Fences Organized the Rural Landscape

by Peter O. Wacker

DOI: 10.14713/njs.v11i2.396

Introduction by Robert W. Craig

Peter O. Wacker, born in 1940, was a New Jersey boy who attended Montclair State College, where he studied under geography professor Dan Jacobsen, who became influential in shaping Wacker's education and early career. He helped Wacker gain both acceptance to and a teaching assistant position at Louisiana State University, where he earned a PhD in geography. He was drawn there especially to study under pioneering cultural geographer Fred Kniffen, who focused extensive work on America's vernacular—or everyday—architecture. Wacker would come to apply the same focus to New Jersey's vernacular architecture from his position as a professor in Rutgers University's Geography Department, which he joined after graduate school. He remained at Rutgers for the rest of his career.

Kniffen's work is still highly regarded today, not only by cultural geographers but also by the subfield of architectural historians that has emerged to study vernacular architecture. It is a curiosity about this field that its practitioners have had to name the phenomena that they study, because the mostly unknown persons who built vernacular buildings or lived in them failed to give them generic names by which they could be distinguished. After Kniffen observed that a certain house form was prevalent through parts of Indiana, Illinois, and Iowa, he coined the name "I-house" to denote them, and it stuck. As Wacker soon found, New Jersey has many examples. Wacker, in his turn, coined the term "deep East Jersey cottage" to identify a major variant of what

yet another scholar had termed an "East Jersey cottage." Spreading Kniffen's ideas to New Jersey, Wacker made a series of traverses across the state in 1967 from east to west, roughly parallel about fifteen miles apart, to chart the distribution of its vernacular building types—something no one else had ever done, nor has done since. This has turned out to be of great importance, because with the vast amount of real estate development in New Jersey during the more than half-century that has intervened, the patterns that Wacker saw no longer present themselves with the same vividness. Younger students of New Jersey's historic architecture no longer have the chance to see the New Jersey historic landscape as revealingly as Wacker did. He went on to mine this data to support his subsequent writings.

Wacker first came to public attention with his 1968 book *The Musconetcong Valley of New Jersey, A Historical Geography*, based on his doctoral dissertation, to explain this narrow valley that had fascinated him since the fishing trips he had made there as a boy. In the 1990s he joined with Rutgers economic historian Paul G.E. Clemens to write *Land Use in Early New Jersey*. From 2004 through 2009 he co-edited with Maxine Lurie of Seton Hall University the interpretive atlas *Mapping New Jersey*. A theme runs through all of Wacker's books: his principal subject was New Jersey's people and the cultural geography they'd achieved at the historical moment before industrialization began and before the economic revolutions of the nineteenth century reshaped the state in every conceivable way.

This is most tellingly stated in the title of the book for which he is best remembered: his 1975 work *Land and People: A Cultural Geography of Pre-Industrial New Jersey*. It appeared during the remarkable flowering of new historical studies about colonial and Revolutionary-era New Jersey that the Bicentennial years produced. Wacker's book stood out from the others, which largely focused on New Jersey's political experiences seen from the top down. Instead, Wacker

looked at the generations of early New Jerseyans who settled the land, their numbers, their distribution over time and territory, and the cultural aspects that distinguished them from others, with whom they were often in conflict. These were very much ground-floor qualities far removed from loftier political events and concerns, but nonetheless central to New Jersey's persisting cultural character. His work became a counterpoint to the state's prevailing historiography.

Land and People made Wacker a natural choice to be appointed a member of the New Jersey State Review Board for Historic Sites. The Board had been in existence since 1970, after the passage of the National Historic Preservation Act in 1966, but by 1975 it was due for a major overhaul. New appointments were made to take effect at the start of 1976 that replaced about half of the Board's members. Wacker was one of the new appointees. The Board's principal job was to give a public vetting, based on outside expertise, to nominations of historic properties considered for listing in the New Jersey and National Registers of Historic Places. Listing in the Registers was of growing importance. It was not a mere pat on the back. Real consequences could and did flow from such listings, and it was important to be right on the facts and strong on the arguments, so that the general New Jersey public could be confident that the history was accurate and true and understand why specific properties and districts were declared "historic."

Wacker was a shrewd pick for the Board. He instinctively understood what "local significance" meant. By far and away, most of what the Board considered were properties of merely local significance, those of importance to one town, say, or part of a county, but which were unknown to those surrounding it and of little if any relevance to them, even if known. The National Register of Historic Places revolutionized historic preservation in America because it specifically gave legal recognition and protection to such places for the first time in federal law. Geography, however, by its nature, reveals regions of similarity that transcend local places, but it

also localizes by finding smaller regions and pinpoint locations called nodes, which possess distinctive cultural characteristics. Because geography, like history, is ever changing, when one can defend the importance of the cultural characteristics and identify the historical period of their importance (the "period of significance"), one may have the gist of an argument that could meet the National Register's broadly defined but demanding requirements. Wacker was a geographer who thought historically; I am a historian and architectural historian who thinks geographically. I was assigned as the staff member to serve the Review Board and had the pleasure of working with Wacker on it for almost thirty years. He chaired the Board for several years. We got along very well. When Wacker finally stepped down as a member in 2016, he had served it for forty consecutive years.

In Wacker's book *Land and People*, one passage has a single reference to a second volume that never appeared. It was his intent in that second volume to describe the built environment—the buildings and structures that people built upon the land—and the geographic contribution that they represented. He labored on that volume for the rest of his career, putting it aside when other projects had to take precedence, but coming back to it from time to time. He left a nearly complete manuscript at the time of his death, but he labored especially to complete his chapter on farmers' fences, a subject that has been ignored by almost every other New Jersey scholar. It was his hope that this chapter, at least, would see publication. "Pete" passed away in March 2020, from complications of a failing heart, at age eighty.—RWC.

Fences Organized the Rural Landscape

> The fence is a significant index of settlement stage and character, as well as often being a clue to the physical environment. Few landscape elements combine so finely the characteristics of the resource base, the cultural matrix and its historical antecedents.

Indeed, fences were the most ubiquitous built features on agricultural landscapes. The observation above appeared in a book by John Fraser Hart and Eugene Cotton Mather, geographers long concerned with studying America landscapes.[1] We can certainly place early New Jersey's fenced landscape in the contexts cited by Hart and Mather. Fencing was the largest investment in capital and time that a farmer would make. For example, Wilbur Zelinsky pointed out that by the 1870s "the farmers of America were confronting a genuine crisis in their efforts to build and maintain fences around their fields without sliding into bankruptcy."[2] Luckily, barbed wire came along! For New Jersey a century earlier, the cost of fencing can be determined from viewing the Revolutionary War Damage Claims.[3] These claims were officially registered with the state for damages suffered during the war. Fencing suffered greatly as food had to be cooked and in colder weather fires kept the troops warm. The easiest way to acquire nicely seasoned fire-ready wood was simply to take it from a local farmer's fence!

---

[1] John Fraser Hart and Eugene Cotton Mather, "The American Fence," *Landscape* 6 (Spring 1957), 4.

[2] Wilbur Zelinsky, "Walls and Fences," *Landscape* 8 (1959), 17.

[3] "Damages by the British in New Jersey, 1776-1781," 5 vols., and Damages by the Americans in New Jersey, 1776-1782, 1 vol., New Jersey State Archives (NJSA), Trenton, New Jersey (cited hereafter as *Damage Claims*). Richard Hunter (personal communication, March 12, 2012) has suggested that those seeking further information on fence damages during the Revolution look at "the claims and compensation for damages and loss of confiscated property made by Loyalists to the British Audit Office in the years following the Revolutionary War (on microfilm in the State Archives).

We can get a rough idea of relative values by the example of war damage claims registered by Ephraim Compton, who lived in Woodbridge Township, Middlesex County. He occupied (the tax lists listed occupants, who were not always the owners) sixty-one acres, not a large farm but rather typical for this New England-settled area.[4] During the war Compton lost both his typically small house and barn. His house was twenty by twenty-five feet and his barn was twenty-two by eighteen feet. The house he valued at £60 and the barn at £25. The fencing he lost was eight hundred and thirty-six panels of "worm" fence, of which eighty percent was "half worn." As we shall see later, in discussing the types of fencing, worm fencing was valued less than the typical post and rail fencing of the New England-settled areas. In any case, Compton valued the fencing he lost, perhaps not all the fencing of the farm, at £50. Thus we can see the relatively high cost of fencing one's property. As we shall see later, New Englanders preferred post-and-rail fencing but Compton's farm lay on Dunellen or Nixon soils—both sandy and not amenable to supporting a solid standing post.[5]

By the eighteenth century, in areas where livestock roamed free, there was a general understanding about fencing. We can learn this from instructions given by landlords to their tenants as to how farms should be organized on newly settled tracts.[6] Tenants were generally allowed much reduced rents for the improvements they made. Fencing was mentioned time and again. Earliest among the agreed improvements was the establishment of an orchard, generally of one or two hundred apple trees. These were to be planted near the dwelling, fenced to protect from livestock, and well maintained.

---

[4] *Damage Claims*, Middlesex County, Ephraim Compton, NJSA.

[5] John C.F. Tedrow, *Soils of New Jersey* (Malabar, FL: 1986), 199-201, 315-316.

6 See, for example, "Indentures in the Stevens Family Papers," Microfilm Edition, 1968. New Jersey Historical Society (NJHS), Newark, New Jersey.

Another of the earliest improvements was to create fenced meadowland. Meadows planted with "English grasses" (European perennials, as contrasted with the native American annuals) were to produce hay for winter use by livestock. Four or five fenced fields were also to be established, to permit a differentiation of crops, so that winter crops such as wheat or rye could grow in one of three or four fields and summer crops such as corn, buckwheat, and oats in one of three or four fields. In addition, each farm was to have a permanently wooded area for its own use. Only dead wood was to be used for firewood. Living trees were only to be cut for construction of buildings and, most importantly, for erecting fencing. Thus, wood lots were an important part of the agricultural landscape and the species composition of the wood lots was probably affected by such use. Sprout hardwoods such as chestnuts and oaks probably would be favored, and red cedar, significantly, as a pioneer species, would also increase in numbers. This is suggested by an advertisement of a farm located in Hunterdon County some twenty-two miles north of Trenton, which was "well cleared, and in good Fence, except about 40 or 50 Acres, reserved for Timber, among which is a large Quantity of Chestnut, justly esteemed the best Kind of Wood in that Part of the Country for Fencing…."[7]

Fencing in Western Europe

With the exception largely of the Finnish-settled parts of the Scandinavian Peninsula, and Finland itself, most Western Europeans lived in landscapes with little woodland. That meant a very different environment from eastern North America, where, in the earliest years of settlement, forest largely prevailed. North American forests were not only used for the lumber and other natural products that could be gathered, as, for example, chestnuts, but also to support livestock,

[7] *Docs. Rel. N.J.*, 1st ser., XII, 678-679.

especially hogs and cattle. In most of Western Europe, livestock were sequestered by being fenced *in* and not allowed to wander. The opposite was true in the early years of eastern North American where the livestock was fenced *out* of the relatively small cultivated areas.

We know relatively little of existing fencing in Western Europe at the time of the colonization of North America. In most places there was little of it.[8] Extensive fences were generally not needed. And in any case, wood for building fences was in short supply. Labor was plentiful. Sheep had their shepherds and cattle had their cowherds leading them to pasture. A systematic survey of landscape paintings dating from the seventeenth and eighteenth centuries might be valuable in "setting the stage" for the introduction of fences to America. For example, Gainsborough depicts post-and-rail fences on English landscapes painted in the 1740s and 1760s. A landscape painted in the 1720s or 1730s shows a very large meadow enclosed by a hedge.[9] For the Netherlands (especially in the vicinity of Amsterdam) Rembrandt offers some clues. From the 1630s to the 1660s he includes short lengths of post-and-rail fences.[10] The landscapes suggest that the numerous drainage ditches and canals also offered the opportunity to restrict the movements of livestock.

The major exception to the relatively sedentary lifestyle of rural Western Europeans was in Finland and the Finnish-settled portion of the Scandinavian Peninsula. There, slash-and-burn agriculture could be found, along with wandering livestock. Indeed, as eloquently pointed out by Jordan and Kaups in *The American Backwoods Frontier*, it was the Finns who were best equipped

[8] Zelinsky, 15.
[9] Michael Rosenthal, *The Art of Thomas Gainsborough* (New Haven, CT: …, 1999), 4, 188, 252. Richard Hunter reminded me about "the British enclosure movement and how in the 17th and 18th centuries, in particular, this transformed the landscape from open fields to hedged and fenced fields." He also queried me on hedged fields. My guess is that marauding hogs got the better of the hedges in New Jersey.
[10] Klaus Albrecht Schroder and Marian Bisanz-Prakken, *Rembrandt* (Vienna, Austria: 2004), 314, 336, 350.

culturally to cope with the new thickly forested American environment.[11] One of the Finnish material culture traits introduced was a unique zigzag form of fencing. In the seventeenth and early eighteenth centuries, because of its form, it was called the worm or snake fence. Today, this is often called the Virginia or Virginia rail fence, presumably because it came to dominate on the frontier there. However, the term Virginia fence is really a misnomer because the Finnish connection is more proper farther north. In the record, this type of fencing is first identified in Salem County, New Jersey, in 1685.[12]

Worm fences are those fences constructed by placing rails on top of each other meeting at an angle, thus creating a zigzag effect rather than a straight line.[13] Rails were ten to twelve feet long but because they met at an angle, each "panel" of the fence was shorter, perhaps seven to nine feet in length. Eight rails provided a fence about four feet high. As we shall see, such a height was generally agreed upon to be "legal." Worm fences were often strengthened by driving shorter timbers into the earth at intersecting panels of the fence. The fence was then said to be "staked." If an additional rail was placed in the top of the X intersection of the stakes it was called a "rider" and the fence was said to be "staked and ridered."

The worm fence was an ideal material culture trait in frontier conditions. It was erected relatively easily, was easily moved, and did not require gates, as the rails could be easily taken down and replaced. The main drawback for the worm fence was the fact that it did not continue in a straight line so that some land was lost to agricultural productivity. On the other hand, this space, overgrown, provided cover for small game.

---

[11] Terry G. Jordan and Matti Kaups, *The American Backwoods Frontier: An Ethnic and Ecological Interpretation* (Baltimore: 1989), 38-63.
[12] "Records of Salem, N.J. Monthly Meeting, Men's Minutes, 1676-1740," Historical Society of Pennsylvania, 4:55.
[13] Mamie Meredith, "The Nomenclature of American Pioneer Fences," *Southern Folklore Quarterly* 15 (1951), 111. Richard Hunter assumes that worm fencing would be also a good fit for rocky, hard-to-dig (for posts) soils and asks if "poorer quality" wood was used for such fencing. I have found no record of this but assume that this was the case.

Post-and-rail fences were generally four or five rails high (Fig. 2-1). In New Jersey the posts were generally of a more rot-resistant wood than were the rails. Records of such fences existing in the nineteenth century indicate posts were six or seven feet long and dug into the earth to a depth of two and a half feet.[14] They stood eleven feet apart. Holes were mortised into the posts to accept the rails, which were twelve feet long. In the eighteenth century, as with worm fences, each length would be called a "pannel." There were several advantages to such fencing, including the fact that it was a tight fence and didn't "waste" space due to zigzagging. It was, however, much more expensive and time-consuming to erect and obviously much less portable than worm fencing.

Through Charles Read's notes on farm structures and implements, which include an extensive statement on erecting post-and-rail fencing and constructing gates in the first two-thirds of the eighteenth century, Read was writing of his efforts on the fertile Inner Coastal Plain of Burlington County.[15] To Read, good fencing was absolutely key. "Never make an ordinary or makeshift fence this makes yr Cattle breachy [ie. they will become used to breaking through fencing] & takes near as much time as a good one." Read went on to say, "In fencing Posts & rails is to be preferred if the ground is good for posts to stand in, of wch Moist ground or Clay is the best & sand the worst of, unless you are to fence against Hoggs." I am not quite sure what to make of the statement. Perhaps the meaning is that since hogs couldn't jump, a lower fence would be good enough. Elsewhere he advocates that on "soft ground" a two-inch hole be bored near the bottom of the post and a horizontal "trunnel" two feet long run through the post. "Trunnel" was a carpentry term. What was meant here is that a buried two-foot-long horizontal extension from a

[14] Amos Long, Jr., "Fences in Rural Pennsylvania," *Pennsylvania Folklife* 12 (Summer 1961), 30-35.
[15] Carl R. Woodward, *Ploughs and Politicks: Charles Read of New Jersey and his Notes on Agriculture, 1715-1774* (New Brunswick, NJ: 1941), 369-376.

post would give it added stability on soft ground. Implied is that on sandy soil, as possibly in Ephraim Compton's case, a worm fence might be more appropriate.

Read indicated the average length of the pannels by saying that they "will run less than 7 to a chain or 4 rod." (this would be about nine and half feet to the panel). The rails should be about eleven feet long, three by five or six inches wide and overlap through the hole in the post. On "a Ditch or loose [sandy] Ground Putt yr broadest rails next ye bottom for tight fence [presumably this would especially deter hogs from getting in]…." He advocated that the fence be five rails high because "it prevents fretting [scraping of skin] on Sheep or small stock ranging about or being broke by larger Cattle by putting their heads thro' if fewer rails." On the other hand, if combined with a ditch, four or even three rails would be adequate. For the five-rail fence, "A Slab of Cedar makes a fine lower rail & tight fence. Splicing of rails [making a snug fit between the rails and the hole in the post] is the greatest art in fencing" and Read went on to give elaborate directions for this. The rails, from the top, should be seven or eight inches apart, then ten inches, eight inches, seven inches, then six inches. The rails should start from about seven or eight inches from the tops of the posts. Factoring in the width of the rails would give a fence four and a half or more feet high. This had more or less become the legal standard.

Read also had much to say about the posts. The lowest holes in the posts should be "at some Distance from the ground for there is but little distance on Each side ye Hole & it will soon Rott." Posts should be about seven to seven and a half feet long, with the ends sharpened, so that they may be driven further into the ground after digging. This, of course, would make more sense on the Inner Coastal Plain than for stony soils in northern New Jersey. Read went on to describe the cutting of the holes in the posts. He also rated various tree species available locally for fencing. Locust was first, mulberry second, "deepest red Cedar" third, white cedar fourth, and "barren oak"

fifth. Sassafras and chestnut did not make good posts but were fine for rails. Rails of small diameter, especially of cedar (probably white cedar), were "good for little."

Unlike worm fences, post-and-rail fences required gates and Read included elaborate directions on how to build them. They should be "closest at bottom as a Fence." Chestnut was the best wood to use. The gate posts should be three inches square and braced both vertically and transversely against the slats, which were to be three quarters of an inch wide. Iron rings were to connect the gate posts to the end posts of the post-and-rail fence and the gate should be fastened with an iron hook and eye.

Earliest Fencing in New Jersey

Fencing one's property grew out of the practice, begun in the first days of settlement, of allowing unsupervised livestock, other than sheep, to range at large and thus, for the farmer, to in effect benefit from uncleared land not in his possession. Indeed, in West Jersey, the *Concessions and Agreements* of 1676 stipulated that settlers were allowed to graze their cattle on any land not appropriated.[16] Advertisements of land for sale would often include the fact that there was an "outlet" to adjacent woodland, where stock could graze.[17] One fenced to protect one's crops from the free-ranging stock, not, at least initially, for the stock themselves. Each township had its own roster of "ear marks" that identified the owner of the animal. Notching ears was the practice generally used to identify ownership. Fencing and dealing with damages done by the free-ranging stock were issues from the beginning of settlement. Unfortunately, the forms of the fencing are

[16] Aaron Leaming and Jacob Spicer, *The Grants, Concessions and Original Constitutions of the Province of New Jersey* (Philadelphia: 1758), 39.
[17] Peter O. Wacker and Paul G.E. Clemens, *Land Use in Early New Jersey: A Historical Geography* (Newark, NJ: 1995), 66.

rarely indicated, and, other than for stone walls, fencing, although of prime importance, was a transitory feature on the landscape.

The best early and relatively systematic records in New Jersey were kept by the New England-settled "towns" (townships) in the northeast. For example, Newark, in Essex County, which began as a typical New England village settlement within a larger "town" (township) grant, officially began to deal with fencing in the first year (1667) after settlement.[18] Residents on "all Home Lotts lying in a Quarter together, shall bear equal Burden in fencing, both inside and outside Lotts, and Lines thereof, provided they be of like Quantity, and the whole Quarter have not universally and voluntarily agreed otherwise." What is being referred to here is that a "quarter" (neighborhood) of the relatively small home lots in the clustered village on the Passaic should all agree on fencing. No type of fencing was mentioned but there is a good possibility, as we shall see later, that it was the easily erected traditional English wattle fencing. This consisted of vertical rods or stakes placed in the earth and interwoven with twigs or branches of trees. Fines were stipulated for fencing that was insufficient and damages resulting from the incursions of livestock that "shall lye upon the defective Fence or Fences, unless the Cattle be Known or can be proved unruly, and then the Damage is [to] lye on the Cattle." Three common gates leading from the fenced area to the river were listed. This made worm fencing highly unlikely.

Shortly after requiring the home lots fenced, the town agreed on fencing a "pound." Just as today there is a pound for stray animals, there was then a pound for the at-large livestock found to have strayed. The Newark pound was "to be Made with Six good Rails, Six foot High, the Rails not above Ten Foot Long, and the upper Rails to be all Pin'd Together: and for the Bigness of it, it's to be four Lengths in a Side for Two Sides and Three Lengths and a Gateway Six foot Long,

[18] *Records of the Town of Newark, New Jersey, from its Settlement in 1666 to its Incorporation as a City in 1836* (Newark, NJ: 1966), passim.

for Each of the other Two Sides." The gates were to be "well Hanged with Iron Hooks and Hinges Below…." The description here, then, is for an enclosure of thirty-six by forty feet, gated on two shorter sides. Most likely is that the fencing described presumably would be much more secure and "tighter" than the fencing in common use. With the reference to gates, it is probable that the enclosure was of post-and-rail construction, but, frustratingly, no posts are mentioned!

Further descriptions in the existing records of the town meetings in Newark suggest that the maintenance of the common fence along the home lots kept the cattle within the "neck." This would have been the area of the town jutting out into the Passaic River. Today, this is the area referred to as the Ironbound section of Newark, but, to me, growing up in neighboring Irvington, and working in Newark as a teenager, this neighborhood was known as "Down Neck."

In 1669 the town paid for the hanging or fastening of "some Poles or Young Trees in the [Passaic] River, at the end of or adjoining to our common fence, and to turn them out and up the River about a Rod [16.5 feet] or two, and somewhat back again after the manner of a Pound, to prevent Hogs swiming round the fence into the Neck…." Presumably, this was to prevent the hogs from rooting, making holes, and destroying pasture and creating a hazard (the possibility of breaking a leg) for livestock. Here, again, this does not necessarily sound like post-and-rail fencing or joining to post-and-rail fencing. Another clue in regard to the early fencing in Newark was an agreement in 1672 "that every Man shall have at both Ends of his Fence one Stake, with the Two first Letters of his Name upon them…." If the earliest general fencing were post and rail, the letters presumably could have been placed on existing posts and additional stakes would not have been needed.

We learn that some residents did not cooperate to keep fences in repair in the home lots by records of the Town Meetings. For example, on April 19, 1682, the Newark meeting found that

"much Damage [had been] done by Reason of much defective Fences …" and ordered that Daniel Dod, one of the culprits, either maintain his portion of the fence or the Fence Viewers, appointed by the Town, would do so and charge him. Again, what constituted "fencing" was obviously understood by all, so there is no description. There is a description of a fence type in 1753, long after the first years of settlement. Here, the concern was for the "burying Yard [cemetery] fence" and this was to be "a Pail [palings, pickets] Fence." But, fencing a cemetery and fencing cropped land were very different matters!

In later years, when labor was available and also probably due to the cost of fencing due to deforestation, stone wall fencing came into vogue. This was, of course, also made possible by the abundant glacial debris in the Newark area, which was removed from the plowed fields. One family's records between 1753 and 1755 indicate paying for day labor for "works at Stone fence," "Sleding stones," and "picking Stones & Sleding…."[19]

There is an interesting record of early fencing in Elizabethtown. A special court was held there concerning damages to a fence built by Richard Mitchell, one of the French settlers brought over by Governor Philip Carteret. Carteret had given Mitchell town land without permission by the town. Eight men were indicted for "pulling down" his fence in June of 1670.[20] This must have been on his home lot, which was to have been planted with tobacco. The eight men were charged with conspiring "to overthrow, cut, breake, cast down or dig up a considerable quantity of fence…." No description of the fence was given but one of the defendants was said to have "heaved one logg off from the fence…." At least here it is clear that a log or logs were at least part of the fence. The reference to "dig up," though, implies some sort of stakes or posts set into the ground.

[19] Camp family record book, passim, NJHS.
[20] Docs. Rel. N.J., 1st ser., 1:82-87.

Another dispute concerning fencing in Elizabethtown two years later sheds more light, not only on fencing but also personal relationships! According to an eyewitness, two neighbors "plucked up the pallasades of the garden, and before I came, the hoggs, within an hours tyme had rooted up and Spoiled all that was in the garden, which was full of necessary garden herbs."[21]

The records of the New England-settled town of Woodbridge, bordering Elizabethtown to the south, also shed light on early fencing. In 1670 the town ordered the erection of fences around cultivated fields and a committee of four men was to inspect the fences. They would also decide whether damages were claimable for any destruction of crops by wandering hogs and cattle. If the fence was in good condition, the damages were claimable; if not, the claim didn't stand.[22] In 1675 they recognized that horses provided a special problem (probably because, unlike hogs and cattle, they could jump over a fence). The town voted "that all unruly Horses that keeps about the Towne, and Doth use to get into mens Land over tolerable fences, that By the owners be Cloged [having movement hampered] or fettered [chain attached to feet]."[23] As with all of these towns, there was a pound for animals that turned up far from their rightful owners. The Woodbridge pound was in such a dilapidated state by 1685 that it was to be replaced with a structure "made with good Square posts, and five good faire Rails & good Substantial Cooping, Rails well fixed to the heads of the posts." It is clear that this was a form of post-and-rail fencing and thought well-enough constructed to impound errant livestock.[24] Another interesting bit of information from Woodbridge concerning fencing concerns the fact that in 1724 the freeholders decided to set aside three acres for perpetual common use. It disappeared! Why? One bit of evidence concerns a dispute between two neighbors.

[21] Ibid., 85.
[22] Joseph W. Dally, *Woodbridge and Vicinity, The Story of a New Jersey Township* (New Brunswick, New Jersey: 1873), 44.
[23] Ibid., 53.
[24] Ibid., 105.

It seems that a man adjoining the common space simply moved his fence line onto the parcel. His neighbor had the fence repeatedly taken down at night. He was furious but she bragged "a pint of rum will do it."[25]

Another early settled New England town was Middletown in northern Monmouth County. In 1668 the record reads that fences "shall be four foot and 3 inches high…."[26] As mentioned earlier, this approximate height became a standard. The need to identify the free-ranging stock by ear marks was recorded at the end of the year. From May 1669 the record reads that there should be a continuation of the "fencing since the town was first in being," in "all quarters of the towne," and that each landholder be responsible for sixty rods [990 feet] in length. As in Newark, this would presumably enclose the home lots. In the next month, the decision was made to also have a general fence for the town's meadowland, which was to be built and maintained by Middletown's thirty-six landholders. In January 1674 the initial rule for fencing was amended to allow fencing to be only four feet high. Suggested here is that the cost of adding the extra six inches was a factor in the decision. At the same time, it was decided to impose a fine on anyone who, by not maintaining their portion of the fence, allowed damages to occur. One is reminded of Daniel Dod in Newark! Other entries make it obvious that unsupervised larger livestock were a problem, and that hogs were even worse! Unfortunately, there was no description of the fencing.

That traditional English wattle fencing was in use in some places comes from the minutes of the Town Meeting of Piscataway, in Middlesex County, just west of Woodbridge.[27] On March 2, 1690, the town voted to pay "edmon dounhan" [Edmund Dunham] ten shillings for "mending

[25] Ibid., 187.
[26] *The Town Book of Old Middletown…* (? : 1890?), passim.
[27] John E. Brush (transcriber), "The Piscataway Town Book: Minutes of Town Meetings and Records of Elections, 1683-1933," Sinclair Collection, Division of Special Collections and University Archives, Rutgers University Library, New Brunswick, NJ.

the buriall place and to set it up with good white oake and Chestnut stakes and bound it with good withes." Withes are good, flexible stems suitable for binding things together. This is, without question, a description of a wattle fence. Its use to bound off a graveyard would indicate that it was thought suitable fencing for sacred ground.

The early written record for non-New England-settled New Jersey is not nearly as extensive. However, we do have some very interesting references to fencing in Salem County. In 1675, the first Quaker settlers there introduced English privet and hawthorn hedges, "but from the carelessness of succeeding generations, they were permitted to be destroyed." For their burial ground, the Quakers erected a post-and-rail fence in 1685.[28] Most interesting is that in the minutes of the monthly meeting in the next year, there is specific reference to erecting a "new *worme* [italics mine] fence about the meeting house at Alloways Creeke."[29] As a previous researcher had misinterpreted the minutes of the Salem, New Jersey, Meeting to be Salem, Massachusetts, the first reference to what had been generally called the "Virginia Rail Fence," has been credited to Massachusetts. This incredibly important addition to the cultural landscape really deserves to be called either the "New Jersey Rail Fence," or more reasonably, as we shall see, the "New Sweden (or Finnish) Rail Fence."

It is interesting that Peter Kalm, the noted Swedish naturalist, was not initially familiar with this fence, in very wide use in southern New Jersey by mid-eighteenth century, so it must have not been used in the areas he was familiar with in Sweden and Finland. The Swedish fencing he was familiar with did not work for southern New Jersey as the posts used rotted relatively

[28] Robert G. Johnson, *An Historical Account of the First Settlement of Salem in West Jersey by John Fenwick, Esq., Chief Proprietor of the Same* (Philadelphia: 1839), 77-78.
[29] Records of Salem, N.J. Monthly Meeting," 4:55, HSP.

quickly there.[30] In Philadelphia, he does describe post-and-rail fencing constructed of long-lasting "red cedar" posts and white cedar rails, both, probably, from New Jersey's Outer Coastal Plain.[31]

Fencing and the Law

The importance of fencing is not only recorded in the records of the New England towns in New Jersey but also appears early in the provincial laws.[32] In East New Jersey, the General Assembly passed an act on fencing on April 6th, 1676. This law set the stage for general regulations attached to fencing and the raising of livestock. The act dealt with individually and commonly held fields "inclosed for Corn [grain], or other necessary use…." The person or people "interested in" the field were to "from time to time make up and keep up his Part of the Fence sufficiently strong and in constant repair, to secure the Corn and other fruits therein, the height of the Fence to be Four foot three Inches…." The term "interested" was used presumably because occupants may have been tenants rather than freeholders (owners). No cattle were permitted to enter the field "unless by some general express agreement of such as are interested." Those not abiding by the law were to appear before a court either in the town (township) or county. In each town one or two men were to be appointed to view the fences of the common fields and other fields and where there were deficiencies in the fence the person responsible had six days to make repairs or fines would be levied.

When a resident wanted to erect fencing and a neighbor also wanted to erect fencing, the two should bear equally the cost of the line fence between the two properties. If one did not put up appropriate fencing on a home lot, (the New England system of "town" settlement is obviously

[30] Adolph B. Benson (ed. & trans.), *Peter Kalm's Travels in North America: The English Version of 1770* (New York: 1937), 1:238.
[31] Ibid., 238-239.
[32] Leaming and Spicer, 391, 427, 455, 459.

referenced) one would not receive any compensation "except the Damage were done by prohibited or unruly Cattle of any sort, in which case Swine are included…." One can understand what is meant by "unruly" cattle, but what did an animal have to do to become "prohibited?"

Further, cattle were to be marked with the "Publick Mark" of the township where they originated and by a mark of the owner. "Whatsoever Swine or greater Cattle (Horses excepted) shall be found in the Woods, or Commons, unmarked," were to be placed in the township's pound and fines were to be exacted for their release to their owners. No owner was to let an unruly animal run at large. Such animals were to be fenced in or to have placed upon them "such Shackles and Fetters, or Yokes and Rings, as may sufficiently from Time to Time, restrain and prevent Trespasses…." These regulations largely set the stage for what followed in the eastern division of the colony.

In the western division, where settlement was a little later, regulations covering fencing were also a little later. It is also to be remembered that rather than the "town" and village settlement characterizing the first days in the eastern division, that settlement was largely on large individual holdings. In 1682 a law passed by the General Free Assembly read "And for the regulating of fences what is a lawful fence, Be it hereby enacted by authority aforesaid, that a lawful fence shall consist of and be a substantial fence, containing five feet in heighth…." A few months later, the height was reduced to four and a half feet. No reason was given and no fencing was described.

That fencing continued as a critical issue is indicated by a law passed in the united colony of New Jersey ca.1710.[33] The law gave a rationale for its appearance: "the want of making and keeping Fences in good Repair hath occasioned much Difference amongst Neighbours, and being Disadvantageous to the Inhabitants of this Province, by their Cattle Trespassing one upon the

[33] Bernard Bush (comp.), *Laws of the Royal Colony of New Jersey*, 1:82-83. This will be cited hereafter as *N.J. Laws*.

other." All fencing concerning cattle and horses were to be four feet four inches high. Horses and cattle jumping over or breaking a fence were to be "pounded" by the holder of the property and any damages paid by the owner of the animal(s). If the owner did not appear within a day the animal(s) were to be taken to the township pound and the pound keeper was to assess a charge of six pence per day for his trouble and costs. The pound keeper was to also post notices in nearby townships of the animals he held. After a month, he could claim the animal(s) for himself.

If fences were not built securely, or kept in proper repair, the "Person, Owner or Possessor" of the land was not able to claim for damages. The reason for this wording was that, as mentioned earlier, an occupant of a farm may not have been the actual owner but rather a tenant or even a squatter. The law further specified that when an adjoining property was developed the neighbors were to jointly build and maintain their line fence. But, there were no specifics and one can guess what might transpire when there was no agreement between neighbors.

Hogs at loose were a general problem. For example, as early as 1710 the legislation alluded to above specified that errant swine, if the owner were not known, were to be turned over to the Overseers of the Poor, who were to use them to benefit their charges. Reading between the lines her is that roaming hogs were "free game" for hungry neighbors!

Additional legislation was passed in 1714 "for preventing Differences and Trespasses among Neighbours…."[34] Fences "that are and shall be esteemed good and lawful, shall be Four Foot and Six Inches High, and close, strong and sufficient to prevent Horses and Neat Cattle great and small, going thorow or under such Fences." Also, when animal(s) created damage "two sufficient Men of the Neighbourhood" chosen by the owner of the stock were to make a judgement on whether the fencing of the aggrieved party was adequate.

[34] Ibid., 147-148.

The fact that additional legislation occurred in regard to fencing reveals just how important the matter was! In 1723 sheep were also listed as culprits.[35] Before this, there was apparently some disagreement as to whether they were "accounted Neat Cattle or not…." Henceforth damages by sheep were to be handled in the same way as with cattle and horses. This legislation also implies that sheep, at least in some cases, were not being very carefully tended!

Another bit of legislation that is revealing is that in 1730 if a landholder wished to give up his improvement "or leave the same common" he was to give his neighbor twelve months notice.[36] This is testimony to land abandonment at an early date. Fencing was expensive, and, obviously, some places were not productive enough to remain in fence.

It is also to be understood that, legally, "fences" did not only consist of constructed above-ground features. In 1779, for example, an act concerning the banking (diking) of land in Salem County made the drainage ditches, which were to be at least eight feet wide on the top and six feet wide on the bottom and three feet deep, legal fences.[37] Petitions had been filed with the legislature to allow drainage ditches to be "legal fences." Indeed, water boundaries saved a great deal in regard to the expense of fencing. For example, in 1726 a farm at Penn's Neck in Salem County was so located (on a neck of land) that "4 or 500 acres may be fenced with 20 or 30 Panels."[38] In practical terms that would mean a linear distance (depending on fence type) of about 160 to 300 feet, a very real saving in capital investment.

Legislation concerning fencing lasted well after the colonial period. An act in 1799 continued the specifics of 1730—post-and-rail fences and fences of "timber, boards, brick, or stone

[35] Ibid., 83.
[36] Ibid., 325-326.
[37] Public Laws of New Jersey, 1779, 3rd sitting of 4th Assembly, 29-31.
[38] *NJA*, 1st series, 40:117.

walls, shall be deemed lawful if four feet and two inches high."[39] All other fences were to be four and a half feet high. Ditches were continued as being legal fences and mention was made of brooks, rivers, ponds, creeks, and hedges "or other matter or thing equivalent to any such fence as aforesaid may be adjudged lawful fences at the discretion of those who were to be called to view the same." These were to be two "disinterested" members of the township committee.

We are fortunate in having a record from Morris County concerning the difficulties neighbors may have had with each other in regard to fencing for the same property. This record spans more than a decade in the latter part of the eighteenth century.[40] On April 2, Robert Morris wrote Benjamin Freeman Jr. that he had "pounded five of your sheep" for invading his meadow and informed him that he was choosing men to view the fence and appraise the damages and that Freeman had until the next morning to choose anyone to view on his own behalf. The fact that Morris put this in writing rather than just going next door certainly tells us that the relations between these next door neighbors were not "cordial." Freeman, apparently, ignored Morris and Morris followed up with another angry letter to Freeman and another two neighbors berating them for their "unneighborly Disregard to my repeated Notices," and informed them he had taken the sheep to the pound in Morristown, the county seat.[41]

Three years later there is another record of ongoing fence problems. Morris wrote to another neighbor, Major Doughty, asking him to let him reset his line fence. "Nor will you Suffer much by this as you will have the whole benefit of my fence which is new and good…." On the other hand, Doughty would "be obliged to reset your part of the line fence which has been quite unneighborly for two years past…." The problems with Freeman continued and, apparently, were

[39] Public Laws of New Jersey, 1799, 2nd sitting, 425-431.
[40] Robert Morris Papers, RUL.
[41] Morris was evidently doing what the law required aggrieved property owners to do.

at least partially brought on by the nature of the metes and bounds survey system, which had produced properties of very irregular shapes. Morris had offered to exchange land with Freeman to allow the fence line to be more advantageous to him, but Freeman continued to ignore him. According to Morris, because of the shape of his property, Freeman's cattle had the "benefit of it [ie grazing there] without his paying for it…."

Morris's problems with his neighbors and fencing continued. On March 2, 1796, Joseph Lewis, acting as an agent for Morris, who was apparently no longer in residence, informed him that his neighbor, now *General* Doughty, asked "to have the fence between you & him repaired as great part of it is intirely destroyed, & he adds that the road fence next to him must be made intirely new to prevent all the Hoggs of the Neighborhood from trespassing - the Surface of the meadows is much torn to pieces and Cattle are not wanting to trample it very much." (We should note here again that a highly irregular surface, such as is produced by rooting hogs, is very dangerous for the legs of both cattle and horses.) Also, apparently, a parcel of land, perhaps the same piece of property that had created problems between Morris and Freeman years before, had been rented to a Mr. Daniel Phenix, who had "relinquished the care of your Meadow…." This lack of care resulted in the deterioration of the fencing. "Most if not all of the rails about the barn & barrick [a small structure with an adjustable roof] & some that were loose along the Road & Genl. Doughty's line are missing, the bars are daily or nightly opened & no care that I can bestow will preserve it." He advised Morris to sell the meadow.

Robert Morris's problems with his neighbors over fencing may not have been typical but were probably replicated widely. There were recriminations but, apparently, generally, no violence. That fence matters could lead to violence is revealed in a news account from 1764.[42] On

[42] *NJA,* 1st series, 34:352.

April 23rd of that year a New York paper carried an account of a confrontation in Elizabethtown. A local Overseer of the Highways had set out to perform his legal duty by removing a fence that was an encroachment on the right-of-way. (It should be pointed out here that by encroaching on the right-of-way one increased the area available for cultivation of one's fenced-in stock to graze.) The landholder, hearing of the intention to reset the road fence, threatened to shoot the overseer. When the overseer, with a crew of laborers, "approach'd the fence, he said Sears [the farmer] with his gun, ask's where he [the overseer] was going with it… [and then] immediately fired at him, lodging the shot in his side and belly." The farmer was arrested but the overseer, Alderman Stites, was not expected to recover.

Distribution of Common Fence Types in New Jersey

The most systematic body of data that we have regarding fencing in the eighteenth century is contained in the surviving damage claims filed with the state for losses during the Revolution. The extent of these losses in many places was very great. For example, a letter writer in Raritan Landing, in Piscataway Township, Middlesex County, on May 24, 1777, told his brother, "You would hardly know the Landing. Not a panel of fence standing in a mile."[43] Between 1776 and 1782 there are 567 existing claims for loss of fencing inflicted by the British and American combatants (Table 1). A quick glance at the table makes it obvious that there were great regional differences in the types of fences used. The most "Dutch" area (Bergen County and most northern Essex) obviously preferred post-and-rail fences. There may have been several reasons for this, including the fact that such fencing took much less room away from agricultural land use than worm fencing did, and also an abundance of labor based on a slave system. The relatively small

[43] Quoted in C.C. Vermeule, "Raritan Landing That Was," *Proceedings of the New Jersey Historical Society*, 54 (1936), 105.

farms of the rest of Essex also relied largely on post-and-rail. Middlesex, largely New England-settled in those areas where fencing was lost, appears to have had almost as much worm fencing as post-and-rail. One could argue, however, that gathering wood for a fire was much easier from a worm fence than from post-and-rail fencing! Also, as mentioned above, some areas in Middlesex had sandy soils, and this could have militated against the use of post-and-rail. So, the data from Middlesex may reveal, in part, convenience for the wood thieves! The relatively high numbers of paling fence being destroyed in Middlesex reflects the total destruction there, with even kitchen gardens being affected by marauding troops.

Table 1: Wooden Fence Loss Claims, 1776-1782

County	N	Post-and-Rail	"Rail or Rails"	Worm	Pailing
Bergen + Dutch-settled Essex	105	103	1	0	1
Essex	61	48	11	0	2
Middlesex	269	146	33	62	28
Somerset	34	18	4	8	4
Morris	10	10	5	5	0
Hunterdon	8	5	2	1	0
Burlington	80	10	58	8	4
Totals	567	335	114	79	39

We do have a map of the distribution of paled gardens based on advertisements of real estate between 1747 and 1779 (map 2-1). The distribution clearly reflects the distribution of population, except for Bergen County. The Dutch there advertised less than did others but the damage claims also suggest little use of paling fences. When we look at the claims filed by people with known "Dutch" names (Table 2), the predilection for post-and-rail becomes even clearer and, again, the totals in Middlesex for worm fencing may have been inflated due to the ease of gathering the wood, and possibly, as may have been the case with Ephraim Compton, the presence of sandy soils.

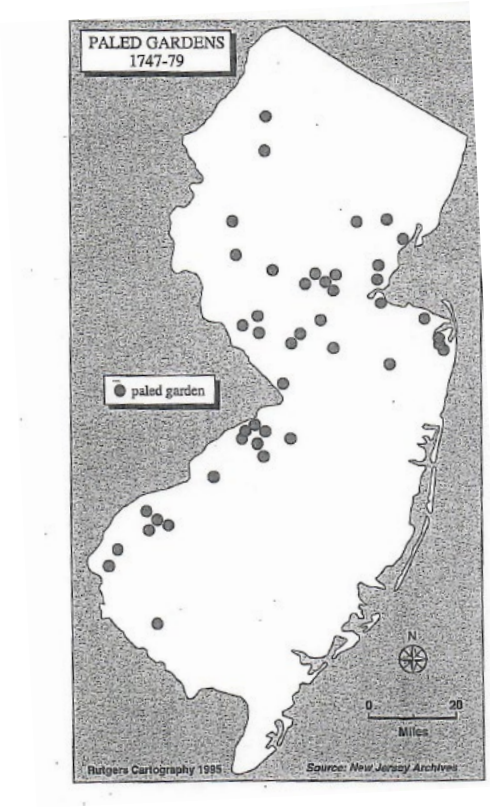

Table 2: Wooden Fence Loss Claims, "Dutch" Claimants, 1776-1782

County	N	Post-and-Rail	"Rail or Rails"	Worm	Pailing
Bergen and Dutch-settled Essex	99	97	1	0	1
Middlesex	46	27	1	11	7
Somerset	13	9	1	3	0
Totals	158	133	3	14	8

We don't have the heights of the worm fences in use but the numbers of rails in the post-and-rail fences are suggestive (Table 3). Four and five-rail heights predominated. In regard to the cost of fencing (Table 4), it is evident that for common agricultural fencing post-and-rail was valued higher than worm fencing. This would make sense from the standpoint of the cost of labor, with digging holes for post-and-rail requiring more time than the simple laying up of the worm railings. Also to be considered is the boring of holes in the posts to accommodate the rails. Palings were the most expensive. This makes sense as this was the fencing for the kitchen garden in the immediate vicinity of the house, where the most attention to attractive fencing would likely be focused.

Table 3: Heights of Post-and-Rail Fences

County	N	3-Rail	4-Rail	5-Rail
Bergen and Dutch-settled Essex	87	23	20	44
Essex	15	0	0	15
Middlesex	85	14	49	22
Somerset	22	4	6	12
Morris	1	0	0	1
Totals	210	41	75	94

Table 4: Fence Claims, Values in Pence per Panel, 1776-1782

Type	N (Pannels)	Range	Mean	Median
Pailing	455	17.7 - 94.5	37.4	38.7
Post-and-Rail (5)	10,990	9.0 - 36.0	19.6	18.0
Post-and-Rail (4)	10,129	8.2 - 30.0	16.1	14.4
Worm	5,784	6.7 - 24.0	14.0	12.0

The tree species used to produce fencing reflected, of course, what was locally available and what was perceived to be durable in the local environment (Table 5). For post-and-rail, especially, one would expect that rot-resistant species would predominate, and they did—cedar and chestnut. Unfortunately, "cedar" is not specific as to whether "red cedar" (actually Virginia juniper) or white cedar was meant. There was white cedar in the Hackensack Meadowlands but elsewhere red cedar, which is very rot-resistant, was probably the species used. And this is a very interesting circumstance, as the red cedar is generally a species that is a "pioneer" on formerly cleared land later abandoned and also along fence lines, due to the juniper berries being a favorite with birds. By the time of the Revolution, of course, there would have been plenty of time for red cedars to have established themselves along fence lines but, also, as mentioned earlier, there is evidence for abandonment of farmland. There is very interesting evidence, for at least the protection of red cedars, in the case of a newspaper advertisement of the farm and mansion of Rockingham, in Somerset County, at Rocky Hill, near Princeton.[44] This estate and mansion, of course, is well known for its association with George Washington. The farm consisted of about 320 acres, part of

[44] "Rockingham, National Register of Historic Places Nomination Form," May 2008, Section 8, 3-5. (This source will be cited hereafter "Nomination"), copy at New Jersey Historic Preservation Office, NJDEP, Trenton.

which rested on the volcanic and rocky landscape feature providing the descriptive place name. Among the valuable attributes of the farm, advertised from July 5 to August 27, 1783, was "several thousand very thrifty Red Cedar Trees, a great number of which have been trimmed and cultivated." Also mentioned in the advertisement is that the soil was good for wheat and grass and that there were numerous fruit trees. Implied here is that the rocky slope on which part of the farm lay had been cleared, very likely for its wood resources, and that not being able to be cultivated had allowed red cedars to grow. These trees were now to be valued and even "trimmed and cultivated." One did not have to extol the virtues of red cedars in the advertisement as everyone knew they were rot resistant. How widespread the "trimming" and "cultivation" of red cedars was, is not known, but this advertisement is a tempting hint.

Table 5: Fence Claims, Materials of Construction, 1776-1782 (C=Cedar; Ch=Chestnut; O=Oak)

County	N	Post-and-Rail			Rail or Rails			Worm		
		C	**CH**	**O**	**C**	**CH**	**O**	**C**	**CH**	**O**
Bergen and Dutch-Settled Essex	2	2	0	0	0	0	0	0	0	0
Essex	32	4	13	4	2	2	1	2	1	3
Middlesex	103	30	33	21	4	5	10	0	0	0
Burlington	87	5	0	1	49	2	19	5	0	6

Other Evidence for Fence Type Distributions

A very early record of fence building by and for an individual resides in the diary of Benjamin Clarke Sr. concerning his farm in Piscataway Township on the Raritan and west of what became Raritan Landing. He was developing his farm in the late 1680s. Clarke's hands devoted a

great deal of time to splitting rails and carting them to where they were needed.[45] There is also a single reference in the diary to the cutting of poles ("Pols") and it comes during the effort to split rails for the fencing. Several days after two of the men spent a day cutting poles, Clarke and his son and servants started putting up the fence. They had few acres under cultivation, and the fencing was probably used to protect the orchard and garden areas.

Peter Kalm, the well-known Swedish scientist who resided in southwestern New Jersey (at Raccoon, now Swedesboro) in the mid-eighteenth century, described the worm fence as being typical of southwestern New Jersey.[46] His drawing of the fence did not indicate stakes or riders. This fence type was obviously new to him. That is very interesting as the best evidence that the worm fence came to America from the Scandinavian Peninsula. But Kalm's familiarity, apparently, was with long-settled agricultural lands and not the shifting agriculture practiced by the Finns. In the second decade of the nineteenth century, another well-traveled Swede, Baron Axel Klinkowstrom, also commented on the worm fences he saw in Pennsylvania, Maryland, and New Jersey, indicating that he was totally unfamiliar with the type.[47]

Kalm, as did other Europeans, marveled at the amount of fencing needed to protect against the wandering livestock. In 1748 he commented on traveling in the vicinity of Raccoon:

[45] Robert W. Craig, "Benjamin Clarke, Sr. and His Diary of the Early Raritan Valley," *Princeton University Library Chronicle* 56 (2005), 426.
[46] Benson, 1:238.
[47] Axel Leonhard Klinkowstrom, *Baron Klinkowstrom's America, 1818-1820* (Evanston, IL: 1952), 19.

> When one is travelling on a public highway one never finds a gate or a cultivated field to pass through because the fields lie often on both sides of the road, with fences on both sides. If one wishes to visit a farm it may be that one has to cross a cultivated field right near the farmhouse; but then no gates are used but only an opening in the fence.[48]

Traveling the roads in Sweden one would find cultivated unfenced land on either side of the road. Lack of gates and getting to a farmhouse through an "opening" in the fence certainly suggests worm fencing and the removal of rails temporarily, to gain access.

There are scattered references to fences in other places. Jacob Janeway, living west of New Brunswick in 1747 had a garden with "prim [neat] hedge round and pal'd…." Numerous advertisements indicate that paling and hedging, or ditching and hedging in conjunction, were apparently popular options for the relatively small kitchen garden.[49] The Van Liews, certainly Dutch, located just to the west of New Brunswick in Somerset County, continued to use post-and-rail fencing in the 1780's and 1790's.[50] In 1780 two farms were offered for sale in the non-Dutch northern part of Somerset County.[51] One was tenanted. There, a description of the fencing, generally lacking in advertisements, is given. The farm was 163 acres, with more than one-third of the acreage wooded, fifteen acres in meadow and two large orchards. The arable land was divided into seven fields, which, on average, must have been at least ten acres each. The tenant was to enclose the entire farm with a "fence of eight rails high, with stakes and riders," and the

[48] Benson, 1:222.
[49] *NJA*, 1st series, 12:340, 19:208, 20:557.
[50] Van Liew Family Papers, NJ State Archives, Trenton.
[51] *NJA*, 2nd series, 4:528-529.

cleared fields were to be "under complete fence, chiefly new rails…." Presumably worm fencing was involved there, too.

Gary Wheeler Stone has studied the locale of the Revolution's Battle of Monmouth (central Monmouth County) in great detail. In his opinion, while the type of fencing in place during the battle is not mentioned, evidence points to it being largely worm fencing.[52] On the other hand, as part of a lease agreement among members of the Wikoff family (Dutch), in 1785, in Monmouth County, it was agreed "to put up two hundred pannells of good, New Five Rail post & Rail fence yearly."[53] Also, in 1812, an account book from Shrewsbury in northern Monmouth lists five-hole posts and accompanying rails.[54]

The northwestern part of New Jersey, settled relatively late, has few early records of fencing. Surviving leases from the area generally infer or stipulate worm fencing. For example, Jane Allen leased a large house and twenty acres near the recently erected courthouse in Newton, Sussex County, in 1773. She was to pay "for the Rails with which the said last mentioned Lott is now Inclosed."[55] Surely, this was a worm fence. An exception to the general use of worm fences was a lease between John Stevens and Benjamin Chamberlain requiring Chamberlain to fence in "with posts and Rails the five acres on the NW Side of the Kills [Paulinskill River]….[56] This probably was a valuable, well-watered and very productive meadow lot, worth providing especially good protection at-free livestock.

[52] Several informal conversations with Gary Wheeler Stone.
[53] "Agreement between Isaac Wikoff & Misses Anna, Margaret & Agnes Wikoff, March 5, 1785 " Monmouth County Historical Association (MCHA), Freehold, NJ.
[54] "The Estate of Joseph Holmes, Deceased," Cherry Hall Papers, MCHA.
[55] Indenture between Joseph Bartow and Jane Allen, June 22, 1773, Anderson Family Papers, NjHi.
[56] "Benj. Chamberlain's Indenture with John Stevens, September 28, 1770," Stevens Family Papers, NJHS.

James Parker of Perth Amboy moved to his large farm in rural Hunterdon County during the Revolutionary War and left an extensive record of life on his farm during the period.[57] For example, in late March 1780 he had one of his men "splitting rails." On April 3rd, "all hands splitting & carting Rails & Stakes to make fence round the meadow…." Such work continued off and on that month. On May 26th "all hands carting rails & stakes & putting fence of the corn field next the woods which we finished to the staking & ridering…." Parker often refers to his men splitting rails but never to them producing any posts.

Although staked and ridered worm fences predominated on Parker's farm, other forms of fences served specific functions. He mentions "palings" for his garden and selling thirty-two ten-foot-long chestnut laths in 1781 to a neighbor "for Palings." The year before he had "Jack carrying my Stones from the new orchard fence before the door of the stock yard in order to make up a stone fence around the yeard." Obviously, at least some of his stock were being fenced in. It is significant, I think, that Parker, an affluent and knowledgeable man, put the bulk of his labor force in rural Hunterdon into erecting worm fencing rather than post-and-rail. On the other hand, after returning to his home in Perth Amboy, the division fence between him and a neighbor, built in 1796, was a five-rail-high post-and-rail fence.[58]

A. Philip Muntz, in his extensive study of the utilization of forests in New Jersey, came to the conclusion that worm fencing was the enclosure of choice.[59] Other than for fuel and the making of charcoal for the ironworks of the glaciated Highlands, more wood was cut for worm fencing than for any other use. In this region, as in much of New Jersey, generally, red cedar and chestnut

[57] "James Parker Diary," James Parker Papers, NJHS.
[58] "Expense of the Division fence between Mr. Butler & the Lott on Back Street, Sept. 26, 1796," …. [finish note]
[59] A. Philip Muntz, "The Changing Geography of the New Jersey Woodlands, 1600-1900," Unpublished Ph.D. dissertation, 1959, Dept. of Geography, University of Wisconsin, 202-203.

were the trees of choice and much was cut, continuing into the first years of the twentieth century, and transported for use as fencing outside the region.

Hubert Schmidt, in dealing with agriculture in Hunterdon County, also concluded that worm fences were dominant well into the nineteenth century.[60] Some other types were also in use. In a few cases, presumably on newly cleared ground, farmers used stumps to support rails. Recent English immigrants, not familiar at first with local circumstances, attempted hawthorn hedges or used a combination of two-rail post-and-rail with hawthorn. These, however, provided no substantial barrier to the half-wild wandering cattle and hogs of the 1780s and early 1790s. So, as in Salem County about a century earlier, hawthorn passed out of use.

Julian Nimcewicz, an excellent observer, does mention hedges in the vicinity of New Brunswick in 1797.[61] "Hunting in America is very tiring because of the infinite number of hedges. All the properties, all the fields are protected by them as much to secure the ownership as to preserve them from damage by animals." He also noted that "all the pigs, sheep, what shall I say, even the geese carry on their necks long sticks tied in triangles which prevent them passing through the hedges."[62] I think what Niemcewicz was seeing was the disappearance of, especially, worm fencing with brush and then red cedar emerging along the old fence lines. Disappearance, by that time, of fencing to keep the larger stock out suggests a fundamental shift in the local agricultural economy. What was happening at the time, corroborated by other evidence, is the large increase in the feeding of fenced livestock to supply protein for urban markets, especially New York City.[63]

---

[60] Hubert G. Schmidt, *Rural Hunterdon, An Agricultural History* (New Brunswick, NJ: 1945), 96-97.
[61] Metchie J.E. Budka (trans. and ed.), *Under Their Vine and Fig Tree: Travels in America, 1797-1799, with some further account of life in New Jersey, by Julian Ursyn Niemcewicz* (Elizabeth, NJ: 1965), 11.
[62] Ibid.
[63] Wacker and Clemens, *Land Use in Early New Jersey*, 183.

Peter Kalm, in the same general area almost fifty years earlier, also noted geese wearing yokes of little sticks that prevented them from "creeping through half-broken fences."[64] He did not mention any hedges. In 1794, another good observer, Moreau de St. Mery, did not see any hedges in traveling through New Jersey on his way to New York. "We saw not a single growing hedge: everywhere our eyes met only those depressing fences."[65]

Conclusions

Without question, the most ubiquitous built feature on New Jersey's cultural landscape, for many years, was the fence. European visitors marveled at the amount of fencing there. They were coming from a largely deforested land, where livestock was more carefully regulated and where they were fenced *in* rather than *out*. In New Jersey, in the earliest years of European and African settlement, it made sense to make use of uncleared land to feed roving livestock and protect the relatively small areas of cleared cultivated land from them. How this was done and where this was done varied through time, cultural background, environment, and economy.

The earliest New England settlements in New Jersey were planned and reasonably nucleated with a common fence to protect subsistence (noncommercial) gardens and the like. This was dictated by vote in the town meetings. At first, it is likely that easily erected wattle fencing, traditional in England, was used. Records reveal, however, that even in these close-knit communities not everyone fully cooperated in this enterprise.

By the time of the Revolution some systematic data exists on the types of fencing in use: the Revolutionary War Damage Claims. New Englanders, at least in Essex County, clearly

[64] Benson, 1:123.
[65] Kenneth Roberts and Ana M. Roberts (trans. and eds.), *Moreau de St. Jery's American Journey, 1793-1798* (Garden City, NY: 1947), 120.

preferred a post-and-rail fence. This was also a traditional English type. We may speculate on why this fence type was used. First, it was a traditional type and far more lasting than wattle. Secondly, farms were relatively small in this area, irregular metes and bounds survey was the rule, and post-and-rail fences "wasted" little space. A third reason may very well have been that because population density was highest there, a ready labor supply encouraged such labor-intensive construction. Lastly, there is abundant evidence of general deforestation in the area. Less wood is used in the construction of post-and-rail fences than with the meandering worm fence, which also needed more rails as the rails were spaced much more closely than with a post-and-rail fence.

Even more concentrating on post-and-rail fencing were the predominantly Dutch-settled areas. For the Dutch, who also had a post-and-rail tradition at home, the "orderly" and "neat" appearance of post-and-rail may have also been influential. As we shall see, Dutch stone houses generally presented the best facade (ashlar [cut stone] construction) to the road, where passersby were expected to be impressed. Finally, there was the labor supply. Slavery was widespread among the Dutch, so an abundant labor supply may also have encouraged such fencing.

Outside the Dutch and New England spheres, worm fences predominated very early on. In many ways it was the ideal frontier fence type. It required no digging or boring of holes—simply the laying up of split rails. Also, worm fences could be easily moved. Not even a gate was needed. It did have two principal problems associated with it. First, due to its wandering nature, compounded by a metes and bounds survey system, tillable land was removed from farms. Where acreages were relatively small, as they were in the New England-settled areas, worm fences may not have made economic sense. Hart and Mather estimated that each mile of worm fence removed 1.2 acres from cultivation. The other very major problem with worm fencing is the amount of wood required for construction. Hart and Mather estimated that a typical Middle Western farm

(with right-angled field divisions) of one hundred and sixty acres, divided into just four fields, would need approximately four miles of fence, with several thousand rails used per mile.[66] And, again, in New Jersey there is the problem of the irregular metes and bounds survey system, which would add to the amount of wood needed.

In addition to cost of construction and portability, there were other factors that favored worm fences where timber was adequate. Sandy soils would not easily hold posts against "aggression" by livestock, for example. And there were anecdotal reasons. Amandus Johnson, the noted scholar of New Sweden (who preferred the term "Swede Fence"—Finnish scholars might want to challenge that) corresponded with Reverend William Cutter in regard to Cutter's boyhood memories of worm fencing in rural Illinois. According to Cutter, such fences were easy to climb over and comfortable to sit on.[67] The uncultivated angles were good places to hunt rabbits and quail. Cows and horses liked to scratch themselves on the projecting ends. In short, there was an affection for the worm fence.

The comments, first by Kalm at mid-century as to "half-broken" fences in the vicinity of New Brunswick and at the century's end by Niemcewicz as to disappearing property line fences, probably testify to a profound economic change in the region's agricultural economy. As the eighteenth century progressed in the Raritan Valley, the growing of wheat for export as flour gave way to the cultivation of maize to be fed to more carefully fenced *in* cattle to provide protein especially for the New York market. One did not have to guard crops quite so much against the no longer free-ranging cattle but simply make sure that hogs, geese, etc. could do little damage.[68]

---

[66] Hart and Mather, 6.
[67] Rev. William Cutter to Amandus Johnson, December 8, 1954, Amandus Johnson Papers, Balch Institute, Philadelphia.
[68] Wacker and Clemens, 203-230.

Indeed, in the 1790s, Moreau de St. Mery, on his way north of New Brunswick noted that "the few fences that one sees do not enclose farmland."[69] Of course, there was also the cost factor.

Another possibility, hinted at by the Dutch predilection for post-and-rail, is prestige. Kitchen gardens near the door had neat paling fences, and were even, on occasion, hedged. Paling fences were generally considered the most elegant and for special uses. For example, on February 11, 1685, John Reid petitioned the East Jersey Proprietors "for a piece of land 12 feet square" in which he "has buried a child" in Perth Amboy and was granted the right to "pole [pale] in twelve feet where desired."[70] Moreau de St. Mery on his way to New York in 1794 commented again on fencing: "In America almost everything is sacrificed to the outside view."[71] *Geltung* again! Hubert Schmidt, in commenting on the use of fencing in rural Hunterdon County in the nineteenth century, observed that "the rare farmer who cared for such things (less *geltung* there?) placed their sections of post-and-rail fence on well-traveled roads and their worm fencing elsewhere, out of sight."[72]

In the use of wood for fencing, it is not unusual that large amounts of chestnut and oak were used. Chestnut was abundant (until the blight after 1904), and, as a sprout hardwood, regenerated quickly. The many references to red cedar, another rod-resistant species, is most interesting and at first glance, somewhat surprising. Red cedar is generally thought of as a "pioneer" species, which enters cut over and abandoned land early (through its berries' popularity with birds) and then is shaded out by a higher developing woodland.[73] Wide use of red cedar implies much disturbance (perhaps by fire) and/or abandonment of farmland and perhaps, as we have seen in one recorded case, husbanding by farmers.

---

[69] Roberts and Roberts, 100.
[70] Maxine Lurie and Joanne Walroth (eds.), *The Minutes of the Board of Proprietors of the Eastern Division of New Jersey* (Perth Amboy, NJ: 1985), 117-118.
[71] Roberts and Roberts, 121.
[72] Schmidt, 96.
[73] Beryl Robichaud and Murray F. Buell, *Vegetation of New Jersey* (New Brunswick, NJ: 1973), 170.

Robert W. Craig is a historian of the American built environment. For twenty-five years he was the statewide coordinator of the New Jersey and National Registers of Historic Places program in the Historic Preservation Office at the New Jersey Department of Environmental Protection. In 2014 he edited the book Down Jersey, from Bayshore to Seashore. He has been a long-time member of the Princeton Research Forum, an organization of independent scholars. He has been honored for his work with the Paul E. Buchanan Award from the Vernacular Architecture Forum, and by Preservation New Jersey with the Constance Greiff Writing Award. He has recently started the consulting firm Advanced Old Building Research LLC, and its website, advancedoldbuildingresearch.com.