas. Also, there still are ornamental trees planted near the house. The quality of the digital atlas image was insufficient for inclusion here.

Figure 107: Relict orchard, Washington County.
Figure 108: Relict orchard, Washington County.
Figure 109: Washington County.

Woodlot, 1850-1890: Woodlots may be more extensive now than they were in the 19th century. In the late 1870s, one observer reported, "but one tenth of the area of Washington is forest land…. There is a home market for all the timber. Very little wood is used for fuel."[87]

Drainage ditches: One of the farms visited by the agricultural society in 1874 had three hundred yards of drainage ditch lined with stone and clay.[88] Present day drainage ditches are plentiful but cannot be dated with certainty.

Cemetery: Occasionally a private family cemetery can be found on the southwestern Pennsylvania farm. For reasons of practicality or sentiment, some families chose burial grounds over church cemeteries. This represents practices that predate the 19th century movement to public cemeteries landscaped according to romantic-era precepts.

Figure 110: Family Cemetery, Greene County.

### *1890-about 1930: Industrialization and Agricultural Reorientation*
### *Products, 1890-about 1930*

Around the turn of the 20th century, several developments contributed to a rapid change in rural southwestern Pennsylvania. By 1890, sheep numbers in the two counties had already declined noticeably, and thereafter the drop-off was marked. By 1925, there were only 222,000 sheep in the two counties combined; Greene had surpassed Washington, and in the latter county there were only 104,000 sheep, less than a quarter of the 1880 level. Washington and Greene Counties still produced by far the most sheep in the state (together they accounted for over half of the state total), but on a much more modest scale. Sheep farming was much reduced in Mercer and Lawrence Counties, though as late as 1920 the agricultural extension agent in Lawrence reported that there were still about 250 "sheep men" there. In the state as a whole, an even more pronounced decline occurred. The average Washington County farm now grazed a mere 24 sheep, compared with 2 for the average Pennsylvania farm.

What were the reasons for this dramatic shift? Several changes wrought an effect on the sheep grazing economy of southwestern Pennsylvania. In the first place, global competition drove down prices and made sheep grazing unprofitable in Pennsylvania. The western United States, Australia, New Zealand, and South Africa raised high quality sheep (in some cases descended

[87] *Annual Report of the Pennsylvania State Board of Agriciulture*, 1877, 76.
[88] *Report of the Farm Visiting Committee of the Washington County, Pennsylvania Agricultural Society, for the Year 1874*, Visit # 1. The 1870 committee visited John C. Clark and described drainage ditches on pp 107 and 108.

from Pennsylvania ancestors) far more cheaply than Pennsylvanians could. To make matters worse, the protective tariff was eliminated for good in 1894. Locally, industrialization changed land use both directly and indirectly. Extractive industries, particularly coal mining and oil and gas extraction, expanded into both Washington and Greene counties on a much larger scale than before. These had both direct and indirect effects on agriculture. Direct effects included actual conversion of land uses from agriculture to mining; compromises to water quality; and the siphoning off of farm labor. Indirect impacts also played an important role. For example, during this time period large corporations bought up subsurface rights to huge tracts in Greene and Washington Counties.[89] On June 25, 1896, the National Stockman and Farmer (published in Pittsburgh) reported "About all the money coming into hands of farmers is oil rentals. Produce not commanding enough generally to repay for expense of raising …" According to historical geographer Richard Beach, many farmers received royalties, and were able to substitute that income for sheep-grazing revenues. So, because of payments, land was either given over to other agricultural uses, or allowed to revert to scrub. Figures for Greene County show that by 1915, non-local investors had claimed subsurface rights on 200,000 acres of land in the county – a staggering two thirds of the entire county land area.[90] This impact was indirect, because not all of this land was actually developed for mining purposes. In fact, even as late as 1930 over ninety percent of Greene County's land area was in agriculture. Modest up-ticks in wool and sheep production, (for example around 1905 and again in the 1920s) gave momentary boosts to the farm economy. [91]

Historical geographer Richard Beach argues that another factor in the decline of sheep raising was that grazers became discouraged by the depredations of unruly dogs. A 1913 article in the Pennsylvania Farmer blamed the "miner's dog" and high prices for coal land for the decline in southwestern Pennsylvania sheep husbandry.[92] Figures cited by dog opponents suggest significant losses, but there also seems to have been an element of class and ethnic prejudice involved, so it is difficult to sort out the actual impact in light of the obvious hostility between industrial and agricultural camps.

Other elements of southwestern Pennsylvania's agricultural economy declined too. Wheat acreage dropped along with western Pennsylvania wheat farming in general; what remained of wheat farming within the state shifted geographically to the southeast. Grain corn also declined relative to the state averages, on a per-farm basis. Hay production remained about the same, slightly above statewide averages on a per-farm basis. Oats production also remained more or less at state levels. A new crop was silage corn, as yet raised in small amounts compared with

[89] Beach, *Two Hundred Years of Sheep Raising*, 44. See also *National Stockman and Farmer* October 31, 1895.
[90] G. Wayne Smith, *History of Greene County Pennsylvania.* Waynesburg, PA: 1996, 248, 519.
[91] Pennsylvania Department of Agriculture, *Annual Report,* 1907, pp 365-72; US Federal Agriculture census summaries for 1920
[92] Beach, *Two Hundred Years of Sheep Raising,* 45; W. H. Tomhave, "Possibilities of Sheep Husbandry in Pennsylvania," *Pennsylvania Farmer* January 11, 1913, 9/20.

the total farm output, but nonetheless an important contributor to dairy cow productivity. In some parts of the state, potatoes assumed increased importance near mining and industrial towns, but in the southwest conditions were not suitable: "this is not potato country," wrote a Greene County correspondent.[93]

If they wanted to keep on farming, southwestern Pennsylvania rural families had little choice but to combine sheep raising with other enterprises. Their options were limited. It appears, for example, that they took advantage of nearby markets for fresh poultry meat and eggs. From being about at the state average in 1880, southwestern farms in 1927 raised slightly more birds on a per-farm basis (87) than the state average (78). Some townships, such as Independence and Smith in Washington County, significantly exceeded statewide averages. These two townships probably catered to the mining population in coal towns such as nearby Avella and Burgettstown. G. Wayne Smith, historian of Greene County, reports that in the 1880s onward, the county was also "a large supplier of poultry for the Pittsburgh market." At holiday time, turkeys were "driven [to a warehouse] near Waynesburg in droves of 500 to 600 from different parts of the county," having been "collected at farm houses.. and driven… over the public roads like sheep." Washington and Greene Counties continued to produce more swine than average on a per-farm basis, (though per-farm numbers did decline between 1880 and 1927 along with the rest of Pennsylvania).[94] Again, it is plausible to assume a link with local markets.
The Pennsylvania Department of Agriculture Annual Report noted in 1902 that Washington County farmers were beginning to pay more attention to fruit.[95] Indeed, with 66 bearing apple trees per farm, Washington County in 1927 had double the average number for the state. Other sources report peaches and plums.[96] As before, blackberries, raspberries, blueberries, and other small fruits were widely grown or gathered.

The family garden continued to hold a crucial place in the farm household economy. Probably much the same crops were grown and put by as in previous generations.

The *Twentieth Century History of Washington County* noted that by 1910 dairying was "an important business near Washington and Monongahela City and near the other towns and mining settlements. Milk is hauled several miles and sold to the local consumer. This industry has become a very important one in the county." In the state as a whole, 60 percent of milk produced on farms in 1890 had been used to make butter on the farm; by 1924, farm-made butter accounted for about 20-30 percent of milk produced. Washington County followed these trends in the proportion of milk sold in fluid form, and in addition maintained its above-average

[93] National Stockman and Farmer, July 12, 1894, 22.
[94] G. Wayne Smith, *History of Greene County*, 91, 93.
[95] Pennsylvania Department of Agriculture *Annual Report*, 1902, 451-2.
[96] *National Stockman and Farmer* May 3, 1894, 23.

production that had been established in the late 19th century.[97] In Mercer and Lawrence a similar trend prevailed.

In Greene County, an opposite trend held. In fact, dairy production declined there, from 4.5 million gallons in 1889 to 2.7 million gallons in 1924. More surprising, per-cow milk production also declined, from an average of 463 gallons to just 359 (the state average in 1924 was 502), and farm-made butter declined too. It seems probable that either the figures were incorrectly recorded, or that a decline can be attributed to Greene County's poor competitive position in this period, when the "milk shed" for other, better situated areas was expanding because of improved transportation and more reasonable topography. A 1925 soil survey of the county noted that "Little attention is given to dairying in the county" even though "the hill farms are well suited to dairy farming…" It attributed this discrepancy to the terrain and poor roads: "the roads are almost impassable in the winter and spring, [so] it would at times be difficult to deliver the milk to shipping points. On some farms butter is made and stored until the roads dry up enough to be passable."[98] An evocative photo in a county history showed two women proudly posing with their churns in front of a springhouse.

Figure 111: Washington County livestock, 1927.
Figure 112: graph, milkproduction 1924.
Figure 113: graph, milk production sample counties.
Figure 114: graph, Washington County Farm Crops, 1927.

***Labor and Land Tenure, 1890-c1930***

Farm tenancy rates decreased during this period, that is, a greater proportion of farms in Pennsylvania was owner-occupied and operated in 1930 than in 1890. This might seem counterintuitive, since the intervening years were mainly marked by agricultural depression. To explain the apparent anomaly, we should bear in mind several factors. First, the total number of farms was dropping, so even if the percentage of tenants was dropping, agriculture was not necessarily thriving. Second, Lewis C. Gray, eminent agricultural economist and historian, attributed the shift in proportion of owner-occupied farms to increased industrialization and urbanization, which provided more opportunities for small-scale farming, off-farm income, and part-time farming in New England and the mid-Atlantic, where the trend prevailed. Cities and

[97] Joseph Fulton McFarland, *Twentieth Century History of the City of Washington and Washington County, Pennsylvania* (Chicago, 1910), 122. 1890 numbers are Based on George Fiske Johnson's figures, page 27. He used a conversion formula of 8.8 pounds milk to the gallon, but others advise a factor of 8.5 pounds. This is why the percentage estimates vary.

[98] S. O. Perkins, *Soil Survey of Greene County, Pennsylvania.* U. S. Department of Agriculture, Bureau of Soils, 23rd Annual Report, 1921, 1257.

industries essentially allowed farmers to hold onto their land, either by farming it or by taking off-farm employment nearby.[99]

Between about 1895 and 1915, oil, coal, and gas leases began to supply appreciable income to southwestern Pennsylvania farming families. No definitive estimate of income has been located in research, but more than one observer blamed royalties for the low state of agriculture in the region.[100] They sometimes implied that farm families collected their checks, sat back, and neglected the land. Yet, the figures don't seem to bear out this charge. During this period, it seems that comparatively little land was actually taken out of production; the two counties still ranked among the state's highest in terms of percentage of land under cultivation.[101] On the other hand, the agricultural census figures do suggest that there was less agricultural activity overall, because no substitute of similar scale offset the huge decline in sheep raising. Jobs were opening up in coal mining and in the oil and gas business, so it is very likely that some rural people took off-farm employment to supplement dwindling farm income. More research is needed to clarify the nature of this important shift in labor patterns. For now it seems valid to say that farm families in the southwest made their living by combining market farming, subsistence farming, off-farm employment, and occasional lease or royalty payments. It would be interesting to know if the farming was taken over by women while men went off to work in the mines and oil rigs. This did occur in the bituminous mining regions further east, so it is not unlikely. In Mercer and Lawrence, other extractive industries (such as limestone quarrying) and manufacturing (the tin plate industry for example) played a similar role to gas and oil in Washington and Greene.

Not only the content but the nature of farm labor changed. Many processes were transformed by technology. Machinery and other technologies (like electricity) assumed a greater role in farming and in rural life. About half of farms surveyed in the 1927 census had telephones, and about a third had radios. Electrification came to parts of the region by the 1930s, bringing lights and other amenities. Nonetheless statewide only 24 percent of Pennsylvania's farms were electrified in 1935, and the rural cooperative movement was absent from the southwest.[102] Extension agents encouraged rural families to use electricity to pump water and run farm machinery. Though electricity only slowly became a major factor in typical farm life, its impact among the families who acquired it was profound.

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[99] L. C. Gray, "The Trend in the Farm Ownership," *Annals of the American Academy of Political and Social Science*, Vol. 142, Farm Relief (Mar., 1929), pp. 20-26; M. E. John, "Part-Time Farming in Six Industrial Areas in Pennsylvania," Pennsylvania Agricultural Experiment Station Bulletin 361, May 1938.

[100] Greene County Planning Commission, *The Economy*—(Waynesburg, PA, 1958)

[101] See Austin Vardell Edwards, "Agricultural Land Use Changes in Pennsylvania by Minor Civil Divisions," MS Thesis, Agricultural Economics and Rural Sociology, Pennsylvania State College, 1953, Figure 3. Most of Washington and Greene Counties had over 94% of their land area in cultivation.

[102] "Inventory of Rural Electric Cooperatives, Pennsylvania, 1946," Pennsylvania Agricultural Experiment Station Bulletin 491, November 1947, Digest.

Almost all farm families in the four counties had an automobile or a truck, or both, by 1927. The auto significantly reshaped work patterns in many families, as it came into use for marketing, visiting, errand running, and the like. There is little direct evidence from the region itself, but other work has shown this. Women, for example, often found themselves in a supporting role, driving the car to run errands, fetching parts or supplies, and so on.[103]

Mechanization of field work also continued. However, it is important to note that even in the twentieth century this process was gradual and uneven. Tractor ownership ranged from average in Washington and Lawrence Counties, to slightly below average in Mercer County, to well below average in Greene County. (Statewide the average was around 15 percent.) Much work was done with horse power or stationary engines even to the mid twentieth century. There were limits to technological adoption, including lack of financial resources, but also topography. The Greene County soil survey, completed in 1921, noted that "many slopes are cultivated which are too steep for the use of labor-saving farm implements. Sleds are used by many farmers for hauling their hay and grain from many of the fields." Surprisingly, even the cradle was in use on some of the rougher slopes. "Tractors are not used." [104] In Mercer and Lawrence, where topography was not as formidable, tractor ownership was slightly higher, but still not universal by any means.

Most farm labor was still done mainly by family members, probably with occasional hired help. The 1921 Greene County soil survey said that "a large percentage of the farmers get along without any hired labor, except exchange at threshing time."[105] Oral histories from the 1970s (documenting the 1920s, 30s, and 40s) suggest that subsistence work – the family competency -- was still very important. Family members pitched in to complete virtually every type of farm task. One Washington County woman, Jeannette Hamilton, born around 1910, said of her mother:

> She'd hoe corn, then at dinnertime she'd grab us up, and she'd grab up a chicken and cut off its head and get dinner, and go out again until bedtime…. My sister and I, we went out and worked in the fields, drove the horses and the binder, pitched the sheaves. Many, many a day I've done that….When we were married, we did everything here: we butchered and made our cider; we did everything. We went to the store for sugar and flour and that kind of thing, but the rest of the stuff we made.

Her husband joined in:

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[103] Interrante, Joseph. "'You can't Go to Town in a Bathtub: Automobile Movement and the Reorganization of American Rural Space, 1900-1930." Radical History Review Fall 1979.
[104] S. O. Perkins, *Soil Survey of Greene County, Pennsylvania.* U. S. Department of Agriculture, Bureau of Soils, 23rd Annual Report, 1921, 1252, 1258, 1259.
[105] S. O. Perkins, *Soil Survey of Greene County, Pennsylvania.* U. S. Department of Agriculture, Bureau of Soils, 23rd Annual Report, 1921, 1259

> We would cure that pork here, eight to ten hogs, every winter. Dry-cure it. That was our meat. All summer we ate dried pork that was cured. We cured the shoulders and the hams and sides. The rest got into sausage and lard. We rendered the lard out of them hogs, and that was the shortening for baking.[106]

It is very likely that opportunities for off-farm labor for men resulted in the women taking on more farm work. Little direct evidence has yet come to light about this, but studies in the 1930s and 1940s documented large numbers of "part-time" farms.[107]

***Buildings and Landscapes, 1890-about 1930***

In general, the repertoire of farm buildings during this period reflected the agricultural patterns of the period. Since crop patterns emphasized hay, oats, and feed corn, hay barns, granaries, and corncribs were common. The continuation of sheep raising (even if diminished) was reflected in sheep houses and multipurpose barns, and in extensive pasture and hay land. Increased attention to dairying took form in the occasional silo, corncribs, and re-worked barn basements. (Milk houses mainly came later.) This was the peak time for horse-power farming and stationary engines, so machinery storage became commonplace. Poultry housing also became more common. Documentary sources hint at a powerful role for subsistence activity, and buildings show this still more clearly. Most spring houses and summer kitchens documented in field survey work date not to the 19th century, but to the twentieth. Geographer Richard Beach states that the sheep barn was located close to the farm house in this period because of predator dogs.[108]

*Houses, 1890-1930*

Relatively little new housing appeared during this period of economic downturn. Among those that were built, the foursquare was the most popular. The foursquare is a classic 20th century design, variants of which appeared all over the U.S. between about 1900 and 1940. As its name implies, the building is roughly cubic in shape, with pyramidal roof and often a dormer projecting from one roof face. Often a porch spans part or all of the front elevation. Designs for foursquare houses were available from mail order companies such as Sears, Roebuck, and they were also easily imitated. Most are balloon frame structures. The foursquare represents standardized, industrialized home building and style.[109]

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[106] Bruce Weston, ed., *the People of Southwestern Pennsylvania* (California, PA, 1991), 4-5.
[107] See for example "M. E. John, "Part-Time Farming in Six Industrial Areas in Pennsylvania." Pennsylvania Agricultural Experiment Station Bulletin 361, May, 1938.
[108] Beach, *Two Hundred Years of Sheep Farming*, 57, 85.
[109] Foursquare houses appear at the following sites: 802212, 802260, 802270, 802176, 802363, 802407, 802414, 802422, 802428, and 802484.

Figure 115: Foursquare house, Greene County.

*Spring House, 1890-1930*

Interestingly, quite a few new spring houses were built in the twentieth century throughout the region.110 A fine example of a rock-face concrete block springhouse can be seen at site 073-SCO-005 in Lawrence County, a beveled concrete block springhouse at 073-SCO-007, and a regular block springhouse at 073-WAS-003. There is another rockface block springhouse in Mercer County at 085-WIL-004 and a hollow tile one at 095-WIL-007. What explains this late persistence? Census data indicate that the counties, where these buildings were found, had lower than average fluid milk production; they also had higher than average farm butter production, coming in at over 200 pounds per farm. This is not a high number, and it is lower than 19th century figures. Nonetheless, this amount is roughly what Joan Jensen estimated would supply a farm household in the mid 19th century, so it is plausible that these twentieth-century springhouses were an important facet of subsistence strategies, particularly considering that farm income in the 1920s was threatened by gathering agricultural depression and decline in the sheep industry. Perhaps, since industrial employment was more easily obtained by men, women's work assumed greater importance on the farm.

Figure 116: Rockface concrete block spring house, Washington County.
Figure 117: Frame spring house with glazed tile block lower story, Washington County.
Figure 118: Frame spring house, Washington County.
Figure 119: Spring House, Scott Township, Lawrence County.
Figure 120: Spring House, East Lackawannock Township, Mercer County.

*Root Cellar, 1890-1930*

A root cellar is an excavated and covered area that stores potatoes, turnips, carrots, cabbages, and other crops. Sometimes barns had root cellars, but these small detached structures were for household use. In this period when household subsistence gained ever greater importance, a root cellar was a very useful space.

Figure 121: Stone root cellar, Washington County.

*Summer Kitchen, 1890-1930*

110 Survey sites in Washington county with twentieth century spring houses include those numbered: 802215, 802216, 802241, 802296, 802257, 802263, 802275, 802276, 802280, 802283, 802289, 802292, 802293, 802300, 802302, 802304, 802324, 802336, 802348, 802350, 802 356, 802357, 802377, 802413 and 802417.

A "summer kitchen" is a small free standing structure usually sited just to the rear of the main house. Architectural characteristics of the summer kitchen include: frame construction, often of a higher level of finish than would be found in rougher outbuildings; stove or set-kettle; tables; ample windows for lighting; human-scaled doors, sometimes paneled and usually with knobs (as opposed to mere latches) -- thus signaling that this was mainly a building for human work and occupancy. As its name implies, it contains facilities for cooking and other food preparation. The standard assumption about these buildings is that they functioned to remove heat and especially messy tasks from the main house. While this explanation is logical, it is mostly untested. In many parts of Pennsylvania, for example, detached kitchens appeared in two distinct periods and seem to have served two different purposes. Early ones (c 1790-1820) appeared most often on the properties of artisans and tavern keepers, suggesting a function related to those occupations; they also provided work space in an era of very small houses. A later wave in the late 19th and early 20th century removed heavy food processing (but not always everyday cooking) from the main house. The later wave coincided with the elaboration of the farm family's "competency." The very term "summer kitchen" did not seem to come into common use until the mid 19th century.[111] It is quite possible that the timing of its appearance can be related to the adoption of the stove for both cooking and heating. Here's why: the wood-burning cook stove, popularized from the mid 19th century onward, did create considerable heat and took up space in the middle of a room, unlike its open-hearth predecessor. Simultaneously, heating stoves permitted greater architectural flexibility, because a building didn't need to be designed around heavy, structurally complex hearths and flue systems. The result was that cooking was increasingly isolated within the house, and the extreme expression of this was the summer kitchen. There is some evidence that people actually moved the cook stove into the main house for the winter, and into the summer kitchen for the summer.[112] The summer kitchen should also be interpreted as a reflection of the increasingly complex subsistence work, done mostly by women, in this period.[113] Overall, most summer kitchens are likely to date to the very end of the nineteenth century onward. Some historians suggest that families actually ate meals in the summer kitchen in summertime.

In Washington County, documented summer kitchens mostly date to the late nineteenth and early twentieth century.[114] Summer kitchens also appear in Mercer and Lawrence Counties.

Figure 122: Summer kitchen, Washington County.
Figure 123: Summer kitchen, Washington County.

[111] Eli Bowen mentions a "summer dining kitchen" in his *Pictorial Sketch-Book of Pennsylvania,* 1852 edition.
[112] Priscilla Brewer, *From Fireplace to Cookstove: Technology and the Domestic Ideal in America.* Syracuse: Syracuse University Press, 2000.
[113] Sally McMurry, *From Sugar Camps to Star Barns,* (University Park, PA, 2001), 140-144.
[114] Survey sites with summer kitchens, all but one in this date range, include those with numbers: 802227, 802228, 802247, 802283, 802372, 802509, 802515, 802516, 802529, 802534, 802535, and 802547.

Figure 124: Summer kitchen, Washington County.

*Bake Oven, 1890-1930*
The outdoor bake oven is a rare structure in the area, but a few survive. These testify to the ongoing importance of subsistence activities and women's work.

Figure 125: Outdoor bake oven, Washington County site 802252.

*Barns 1890-c1930*
After the barn building boom of the late 19th century, it appears that farms in the area continued to use the barns built during that era, in some cases adapting them to new production patterns. For example, at Washington County site 802546 a barn was adapted for poultry production. In general, remarks made about barn function for the prior period still hold for this one. Given the shrinkage of agriculture, these older barns must have been more than adequate in most cases. The basement barn was the overwhelming choice, though a few ground-level barns were scattered in the region.

Figure 126: Center-gable basement barn, Washington County.
Figure 127: Basement barn with eaves side shed roof extension, Washington County.
Figure 128: Basement barn adapted for poultry, Washington County.

Gable entry bank barn: The Gable front bank barn (Thomas Visser's term, also called gable-entry banked barn by geographer Allan Noble) reflected both the rise of dairying and increasing cost of labor. Cows, manure, granary, and occasionally roots (for feed) would be situated on the ground floor. The stalls or stanchions were usually arranged lengthwise (i.e. parallel to the roof ridge), in two rows flanking a central aisle (cows usually faced outward, but in some barns inward). On the upper level, hay and machinery were stored. A large gable-end entry sometimes provided easy access, while gravity aided feeding hay to the stables below.[115]

Figure 129: Gable-entry bank barn, Washington County.
Figure 130: Gable-entry bank barn, Washington County.

Appalachian Meadow Barn: Allen G. Noble has discussed a barn type he calls the "Appalachian Meadow barn."116 This is a small barn, usually "rectangular, vertical sided, and painted." It has a small door in the gable end, and often a hay door in the gable peak. Noble reports that this barn has not been studied, and that its function seems to vary. If it serves for hay storage, he

[115] Allen Noble, *Wood, Brick, and Stone: The North American Settlement Landscape* (Amherst, Massachusetts, 1984), 39; Thomas Visser, *Field Guide to New England Barns and Farm Buildings,* 76-83.

[116]Allen G. Noble, *The Old Barn Book* (New Brunswick, NJ, 1995), 130-131.

notes, it is often isolated in a meadow location. The barn at Greene County site 802864 (below) fits the description well, and resembles the photo Noble provides in his book.

Figure 131: Appalachian meadow barn, Greene County.

*Sheep Barn, 1890-c1930*
Sheep barns continued to be built even during this period of retrenchment. Their basic characteristics did not vary significantly from the earlier period.

Figure 132: Sheep barn with glazed tile block foundation, Washington County.

*Granary, 1890-c1930*
Grain growing continued more or less at the same levels as in prior periods, so granaries also continued in use. Examples from this period can be found at many sites.

Figure 133: Granary, Washington County .
Figure 134: Granary, Washington County .

*Carriage House, 1890-1930*
This period saw a transition from horse drawn transport to the auto. Nevertheless carriage houses would have predominated up to at least 1920. As before, these buildings were mainly intended to house equipment for human transportation, and the horses which drew them. As such, they commanded a privileged place in the farmstead site plan, usually in proximity to the house. According to Thomas Visser, early ones were "distinguishable by their large hinged doors, few windows, and proximity to the dooryard."117 A carriage house would not usually be as large as a barn, and it might sit on the same side of the road as the house; also, carriage houses not uncommonly had some ornamental architectural trim that would not always appear on a barn. Interiors (originals that is) would have large stalls and a hayloft above. In the sheep regions, it should be kept in mind that the loft may have furnished storage for wool. Later examples may have been converted to garages.

Figure 135: Carriage House, Washington County.
Figure 136: Carriage House, Greene County.
Figure 137: Carriage House, Greene County.
Figure 138: Carriage House, Greene County.
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Figure 139: Carriage house, Washington County.

[117] Visser, *Field Guide to New England Barns*, 145.

*Corn Crib, 1890-c1930*
The description of corn cribs supplied for the earlier period applies to this one, too. Many more survive from this period. They were made of standard milled cribbing, and often were incorporated into machinery sheds. The region did not raise a great deal of corn in comparison with other counties in the state, but nonetheless the crop needed protection.

Figure 140: Corn crib, Washington County.
Figure 141: Machine shed and corn crib combination, Greene County.

*Machine Shed, 1890-c1930*
Machinery was not as predominant as in other regions, so machine sheds in the sheep region tended to be small in scale and basic in function.

Figure 142: Machine Shed, Greene County.

*Privy, 1890-1930*
This "necessary" building was virtually universal even into the twentieth century.

Figure 143: Privy, Greene County.
Figure 144: Privy, Greene County.

*Hog House (Pigsty, Pig Pen), 1890-c1930*
Hogs were raised for household consumption and also occasionally for sale to the coal patch towns. The proximity of markets helps to explain why southwestern farms continued to raise more hogs, on an average, than farms elsewhere in the state. Facilities for them were small in scale.

Figure 145: Hog House, Greene County.

*Poultry House, 1890-c1930*
As the local history notes, poultry became slightly more important as coal-town and oil-rig markets developed. A typical farm in the region might have seven or eight dozen birds, accommodated in small poultry houses. These houses would normally be sited close to the main house, because poultry raising work at this scale of operation was still typically done by women and children. Brooder houses are uncommon, suggesting that perhaps the scale was not large enough to warrant it; chicks could be kept in the kitchen. These houses would be for layers.

Figure 146: Poultry house, Greene County.
Figure 147: Poultry House, Greene County.
Figure 148: Poultry house, Greene County.

*Hay Barn, 1890-c1930*

The Greene County soil survey of 1921 reported that most of the hay was stacked in the field and either fed directly from the stack or hauled to the barn in winter when needed. The author concluded, "It seems to be the best way of handling it on the steep slopes," though quality was compromised.118 Hay barns, if erected, would normally be sited near the meadow.

Figure 149: Hay barn, Greene County site.

*Landscape features, 1890-c1930*

Landscape features in this period probably began to show signs of fraying, but the fundamental features continued from the previous era. Pasture was still very prominent and wood lots small. Fencing was important, though by now a shift to wood-and-wire fencing was beginning. Crop fields were still irregularly shaped and relatively small. A few homesteads had windbreaks or ornamental evergreens, but these were not common. Orchards were very common but have all but disappeared.

Figure 150: Crop fields and treelines, Washington County site 802545
Figure 151: Drainage Ditch, Washington County site 802545
Figure 152: Pasture, wire and wood fencing, gate, sentinel trees, Greene County site 803148
Figure 153: Pasture, woodlot, fencing, Greene County 803144

**1930-1960: Crisis and Decline: Land Use Shifts and Further Agricultural Adjustments**
**Products, 1930-1960**

In the mid 1960s, a report on the local economy concluded: "The agriculture of Greene County is in trouble."[119] This was less the case in Washington County, but overall, between 1930 and 1960, it was an accurate characterization of agriculture in the southwest. The same was true of Mercer and Lawrence Counties. The Great Depression hit farmers hard, and the southwest was no exception. In the ensuing decades all counties lost rural population and whatever precarious competitive edge they might have enjoyed eroded badly. For all, sheep raising had lost much of its viability. Especially in the two southwestern counties, local topography was very unsuited to mechanized farming, which became the norm during this period. In any case, erosion had taken its toll. Competition made it extremely difficult for local farmers in every agricultural sector; in the region, other areas met local dairy, egg, and poultry needs more effectively, and from the

[118] S. O. Perkins, *Soil Survey of Greene County, Pennsylvania.* U. S. Department of Agriculture, Bureau of Soils, 23rd Annual Report, 1921, 1256.
[119] Robert Campbell, *Southwestern Pennsylvania economic development programs* AREA inc., 1963-4, 50.

nation and world, grain and livestock products flooded markets everywhere, making it very hard for farmers on marginal soils with steep, hilly ground to make a living. In Mercer and Lawrence Counties, the predominant types of farming were those the agricultural economists called "abnormal" and "general," while the second most predominant were dairy farms. "Abnormal" farms were primarily part-time farms in which the operator spent 150 or more days off the farm.[120]

The impact of oil, gas, and coal extraction compounded the difficulties in Washington and Greene, and industrial complexes did the same in Mercer and Lawrence. For example, farm water supplies were compromised, both in quantity and quality. The Washington county agricultural extension agent reported in 1960 that "With the development of the coal mining industry, farm water supplies have been lost entirely or seriously depleted. Wells and springs have gone dry. Not only these sources have been lost, but streams are being polluted by pumping mine water into them. Livestock will not drink from heavily polluted streams."[121] Nonetheless even as late as 1954, three-quarters of the land in Greene County was in farms, a high percentage. Probably much of this land was devoted to non-intensive uses, or even allowed to lie fallow, and to production that was near subsistence levels. Some land was taken out of production and converted to game lands; the state game commission bought up many farms in western Greene County.[122]

Nevertheless a few commercial farms managed to keep on operating. A report from the Greene County Planning Commission in 1958 noted that beef cattle and, "more recently," dairy cattle had been raised. With the rise of mining communities in the eastern portion of the county, markets opened up for dairy and poultry. The dairy portion of farm products sold in the county increased from 23 in 1940 to 35 in 1954.[123] There was an increase in the sheep population between 1950 and 1960, as prices rose. Lamb replaced wool as the main sheep product.[124] Immigrant populations were accustomed to eating lamb, especially for Christian holidays, and eventually the sheep farmers learned to cater to this market.

Acreage of grain corn, oats, and potatoes all dropped drastically by 1950, while hay acreage also declined but not so steeply. The number of bearing-age apple trees in Greene County went from 176,000 in 1890 to a mere 25,000 in 1950, and a similar decline was reported in Washington

[120] Emil Rauchenstein and F. P. Weaver, "Types of Farming in Pennsylvania," *Agricultural Experiment Station Bulletin 305* (April 1934), 41.
[121] Penn State Agricultural Extension Archives, Greene County agent report, 1960.
[122] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 60; Penn State Agricultural Extension Archives, Greene County agent report for 1955.
[123] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 11-2, 63. See also Penn State Agricultural Extension Archives, Greene County agent report, 1948, 1949.
[124] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 64; Penn State Agricultural Extension Archives, Greene County agent report, 1950

County (207,000 to 61,000.) The numbers of cattle, including milk cows, increased, reflecting stepped-up dairying activity. While horse numbers of course declined with the advent of gas power, there were still nearly two horses per farm as late as 1950. As mentioned before, sheep numbers dwindled to total about 100,000 by 1950, this time with the majority being in Greene County. Poultry numbers increased in Washington County, but declined in Greene by 1950.[125] In Mercer and Lawrence Counties, similar trends held, with possibly an even greater relative decline in crop production.

***Labor and Land Tenure, 1930-1960***

In many if not most farm families, the males worked in local extractive industries at least part of the year. This was particularly true in Greene County, which in 1950 ranked # 2 in the state in the percentage of part-time farms (28).[126] While off-farm work may have been available to women, it is more likely that they were the ones responsible for many day to day farming operations. A 1938 survey found that women and children together accounted for over half the days of labor performed on part-time farms, concentrating on livestock care and gardening.[127] Farm income accounted for about 18 percent of household income, with off-farm employment bringing in 75% and other sources (pensions, rents, board, direct relief) the remainder. The farms surveyed were small and explicitly determined to be "part-time farms."[128] Another study, however, found that among all farm operators, off farm employment doubled in the World War II period. By 1950, in Greene County fully half of farm operators worked off the farm 100 or more days per year.[129] The study did not estimate the role of off-farm work for owners of larger farms.

In 1950, Mercer and Lawrence Counties had mechanized along with the remainder of the state, but Washington and Greene County farms were under-mechanized relative to the rest of the state. Only a quarter of the farms in Greene County had tractors, and half of those in Washington County; compared with over sixty percent statewide. Only two percent of Greene County farms had silos, compared with 17 in Washington and 25 statewide. This shows the relative influence of dairying in the southwest, especially where Greene County was concerned. The number of automobiles in Greene County actually declined between 1950 and 1954, and the number of trucks increased. Varner concluded that families had to choose one or the other. Notably, the number of tractors went from 739 in 1950 to 1229 in 1954. This is a remarkable sign of a rapid and rather late transition away from horse power.

[125] Pasto,"Century of Farming." For a good overview of Greene County patterns in the 1950s, see Penn State Agricultural Extension Archives, Greene County agent report for 1952.
[126] Pasto, "Century of Agriculture," 41.
[127] John, "Part-Time Farming," 14-15.
[128] John, "Part-Time Farming," 9-12.
[129] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 61.

During the Second World War, labor problems pressed heavily as they did elsewhere. Competition for workers from nearby steel mills, a pipeline project, and federal housing construction made farmers anxious. Skilled shearers were in particularly short supply. The local extension office had enough clout to obtain draft deferments for quite a few young farm men. Meanwhile, women invested extra effort in Victory Gardens.[130] Throughout the period, the availability of work in the mines, oil fields, and (in Mercer and Lawrence Counties) a huge TNT plant attracted workers away from farms.[131]

By 1950, both Washington and Greene had tenancy rates right around the statewide average, ie 20 percent. In both counties, tenancy had declined since 1910.[132]

***Buildings and Landscapes, 1930-1960***

*Houses, 1930-1960*

Electrification came to more parts of the state in this period. Washington, Mercer and Lawrence gained, but Greene County lagged behind. By 1950, three quarters of Greene County farms had electricity (as opposed to over 90% statewide), and two thirds had mechanical refrigeration (as opposed to nearly 80% statewide). Only 17 percent had central heating (compared with nearly half statewide).[133] These technological introductions, rather than any fundamental stylistic shifts, characterized domestic architectural change in the period, since few houses were dated to this period in the field survey work.

*Privy, 1930-1960*

In 1950, only 30 percent of Pennsylvania's farms had indoor flush toilets, and only 33 percent had hot and cold running water. [134]

Figure 154: Privy, Washington County.
Figure 155: Privy, Greene County.

*Barns, 1930-1960*

A Greene County report noted that there was an "absence of suitable dairy barns" owing to lack of financial resources to build or even to convert existing barns.[135] During this period, the basement barn continued to be popular. However, farm architecture as well as other farm operations were influenced by mechanization, standardization, and industrialization. Field survey work did document a number of 20th century barns, many of which were built of new

[130] Penn State Agricultural Extension Archives, Greene county agent report for 1943, 1944, 1945.
[131] Penn State Agricultural Extension Archives, Greene county agent report for 1954.
[132] Pasto, "Century of Agriculture," 54.
[133] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 66; Penn State Agricultural extension archives, Greene County narrative report, 1946.
[134] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 66.
[135] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 64.

materials to new designs. These barns have been put into several different classifications by scholars Thomas Visser and Allen G. Noble. Their classification systems are cross-cutting and analytically confusing. Here I attempt to explain them, and to propose a reasonable compromise.

Visser uses the term "ground-level stable barn" and Allen G. Noble uses the term "Wisconsin dairy barn" to refer to a 20th century barn that was built all on one level, often with original concrete flooring and concrete block foundation walls. Two rows of stanchions lined the eaves sides, and multiple large windows along the eaves sides admitted ample light. The story above (really more like a story and a half, since the ground floor story had low ceilings) functioned as a hayloft and had a large hay door and hay hood in the gable end. Ground-level stable barns could be built with gambrel roofs or a Gothic (also called "round roof" or "rainbow roof")[136]. This latter roof type is usually a pointed arch or sometimes rounded. It was made possible by new truss systems, sometimes prefabricated, and it allowed more hay room than even a gambrel roof. Some companies in the Midwest offered complete designs and materials for these barns. They were designed to be specialized, ie to house and feed dairy cattle. These barns could be large or small, (though Noble suggests most were at least 36 feet wide and as long as 100 feet). Most of the ground-level stable barns observed in field survey were relatively small. They thus were well suited to the modest numbers of animals on southwestern Pennsylvania farms. The term "ground-level stable barn" seems to capture the type best, since it is descriptive and does not limit the range to the Wisconsin version, which tended to be large.

A related type has similar features (concrete block construction, gable end door, lengthwise arrangement of stanchions, upper level hay storage, concrete flooring) but has multi level access. Allen G. Noble uses the term "raised round-roof barn" (46) for these structures. The features that differentiate this type from the ground-level stable barn are multi-level access, and the large hay door on the upper eaves side, which is designed to admit the high hay wagons of the mid 20th century. They also almost always have round or rainbow roofs, but to call a barn by a roof type is problematic, because many types of barns either had round roofs or were later covered with round roofs. Perhaps the term "raised round-roof stable barn" would best capture its diagnostic characteristics.

Regardless of specific configuration, these barns all represent rationalizing, specializing, industrializing agriculture. Their very materials -- mass produced and marketed—came out of an industrialized building system. The barns themselves were marketed by corporations. Companies such as Sears, for example, sold "kit" barns, as did lumber concerns like Weyerhauser.

Figure 156: Ground level stable barn, Washington County.

[136] Noble suggests that Wisconsin Dairy Barns only have gambrel roofs, but field work does not seem to bear this out.

Figure 157: Raised round-roof stable barn, Washington County.

*Silo, 1930-1960*

A silo is an airtight structure that holds fresh organic matter (moisture content 50-65 percent) destined for winter animal feed. It is filled with shredded or chopped grass, corn, or sometimes other plant material, which ferments into a highly nutritious and palatable feed. Silage feed resulted in significant productivity increases for dairy cows, and also permitted marginal farms to carry more animals. Ensilage was first publicized in the US in the late 19th century when the results of experiments in Europe became known. However, it did not become widespread until dairying was taken up more seriously.

Silos can be constructed horizontally in pits, or vertically. Most silos of the first half of the twentieth century were vertical. Early silos were sometimes placed inside the barn, rectangular in shape, and of wood construction. These were quickly supplanted by round vertical silos located outside the barn, usually in a spot that would permit efficient filling (usually from holes in the top) and unloading (usually from a tier of doors from which silage was thrown down an exterior chute, which contained a ladder for access to the doors). Early silos were unloaded by hand, from the top. The land-grant establishment published many "how-to" brochures aimed at helping farmers build their own silos of wood or concrete. Because masonry is more durable and cleaner, it became the norm. Commercial organizations marketed many types of silos too. Some sold special curved brick; others made tiles; still others advertised systems depending on interlocking rings of poured concrete. Cement staves became popular after about 1910. Galvanized iron was mentioned by I. F. Hall in a 1929 study of farm buildings.[137] A 1918 Pennsylvania State College circular (# 72) mentioned wood stave, hollow tile block, poured concrete rings, concrete staves, concrete blocks, metal, and bricks as silo construction materials.[138] Alan Noble, in *Wood, Brick, and Stone*, argues for a sequence in roof types, from gable to cone to hip to dome to hemisphere.[139] In the southwestern counties, silos are common, mainly dating to the mid 20th century when dairying became more general.

Figure 158: Wood stave silo, Washington County.
Figure 159: Metal silo, Washington County.

*Garage, 1930-1960*

As autos and trucks definitively replaced horse transport, the garage replaced the carriage house for good. Sited near the house and sometimes given a relatively high degree of finish, the garage marked the importance of the automobile in rural life.

[137] I.F. Hall, "An Economic Study… 60.
[138] United States Department of Agriculture. *United States Department of Agriculture Circular #72.* Washington, D.C.: Government Printing Office (date unknown).
[139] See Alan Noble, *Wood, Brick, and Stone*…

Figure 160: Garage, Greene County.

*Springhouse, 1930-1960*

Figure 161: Spring house, Greene County.

Spring houses continued to be built and used right up through the end of this period. New materials replaced the earlier stone, brick, and wood. Some were built with hollow structural clay tile, a material produced in abundance in the Pennsylvania southwest, and very much a product of the region's industrial history. Hollow structural clay tile block became popular late in the 19th century. Manufactured using an extrusion process, it possessed varied qualities including different degrees of porosity and extreme hardness. Structural clay tile was used in load-bearing walls on small buildings; farm outbuildings were good candidates. Facing tiles with glazed, matted, or mottled surfaces became popular in the 1920s. A major manufacturer was the National Fireproofing Company of Pittsburgh. Companies that produced drainage tile often also produced building block.[140] Rock face concrete block continued in use, and cinder block appeared also.

Figure 162: Spring house,Washington County..
Figure 163: Springhouse, Washington County.

*Workshop, 1930-1960*
Agricultural reformers touted the desirability of farm workshops. A few farm workshops were recorded in the survey.

Figure 164: Workshop, Greene County.

*Milk House, 1930-1960*
The milk house was another major new form on the twentieth-century dairy farm. It wasn't a big building, but is an important reminder of the new role of the state and the agricultural establishment in agriculture. The state (meaning the government at any level) influenced the construction of milk houses in the first place, because during the Progressive and New Deal eras, legislatures and municipalities passed sanitary codes that required inspection not only of milk, but of dairy herds and milk production facilities.[141] New York City pioneered in these efforts, and also seems to have been more effective at enforcement than other areas. In Pennsylvania, according to Stevenson Fletcher, a very few municipalities had inspection laws starting in the

[140] Thomas C. Jester, *Twentieth-Century Building Materials, History and Conservation* (New York, 1995), 152-3.
[141] The New York City "Dairy Report Card" is reproduced in I. F. Hall, "An Economic Study of Farm Buildings in New York," Cornell University Agricultural Experiment Station Bulletin #478, 1929, 29-34.

late 19th and early 20th centuries; however, enforcement was patchy. The first statewide dairy inspection law was passed in 1929, with a revision in 1933. This law provided for inspection of farm sanitary conditions, including facilities for sterilizing dairy equipment and milk houses for isolating milk.[142] It is not clear how well these were enforced. These regulations were a facet of the assault that was launched on bovine tuberculosis and other diseases in this period, aiming at ensuring a fresh, uncontaminated milk supply. In order to market milk, increasingly farm producers had to comply with regulations that required them to install easily cleaned surfaces (like concrete) in barns, remove milk storage areas from dirt and odors (by building milk houses), cool milk, sterilize equipment, and the like. In Pennsylvania, these regulations took effect relatively late in the southwest. The milk house was one product of these new laws. In turn, its form and construction were influenced significantly by the agricultural establishment (meaning the complex that included state departments of agriculture, the land-grant university and extension apparatus, and agribusinesses). This new element in the farm landscape, therefore, illustrates the growing influence of the "agricultural establishment" on everyday farming practices and landscapes. Agricultural extension agents regularly disseminated plans for milk houses. Likely, for every farmer who followed a plan exactly there were more who either copied his building, or who adapted the basic guidelines using available materials and expertise. The overall result was a new level of homogeneity and standardization.

Milk houses provided a place to store and cool fluid milk before it was transported to market; to store milk cans not in use; and to wash containers (and sometimes other equipment like separators). Plans offered by the USDA for farm milk houses typically gave dimensions ranging about 10x13 feet up to around 12x20 feet. Interior plans for a 10x13 milk house with ell (# 909, "capacity 20 to 30 head market milk") show a two-room plan with door leading to a wash room; milk room to one side, which contained a cooling tank and led to raised loading/unloading platforms and sunning racks, mounted on the outside. The ell contained a boiler room[143] with its fuel supply, and back door. Larger milk houses had the same basic three spaces, only larger, and sometimes equipped with testers and separators. One (#1337) had a churn, butter worker, ripening vat, and refrigerator, and another (#1339) had quarters for workers. Another small, 12x14, one-room milk house (#1341, see illustration) was designed for "butter making by hand" for 20 cows. It contained the same basic spaces, but not divided. The very smallest, at 7x9, had a concrete foundation with a sunken vat for cooling cans of milk.[144] All of these plans had sloping floors with drains, and provision for ventilation and light. After about 1950, milk houses were sometimes altered to accommodate bulk tanks.

[142] Stevenson W. Fletcher, *Pennsylvania Agriculture and Country Life.* Two volumes. (Harrisburg: Pennsylvania Historical and Museum Commission, 1950–1955), Volume 2, 217-219.
[143] These plans appear in USDA Office of Cooperative Extension Work and Bureau of Public Roads Cooperation, *Farm Building and Equipment Plans and Information Series*, 1929.
[144] Pennsylvania Circular 107 says an 8 by 8 house would "do for a dairy of 10 cows."

As they turned to dairying, farm families in the southwestern counties erected milk houses. Now they are commonplace.

Figure 165: Milk house, Washington County.

*Root cellar, 1930-1960*
Root cellars, like springhouses, continued to be built, used, and maintained during these depression years.

Figure 166: Root Cellar, Washington County.
Figure 167: Root Cellar, Washington County.

*Corn Crib, 1930-1960*
The corn crib continued as a standard building on southwestern Pennsylvania farms. Milled lumber gave them a more uniform look.

Figure 168: Corn Crib, Washington County.

*Poultry House, 1930-1960*
Poultry houses in the region continued to reflect the modest scale of poultry raising in the region.

Figure 169: Poultry house, Washington County.

*Hog House, 1930-1960*
As before, hog houses were not very common. Their scale, siting, and layout did not change much, but building materials did change.

Figure 170: Hog house, Washington County.

*Landscape Features, 1930-1960*
Pasture: Varner reported that in Greene County, almost two thirds of the farmland was in permanent pasture in 1954, with only 20 percent in cropland. The proportion of idle land increased significantly between 1945 and 1954, while the proportion of woodland remained constant at less than ten percent.[145] With the increasing numbers of cattle, pasture appearance may have changed in areas where cattle were raised. This is because sheep tend to graze everything very closely, while cattle will leave certain bushes and plants that are not palatable for them. An important post-1940 development was the introduction of multi-flora rose, at first

[145] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 66.

thought to be a promising "live" fence for sheep. In a story too often repeated, it rapidly became a pestiferous weed.[146]

Crop fields: Crop fields were small and irregularly shaped, and relatively few compared with pasture lands. Corn for feed and silage took up a greater acreage, oats decreased as horses disappeared, and wheat decreased from already low levels.

Contour Plowing and Strip Cropping: Contour plowing arranges furrows along contours of slopes, thus reducing runoff. The Farm Journal in August 1935[147] defined strip cropping as "a form of contour farming in which strips of densely-growing, erosion-resistant crops, such as alfalfa, lespedeza, sweet clover, Sudan grass, timothy, and the small grains, are alternated across the slope with strips of cultivated row crops. The strips of erosion-resistant crops check the speed of the runoff, filter out the soil being carried by the water, and cause the land to absorb moisture." The article also noted that strips demanded less labor than square fields and "permit more efficient use of machinery." They also fit well with terraces. The 1941 Lawrence County agricultural extension report says that strip cropping is in use.

This resulted in longer narrower fields, and destruction of some fence lines. The extension reports for northwestern Pennsylvania do not mention this often; in fact, they sometimes noted a pronounced lack of interest in contour plowing, because of relatively flat topography. However, 1930s aerials do show fields with long, narrow strips. It is not clear if these were crop strips or something else. Certainly the region had drainage problems even if soil erosion was not thought to be serious. Even today, there does not appear to be a great deal of contour plowed land, so the likelihood that historic crop fields survive may be greater than in hilly areas[148].

Figure 171: Strip cropping, Washington County.
Figure 172: Strip cropping in Washington Township, Lawrence County.

Woodlot: Wood lots were not very important in this region. Aerials from the late 1930s show how sparse they were; compared with modern aerials for the same sites, it seems that woodlands cover a much greater acreage now than they used to. In the 1939 aerial, a few early contour and strip cropping areas are visible, as is an orchard area (center left portion of image). Some tree lines and fields remain intact nearly seventy years later.

Figure 173: aerial, washington_052439_apt_78_52.jpg

[146] Beach, *Two Hundred Years of Sheep Farming*, 80-82.
[147] Ivy M. Howard, "Crazy Patch Fields," *Farm Journal*, August 1935, 26.
[148] A Good example of current contour/strip cropping can be seen at survey site site 039-CUS-003. There are good views of strip cropping and tree line at 073-SCO-007, also 073-WAS-001, and a beautiful one at 073-WAS-005.

Utility poles and wires: With the coming of electricity, utility poles appeared.

Fencing: Geographer Richard Beach notes several implications for fencing types in the new agricultural regime. As sheep for meat replaced sheep for wool, fencing changed, because wool breed sheep tended to be taller and go over fences, while mutton breeds tended to burrow under. Thus in the mid 20th century, sheep fencing shifted from woven wire with one strand of barbed wire at the top, to woven wire with a board or strand of barbed wire at the bottom. As sheep in general gave way to dairy animals, woven wire became the standard fencing because it was adaptable to more kinds of livestock.[149]

Figure 174: Woven wire fence, Washington County site 802681
Figure 175: Barbed wire fence, Washington County site 802685

Tree Lines, Windbreaks: In the early to mid 20th century, it became popular to create tree plantings for both ornamental and protective purposes. The illustration below is a fine example.

Figure 176: Tree line/windbreak, Washington County Site 802673

Stone walls: A few stone walls were recorded in field survey work. Most seem to be retaining walls created for ornamental and practical purposes. They do not appear as field dividers.

Figure 177: Stone retaining wall, Washington County site 802672

Ponds: In the mid 20th century, supposedly hundreds of farm ponds were built in the region. This was part of a broader enthusiasm for ponds in the prosperous postwar period. Ponds helped to insure a farm's physical plant by providing a ready water source for the fire fighter if needed; they provided for recreation as well. In the southwest, they took on additional importance because they addressed water quality issues created by mining and oil drilling. A. R. Varner reported in 1958 that over 300 ponds had been built in Greene County alone.[150] However, field survey work recorded very few ponds.

Oil or Gas Well Head:

Figure 178: Oil well head, Mercer County.

Most of these will date after 1960, but they were an increasing presence by the mid 20th century.

[149] Beach, *Two Hundred Years of Sheep Raising*, 57.
[150] A. R. Varner, et al, *The Economy …* Greene County Planning Commission, 1958, 66.

Drainage Ditches: As before, drainage ditches provided an important function in channeling water.

Figure 179: Drainage ditch, Washington County site 802873

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http://www.portal.state.pa.us/portal/server.pt/community/pennsylvania%27s_agricultural_history/2584

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Digital Resources:

http://www.sil.si.edu/digitalcollections/SeedNurseryCatalogs/collection.cfm;
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## Registration Requirements for Criterion A, Agriculture, Specific to the Southwestern Pennsylvania Diversified Agriculture and Sheep Raising Region:

**NOTE: Before applying the Registration Requirements specific to this narrative, read the substantive requirements for Pennsylvania as a whole in *Section F. Property Types and Registration Requirements.***

A. Properties that possess a strong representation of typical buildings and landscape features from one chronological phase of the region's agricultural history:

To be considered significant for the period 1830-1850, "Diversified Agriculture and the Rise of Sheep Raising,"

> A **farmstead** should include, at a minimum, a farmhouse typical for the region (for these purposes the "region" means Southwestern Pennsylvania); barn or outbuildings related to general livestock raising, subsistence, or crop production; [151] and architectural evidence of sheep raising. This last could include a larger barn with modifications for sheep (as outlined in the narrative) or a separate sheep barn. A **farm** should have pasture, cropland, or woodlot. A **historic agricultural distric**t would need a collection of farms representing these features.

To be considered significant for the period 1850-about 1890, "the Civil War Peak Period,"

> A **farmstead** should have a farm house typical of the period and place, or an older house showing appropriate modifications; and architectural evidence of sheep raising in the form either of a southwestern Pennsylvania style basement barn, or a separate sheep barn. It should also have architectural representation of crop farming and subsistence activity as shown in buildings such as springhouses, granaries, corncribs, and the like. A **farm** should have landscape evidence of sheep raising especially pasture land. A **historic agricultural district** should have a more or less contiguous collection of farms representing these features.

To be considered significant for the period 1890-about 1930, "Industrialization and Agricultural Reorientation,"

[151] See Northwestern Pennsylvania Historic Agricultural Region MPDF for discussion of agricultural buildings related to livestock and crops for the broader northwestern Pennsylvania region.

A **farmstead** should include a house typical of the time and place or an older house showing appropriate modifications; a barn showing 20th century reorientation to dairying or modernizing types and materials; evidence of sheep culture (sheep barn, hay barn); evidence of mechanization (carriage house, machine shed); and at least one outbuilding from the period which shows intensified subsistence activity (spring house, summer kitchen, root cellar). A **farm** should have these features plus cropland, pasture land, or woodlot. A **historic agricultural district** should have a more or less contiguous collection of farms representing these features.

To be considered significant for the period 1930-1960, "Crisis and Decline: Land Use Shifts and Further Agricultural Adjustments,"

A **farmstead** need not have a house which dates precisely from this period, but should have a barn dating from the period, and evidence of agricultural shifts to dairying, such as a silo or milk house. It should also represent crop farming and subsistence activity. A **farm** should have cropland and woodlot; pasture is less important. Orchards are desirable but not required. A **historic agricultural district** should have a more or less contiguous collection of farms representing these features.

B. a range of buildings and landscape features that illustrate change over time in the region's agricultural history.

To be considered significant for representing the major agricultural changes in the Southwestern Pennsylvania Historic Agricultural Region from 1850-1965,

A **farmstead** should have architectural evidence of the major shifts over time. A 19th century house, late 19th or early 20th century sheep barn, and ground level stable barn, for instance, would effectively portray a shift from sheep to dairying. In all cases, however, diversification should also be represented in the form of outbuildings related to contributing enterprises – spring houses, corn cribs, granaries, root cellars, and the like. A **farm** should have cropland, pasture, and treelines or woodlots. Orchards are desirable but not required. A **historic agricultural district** should have a more or less contiguous collection of farms representing these features.

**For all other Criteria See Property Types and Registration Requirements in F. Property Types and Registration Requirements.**