Barns arguably are the buildings most symbolic of the United States. When paired with skyscrapers, their only serious rival for the honor, the two represent opposing faces of the nation. Skyscrapers, of course, stand for technological and commercial might in the twentieth century. Barns, in contrast, draw us to the past. They are icons for rural life and for everything positive that we have come to associate with that existence: community spirit, hard work, closeness to nature. The big barns with which we are most familiar have been important in this country for about two hundred years now and have symbolized American agriculture throughout that period. Over the past few decades, however, they have...
Barns, such as this impressive structure on the J. F. Terrass farm south of Alma in Wabaunsee County, have become icons for rural life and symbols of American agriculture.
acquired additional layers of meaning. No one previously had produced countless calendars or glossy picture books about barns; no one had employed them regularly as advertising backdrops to sell beer or automobiles. Now, just as they are disappearing from the actual landscape, these barns are more visible than ever in our mass media.

Nostalgia, of course, is the explanation for the recent wave of barn enthusiasm. It is romanticization of a time and a way of life that fewer and fewer of us remember firsthand. The process has become so enveloping, in fact, that it is now hard to admit that we actually know very little about barns themselves. Their origins are obscure, their varieties uncertain (although a few scholars have now pieced together the basic outlines). More important, we also have largely forgotten how our grandparents and great-grandparents constructed these buildings, arranged them internally, and used them as a basic functional unit of their economy.

The 1999 tour through Kansas of Barn Again!, a traveling exhibition sponsored by the Smithsonian Institution, is an appropriate time for a reconsideration of the barn. The exhibition’s subtitle, Celebrating an American Icon, refers to the broad sweep of associations that we now make with these structures. In this article, however, I will focus more directly on the barn itself. The aim is mostly contextual, to relate a general history of the barn in the United States, to explore the types that came to Kansas, and to discuss the evolution of the structure that took place after the state was settled. Through this process I hope to provide readers with a guide for their personal explorations of these ubiquitous but underappreciated elements of the local landscape. Perhaps, too, my words will encourage people to document the history of the barns in their families or neighborhoods and to create ways to preserve and/or find alternate uses for at least some of these austere but noble buildings.

Despite their recent romanticization, barns are eminently practical structures. They are work places, farm factories if you will, and they are constructed with efficiency of movement and other cost considerations very much in mind. Popular writings on the subject downplay these economic aspects and, instead, make much of ethnic associations. They speak especially of Dutch, English, and German barns. Although it is true that Europeans brought important building ideas to this country, it would be a gross error to label any more than perhaps a few dozen existing Kansas barns as truly ethnic. Farming conditions in the nineteenth- and early twentieth-century Midwest were vastly different from those in eighteenth- or early nineteenth-century Europe. These circumstances drove a host of adaptations, logically enough, including a series of original and totally American concepts for barn design. Variations existed, of course, but these tended to reflect differences in agricultural systems and not ethnic cultures. Much of the look of midwestern barns, for example, can be directly attributed to the inventions of specific local people. (The significance of a hay carrier developed by Iowan William Louden and a truss system by Ohioan John Shawver, for example, are developed later in this article.) The ideas of Louden, Shawver, and others were touted extensively in the agricultural magazines and experiment station bulletins of the time. In Kansas they were adopted as eagerly by Swedish Americans in Scandia and by Russian Mennonites in the Newton area as they were by older-stock Americans elsewhere in the state.

**Traditional Barn Types**

When Americans at the turn of the last century envisioned a barn, they thought immediately of a building that served multiple purposes. A barn was a place where a person stabled horses, fed calves, and milked cows. A barn also contained a threshing floor, one or more granaries, a harness room, and perhaps a silo, a workshop, and a root bin. The largest single area, of course, usually was reserved for hay. Functional in-
terconnections in this type of barn between any one section and another are so obvious that it is difficult to imagine the various farm activities organized in any other fashion. Yet they once were. Before approximately 1800, in fact, a barn was quite a different type of building. A clue to its original function comes from its etymological kinship with the word barley. In England of that time, as well as in the American colonies, a barn was associated exclusively with grain farming. Animals belonged elsewhere. They either foraged for themselves out in the weather or each species was housed in its own specialized structure: stables for horses, sties for hogs, and byres or shippons for cattle.¹

A typical barn from this time was a simple rectangular building: gable-roofed, all on one level, and perhaps forty to sixty feet long. The structure could be as tall as a two-story house but was always divided on its long axis into three equal-sized sections (or bays). Large double doors on opposing walls opened into the middle section. Here wagons would enter, bringing sheaves of ripened grain. Workers would stack these sheaves in one of the side bays where they would dry and await threshing. Threshing itself took place in the middle bay. People used hand flails to separate grain from chaff and opened the opposing doors there to create a cross breeze. When the chaff and the grain were tossed together into the air, this air current would blow the lighter chaff away. After separation, the cleaned grain would be stored in bins in the third bay of the barn. The farmer also would keep at least some of the grain straw in the side bays, primarily for use as animal bedding.²

Three-bay threshing barns usually are called English barns in popular American writing. This is an accurate name in a sense, but similar designs were common elsewhere in Europe as well, and the structure likely had multiple introductions into this country. A German version called the Grundscheier (ground-level barn) was regularly built in early Pennsylvania, for

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example, and Pomeranian settlers in Wisconsin constructed another they called the Scheune.  

As time went on and farmers began to acquire more money and land, the issue of the size and number of outbuildings became an important topic of discussion in the farm newspapers and magazines that had begun to circulate widely after approximately 1850. Two schools of thought emerged that one writer later called the concentrated plan and the distributive plan. The latter was the traditional solution of erecting a series of small, separate buildings. Cornell professor Isaac P. Roberts (who clearly favored the other system) looked back on the process:

First came the rude house and the log stable. The stable was followed by the modest barn,

usually of the regulation size, 30 by 40 feet, with 12-, 14-, or, in rare cases, 16-foot posts. As the arable land increased another barn was built, then a shed, then a wagon-house; followed by a corncrib, a chicken-house, a pig- pen, and later a sheep- barn, cow-barn, all the room in the first and second barns being by this time required for grain. . . . The buildings were erected without any comprehensive plan as to the farmstead as a whole. This necessitated many fences, gates, yards, and a maze of muddy byways in which the dock and other weeds, discarded implements, and the flotsam and jetsam of the farm found opportunity to grow or to rot. . . . Not infrequently, twelve to fifteen separate structures may be seen on a farm of eighty acres.

The second, or concentrated, option for a growing farm meant having a large, multiple-purpose barn. This alternative was feared by some people because of its unfamiliarity and by others because of the catastrophe a single fire there could cause. Still, the efficiencies of a big barn gradually made it the norm. The process began modestly. As animal quality improved, for example, it seemed logical to some farmers to convert one of the side bays in their old threshing barns

5. Ibid., 251–52; see also John B. Jackson, American Space: The Centennial Years, 1865–1876 (New York: W.W. Norton, 1972), 23–24.
into stables. Then, with the animals inside, a need for accessible hay storage became apparent, so plans were made to add lofts over one or both of the side bays. Another factor driving barn modification was increasing farm size. If a family expanded its operation from forty to eighty acres, for example, it often would also consider expanding the main barn. Adding a fourth and even a fifth bay was possible, as was the less expensive alternative of a shed addition to one or both of the gable ends.

By the time of the Civil War progressive farmers in the fertile lake plains of western New York, in Ohio, and in other northern locations realized that even an expanded version of the three-bay threshing barn would be inadequate for their needs. Most people fell back on the old solution of constructing auxiliary, specialized buildings. But one New York man offered a more radical alternative. Writing in 1866 in the *American Agriculturalist*, he reported that he had modernized his barn by literally raising it up, constructing a stone stables area underneath, and adding an outside ramp so as to maintain access to the old threshing doors.

The new design, quickly dubbed a raised or basement barn in the periodicals of the time, sparked considerable debate. The increased room was appreciated by all as was the easy gravity transfer of hay and grain from the storage level down to the animals. Proponents also touted the winter warmth of a protected stable, especially if the barn were constructed on the side of a hill with the doors opening to a sunny southern exposure. Opponents saw the stable location in different terms. The basement level, they argued, inevitably would be dark and unhealthy. Gases from the manure would rise and “spoil all the hay and grain in the barn.” Time revealed that the negative views were overstated. In fact, the new raised barn grew rapidly in popularity and became the most common one built for the remainder of the nineteenth century in the developing dairy belt of Michigan, Wisconsin, and Minnesota.

The source of the inspiration behind the first raised barn in upstate New York is uncertain. Perhaps it was the product of individual genius, but it seems more likely that the farmers there had heard of successful basement barns elsewhere in the country. The biggest concentration was in southeastern Pennsylvania, where German and German Swiss settlers had been constructing their versions of this idea since the 1730s. That their barns had been noticed elsewhere (at least after the American Revolution) is clear from many sources including a popular 1852 handbook on rural architecture. There Lewis Allen wrote that the Pennsylvania barns were the “most thorough” to be found in the country, having “a substance and durability in them that is exceedingly satisfactory.” Moreover, one of the two detailed barn models that he suggested for general use was based “partially on the Pennsylvania plan.”

The Pennsylvania barn as it had evolved by the 1850s was a massive structure. It often measured as much as fifty to sixty feet in width and eighty to one hundred feet in length. It stood perhaps fifty feet tall. People knew the barn by several names. Some called it a Swisser, an accurate tribute to its origins in the Alpine valleys of Canton Graubunden. Others termed it a German barn, also historically accurate in a more general sense. Germans, especially southern Germans, had greater need to develop large barns

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than did Englishmen. Winters were more severe on the continent, and partly as a result German agriculture was a grain-livestock amalgam that relied on the stabling of animals and the spreading of accumulated manure on the grain fields.\(^\text{10}\)

Two other common labels for the big Pennsylvania structures were (and are) basement barn and bank barn, the latter a reference to the almost universal practice of construction on a hillside so as to have ground-level entry for both floors. Perhaps the most common name for this building, however, was a forebay barn. This is a reference to its most distinguishing feature—a cantilevered extension of the entire second floor some four to six feet over the entrance to the stables. This extension also has been called an overshot or, in German, a _Vorbaus_ or a _Vorschuss_. Except for their forebays, the Pennsylvania barns looked and functioned much like their kindred three-bay raised models to the north. Pennsylvanians often constructed their walls of stone or brick, but both barns had simple gable roofs, eave-side entries, and comparable internal divisions. The forebay sections themselves typically contained granaries, while the overhang provided protection for the stables below. Its projection kept snow away from the doors and gates and made it easy to throw hay into the barnyard.

Swisser barns were too expensive for frontiersmen to erect, but they proved popular for people of varied ethnicities in settled, fertile sites. Their realm extends from the hearth region in southeastern Pennsylvania southward through the Maryland Piedmont and into most of Virginia’s Shenandoah Valley. Diffusion farther to the southeast was inhibited by a lesser need for large barns in the mild climates of that area and in the small valley farms established throughout the Appalachian Plateau. The barn reappears in the Midwest, however. German colonists, especially conservative ones of the Amish, Mennonite, and Brethren faiths, brought the full-forebay model with them to Ohio, Indiana, Illinois, and beyond.\(^\text{11}\) Other Pennsylvania emigrants were not so true to the original form. They built a similar barn, but often without the forebay, across virtually all of the emerging corn belt. The mixing of people and ideas in this region makes it impossible to determine which midwestern structures were inspired by the model of the New York raised barn and which from the older Pennsylvania version. The important point is that a large, two-level barn worked as well on the cattle-feeding operations of central Illinois as it did on the dairies of southern Michigan.

Impressive and efficient as they were, two-level buildings were not the only barns popular in the eastern United States on the eve of Kansas settlement. Big basement barns required prosperous, commercial farm operations. They made no financial sense on the frontier, in hilly terrain, or anyplace else where people practiced a semisubsistence, mixed-farming system. The design that became dominant under these latter circumstances has no commonly accepted name. Academicians, however, know it as a transverse-crib barn.

As its name suggests, the history of the transverse-crib barn begins with a simple log crib, that is, a rectangular pen constructed of notched timbers. Such structures were interlocking and thus strong and easily constructed with only an ax for a tool. Without further modification they could provide good storage for corn (we still speak of corn “cribs”); with gates and other alterations, they could be used as animal stalls and for other purposes. Cribs also could easily be built adjacent to or near one another and then joined by a common roof to constitute a substantial barn. Various crib and roof arrangements are possible, but the most popular geometry had two rows of four to ten cribs (most typically six) flanking

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11. Ibid., 147–80.
a central runway. Hay lofts were built above the cribs, and everything then joined together by a simple gable roof positioned with its ridge line parallel to the runway. This roof orientation (transverse to the individual cribs) maximized the vertical space over the runway and thereby made it easier to unload loose hay from wagons into the lofts.¹²

Recent research suggests that the roots of the transverse-crib design are in the same Pennsylvania soil that produced the forebay barn, but the crib barn achieved full development in the Appalachian valleys of eastern Tennessee about 1790. From there it expanded throughout the Upland South and beyond. Versatility was key to its success, including ease of expansion. Either extra cribs could be added or, more commonly, sheds built along one or both sides. The design also could be executed with sawn lumber or stone as easily as with logs, making it suitable for construction in grassland areas such as Kansas.¹³ This crib barn looked completely different from the comparable outbuildings found in the northern states. It was smaller and lacked a basement level. It also had its principal doors on the gable ends instead of the eave sides.


Ensminger’s speculation has been borne out in Doniphan County by the only systematic barn survey ever done in Kansas. There, among the sixteen bank barns studied and successfully nominated for the National Register of Historic Places, are three with forebays.

The oldest two of the Pennsylvania barns in Doniphan County, the Mission/Herring barn of 1860 and the John Hale barn of about 1881, possess all the classic features (Figs. 1, 2). They have gable roofs; ramps leading up to central, eave-side doors; south-facing stables; and solid, post-and-beam framing timbers. The stable walls are stone, while the upper level is clad with vertical boards. Both barns are fairly large for their time as well, the Mission/Herring one measuring forty-four-by-thirty-six feet and the Hale barn forty-eight-by-thirty-two feet. Each forebay is slightly different, however. The six-foot deep one on the Mission/Herring barn is unsupported across its entire length except for four small posts that probably were later additions. This pure cantilever design reflects back to the log origins of this barn type. It also gives the barn an asymmetrical profile on its sides.


**Fig. 5: The Abraham Eitzen family near Hillsboro in Marion County decided to retain its original three-bay threshing barn instead of replacing it with a larger structure. The family added storage and stables space as needed with a series of smaller buildings. The photograph was taken in 1904.**
Do forebay barns exist in Kansas outside of Doniphan County? Although I have no concrete evidence on the subject, I am confident the answer is yes. Given that natives of Pennsylvania, Ohio, and the other core states for this barn type were the most important suppliers of immigrants to Kansas, it would be most unlikely if none of them brought along their familiar conception of how a barn should look. People from these states went west to every Kansas county in sizable numbers, but one of the best places to seek forebay barns would be in the extreme northeastern section of the state. People settled there relatively early and therefore would have had more time than others to acquire the money for a large barn by the 1870s, the decade when newer barn designs began to be promoted heavily in agricultural periodicals.16

Dickinson County would be a second good hunting ground for forebay barns. Agents of the Kansas Pacific Railroad specifically targeted ethnic Germans from southeastern Pennsylvania as buyers for the portion of their land grant that extended from the

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15. For details on the Mission–Herring, Hale, and Stein barns, see “Nomination Forms,” National Register files, Cultural Resources Division, Kansas State Historical Society.
Abilene area westward through parts of Ellsworth, Lincoln, Ottawa, Russell, and Saline Counties. These officials were successful in attracting some fifteen to twenty thousand immigrants. Smaller contingents of German Americans from this Pennsylvania heartland of forebay barns came to areas around Hesston (Harvey County), Norwich (Kingman County), Osborne (Osborne County), Peabody (Marion County), and Yoder (Reno County). Sections of Kansas known for their emigrants directly from Germany would be less likely places to search for Pennsylvania barns. Although the design’s roots are in Europe, its full form developed in this country.  

The relative importance of this group fell off somewhat in sections of Kansas occupied after the Civil War because such areas attracted people from a much wider range of sources than in the 1850s. Still, upper southerners remained important contributors, especially near the border with Indian Territory. They made up more than 30 percent of the immigrants across the entire southern tier of counties and extended this presence northward into Elk County in the Chautauqua Hills, Butler County in the Flint Hills, and all of southwestern Kansas as far north as Greeley and Scott Counties.

The transverse-crib barn is a versatile structure, but it originated to fill the needs of a small-scale, semisubsistence economy. Conditions conducive to this lifestyle in Kansas, both physically and within the area of important southern settlement, are best met in the relatively infertile, sandstone soils of the Chautauqua Hills. Crib barns, therefore, should reach their highest relative frequencies in the “Kansas Ozarks” of Chautauqua, Elk, and the western sections of Montgomery, Wilson, and Woodson Counties. Portions of Atchison, Doniphan, Jefferson, and Leavenworth Counties, where tributaries of the nearby Kansas and Missouri Rivers have eroded deeply into the upland surface, also are likely locales for these barns.

The only documentation available to test the hypothesized linkage between crib barns and southerners in Kansas is an interesting set of pen-and-ink drawings of barns and mines in Crawford County by Abraham Walkowitz. Walkowitz was a New York artist who spent the summer of 1945 near Girard as a guest of publisher Emanuel Haldeman-Julius. His sketches are small and unlabeled, and he deliberately ignored the newer barns in the area, preferring instead what Haldeman-Julius called “old, rheumatic, leaning cripples.” Taking these things into account,
Walkowitz’s sketches still may be representative of the older, pre-1900 local barn landscape. At any rate, the location of the main doorway is unclear on thirty-four of the barn sketches. Of the others, twenty-three have their major openings on the gable end and only three have central, eave-side entries. The ratio of gable to eave openings is thus overwhelming, at nearly eight to one. Even if not all of these gable-opening barns have crib origins, the numbers are still strongly supportive of the general cultural thesis. Nearly all of the gable-opening structures also had one or more sheds attached.

Moving from transverse-crib buildings to the modified versions of the old three-bay threshing barns that diffused from New England into Kansas and the rest of the Midwest, it is more difficult to predict a distribution pattern. To some extent it should be opposite that of the crib barn. But since the three-bay plan produces a small barn, many of them were destroyed to make way for bigger designs once farmers began to achieve initial prosperity. It was probably old threshing barns, in fact, that J. D. Walters of the Kansas State Agricultural College had in mind when he lambasted traditional rural architecture as a preamble to the promotion of his own ideas. In 1891, according to Professor Walters, “the average farm barn of the West is the same rough-built, cheerless and inconvenient shed which it was in the days of flails and scythes, back in the woods of New England or Ohio.”

Three-bay barns are dominant in the sketches of farmsteads made for the earliest plat atlases of Kansas counties, those done before about 1880. They survived mostly on smaller farms during the wave of big-barn construction that came to eastern and central Kansas during the prosperous 1880s and to other places where stubborn individuals elected to stay with the tried-and-true building system of a series of smaller, specialized structures around an original three-bay barn (Figs. 4, 5). A Mr. Wheeler of Atchison County sided with this philosophy in a rejoinder to Professor Walters. A system of multiple barns was less expensive to erect, he said, and it lowered the danger of a major fire.

He also pointed out the difficulty of finding suitable terrain for a bank barn in parts of Kansas, as well as adequate building stone for the basement level.

The last of the four traditional eastern barns to reach nineteenth-century Kansas, the raised three-bay barn, became the one most favored by experts of the time. Professor Walters, for example, called its advantages “manifold and manifest,” especially if a hillside site were available. He recommended a gentle southeastern slope and argued that the barn would work better in Kansas than it had in states farther east. Problems reported with dampness and disease in the stable level should not be a local worry. Because of the state’s “dry climate,” he concluded, a basement design “is preferable to any other.”

As big and expensive structures designed for mixed farming (Professor Walters recommended a plan thirty-eight-by-seventy-two feet for an 80-acre farm and a forty-four-by-eighty-eight feet plan for a 160-acre farm), basement barns logically would have been built in greatest numbers where a prosperous, corn-belt economy was possible. In Kansas this meant counties east of the Flint Hills and those along the northern border of the state west to the vicinity of Smith Center (Figs. 6, 7). The extremely rich farmland found southward from Abilene and Salina to Hutchinson and Newton also would be a good place to expect raised barns, although it is too flat there to erect many of the bank variety.

22. Ibid., 61.
23. Ibid., 57.
24. Ibid.
Understanding barns in early Kansas is more complicated than just tracing the paths of the four eastern designs into the state. Terrain and the availability of building stone imposed limitations on the distribution of bank barns, and similar forces affected other decisions as well. Most choices had to do with simple issues of isolation and cost. In eastern Kansas lumber was available from local sources almost from the outset. Allen County had seven sawmills in 1860, for example, Jefferson County eight, and Doniphan County twelve. Even Wabaunsee County in the Flint Hills had six, courtesy of its Kaw valley lowland. Such abundance did not hold farther west. Railroads could bring in supplies, of course, but these were expensive, especially if one’s farm was a distance from the tracks.

Solid information on the finances of early Kansans is unavailable, but it is fair to say that money was scarce for the majority of farm families. These people often possessed basic carpentry and masonry skills, however, and cast about their new local environment for possible inexpensive building materials. Sod barns were built by the hundreds or perhaps even thousands. They did not get the attention accorded to houses constructed of the same material, however, and so are not part of our standard western lore. Actually, a given sod building often would serve first a human clientele and then, after a few years, as a home for horses and milk cows. No remaining sod barns have been located in the state, but one example of a variation on the sod theme does exit. This is an adobe structure erected in 1876 by Peter and Anna Loewen, newly arrived Mennonite settlers in Marion County. As on other farmsteads in the area, the Loewen barn was attached to the family house and had a simple rectangular plan. It was forty feet long, thirty feet wide, and divided internally into the familiar three sections. The Loewens replaced this barn later in the century with a detached structure, but the original was reconstructed shortly after the house was moved to Hillsboro in 1958. The combined building now serves as a local museum.

Stone as a building material has a much more enduring legacy than either sod or adobe. It came into wide use in two of the state’s most distinctive upland areas: the Flint Hills and the post rock country (or Blue Hills) that extends along a northeast-to-southwest diagonal from Republic through Hodgeman Counties. In contrast, little stone construction exists on the High Plains. Bedrock there is generally buried beneath deep layers of soil and other alluvial materials. Also, imported lumber was much more common and affordable by the time that region was fully settled after 1900. Stone construction began in both the Flint and Blue Hills in the 1870s. Good quality stone


outcropped in these locales, and the post rock (Greenhorn Limestone) was especially easy to quarry, even with ordinary tools. Word of the stone’s advantages spread, and before long it seemed that “every man was a stonemason.”

A few misconceptions exist about stone construction. It was done mostly for practicality, not for style or warmth, and offered a way to gain protection from prairie fires that frequently destroyed wooden buildings at that time. The degree of dominance of stone buildings also is poorly understood. Their frequency in the Flint Hills is often overstated simply because stone structures are more photogenic than the wooden ones we are accustomed to seeing elsewhere. The opposite is perhaps true in the Blue Hills. There public clamor over the unique stone fence posts has long drawn attention away from the even more common use of this material for barns and houses.

Several of the Flint Hills barns are especially impressive structures and are on the National Register of Historic Places. These include the seventy-six-foot-long Big John barn (Fig. 8) one mile east of Council Grove in Morris County (1871–1872), the George Youn barn north of Winfield in Cowley County (1881), and the mammoth bank barn on the Spring Hill Ranch north of Strong City in Chase County (1881).

Another notable area of stone barn construction exists at the western edge of the Blue Hills where the Volga German settlers in Ellis, Rush, and adjacent counties used both the post rock and the thicker Fort Hays Limestone to fashion many buildings. Their churches are famous, of course, but many houses and barns also were built between the 1870s and the 1930s. The reasons for


choosing stone were the same as elsewhere, only augmented here by a greater sense of self-sufficiency born of cultural isolation. As with stone barns in other parts of the state, their heights tend to be lower than those of neighboring wooden barns because of the difficulty of hoisting heavy stone blocks.

The climate variations that make western and eastern Kansas such different worlds in so many ways affect barn design as well. Between 1870 and 1886 the High Plains was primarily a land of range cattle. People there believed that winter feeding was unnecessary and, therefore, so were barns. This philosophy changed after a series of severe blizzards between 1884 and 1887 killed perhaps 40 percent of the region’s cattle. Ranchers reduced the size of their holdings, installed fences, and erected barns and other shelters. One might expect at first that the barns of these reformed cattlemen would be huge, sizes comparable with their herd numbers. This is not the case. Even today many of the local residents agree that, on average, High Plains barns are smaller than those in the eastern part of the state.

The paradox between large ranches and small barns can be explained by the weather. Winter forage definitely is needed on the Plains, whether it be prairie hay, alfalfa, cane sorghum, or something else. Such feed does not have to be stored inside in this physical environment, however, since humidity and precipitation levels are low enough to minimize the danger of spoilage. Like ranchers across the intermontane West, western Kansans opted to stack most of their fodder in the fields. They created distinctive round hayricks or sometimes ones shaped like loaves of bread with a variety of homemade or purchased stacking equipment. It was cheaper to do so for two major reasons. Barn construction costs thus were lowered and, since the haystacks could be positioned closer to the cattle than any single building could be, so was the cost of winter feeding. Some hay was shipped to the family barn, to be sure, but only a small percentage of the crop. Barn hay was used for milk cows, for riding horses, and also for emergency situations where mud or snow made it impossible to access the distant stacks. Because such emergencies were irregular by nature, the fodder in a typical western Kansas barn sometimes was several years old. (If readers are wondering why they do not see haystacks in western Kansas today, the answer is that they have been rendered obsolete by a labor-saving machine that allows one person to create a series of round, thousand-pound bales that repel the elements better than did a well-made stack.)

Two other special barn characteristics of western Kansas deserve mention. One is a contrast between the extreme northern and southern counties there, with southwestern Kansas having mild enough winters so that some ranchers have continued to practice year-round grazing. They, therefore, have opted for fewer and smaller barns. The other point is an obvious contrast between the generality of smaller barns in the west and the presence there of occasional gigantic structures. The big barns of the High Plains are all post-1900 in construction and fall into one of two categories. Some were built to house draft horses needed for working large wheat farms. An example is the famous William Thomas barn that long stood near Woodston in Rooks County and was being restored through statewide fund raising when it burned in the early 1990s (Fig. 9). Thomas owned 1,760 acres in 1910, the year his one-hundred-by-sixty-four-foot barn was completed. Other big barns were designed as show buildings. They can be represented by one constructed in 1936 for Foster Farms near Gem in Thomas County. Its main floor (measur-

ing 114 feet by 66 feet) was once home to prize Herefords and Shorthorns. Later the Cooper family donated it to the Prairie Museum of Art and History in Colby, where it now houses displays about agricultural history.24

The Flint Hills, the state’s most famous cattle country, also has a unique barn heritage. Whereas High Plains ranchers before the modern age of feedlots and irrigation concentrated on the production of young animals to sell to corn-belt farmers for fattening, their counterparts in the Flint Hills raised very few calves. Life in places such as Admire, Cassoday, and Madison revolved around a tradition of transient cattle, animals shipped into the area in the spring for summer grazing on lush bluestem grasses. They would be shipped out and sold in the fall. This arrangement meant that few animals were left in the region during the winter and thus a lesser need for barns than in any other part of the state. Some hay was required, of course, principally for horses and for the purebred cattle kept to improve herd quality. This was sometimes stored in stacks, even though spoilage rates could be substantial in this climate. Another solution was to erect buildings with no walls, or hay sheds. These were cheap and effective shelters.25

One version of the hay shed found in south-central Kansas features a roof that can be raised and lowered to maximize protection for a given amount of hay. This type is known to scholars as a hay barrack and to local ranchers as a hay roof. It has a long history in Europe and elsewhere but has almost completely disappeared everywhere except in Kansas. Barracks survive here because they are well-suited to ranching on the tallgrass prairie. Folklorist Jim Hoy has discovered more than sixty local examples of hay roofs. Most of them occur in Sedgwick County where Henry Nicks had the inspiration to erect the first one around 1927. Nicks built between forty and fifty hay roofs, and other people copied the design, including several living in the heart of the Flint Hills. Owners praise their low construction costs, the way open air cures the hay, and the breeze they get while working in one as opposed to an enclosed barn loft.26

PERFECTING THE PRODUCT

Charles Sehon, a carpenter from West Virginia who came to Kansas in 1884, is known to have built at least six barns in Douglas County between 1885 and 1905. Elements of his individual style are visible to anyone who takes the time to examine the craftsmanship, but these points of similarity are overwhelmed by a fundamental change that occurred in his designs in midcareer, between 1890 and 1901. Sehon’s first barn, in 1885, was a small one that followed the classic three-bay threshing format. Another, built for a bigger landowner in 1890, was an equally classic raised three-bay barn. Both had eave-side openings and center passageways from which hay could be placed in the lofts.

Eleven years elapsed before Sehon built another barn. When he resumed activity in 1901, and with another barn in 1903, the traditional formats had been scuttled. Both new structures still had gable roofs and vertical board siding, but these were about the only reminders of the old. One obvious change was in the entry, which shifted locations from the eave side to the gable end. This, of course, signaled a different interior floor plan. Another important break with the past involved animal location. Even though both of the new barns were large, neither had a basement; the stables were now in sheds attached to the eave sides.


Finally, an observer’s eye would be drawn to a small triangular extension of each roof over a lengthened ridgepole and suspended metal track. Farther below these roof extensions (people called them hay bonnets or hay hoods) was a large door that gave direct access to the hay loft but opened on the outside into nothing but air. What was going on?

If our hypothetical observer were to travel beyond Lecompton Township, he or she would find that Sehon’s barns of 1901 and 1903 were typical of the time rather than some individual flight of fancy. If anything Sehon was a little conservative, for the gable roofs he continued to erect were not the type being built by most of his contemporaries. Another survey of Kansas barns from this period, Greg Schultz’s inventory of twenty-three German- and Swedish American structures, documents this process well. The new roof was a two-pitch design called a gambrel, and it came on the regional scene nearly simultaneously with the hay hood, the new interior layout, and the decline of basement designs. Things were changing fast on many fronts, and the correspondence of the various new elements in time suggests that they all might well be interrelated.

Before delving into the hows and whys of the new barn design, it is useful for Kansans to realize that the gap in Charles Sehon’s construction career during the 1890s is typical for the state. Local residents, especially those on the High Plains, endured the worst drought in Kansas history between 1888 and 1901. When one adds in a national business panic in 1893, it is little wonder that barn construction was minimal. Tragic as it was at the time, this gap in the 1890s is now useful to a modern observer. Any big barn in the state with a gable roof and no hay bonnet

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probably was built before 1890, most likely during or just after one of the boom periods of 1868–1872, 1877–1879, and 1884–1887. The same goes for bank barns and for three-bay threshing designs. On the other hand, if one sees a gable-entry barn accompanied by a hay bonnet, it is a reasonable guess that the structure dates between 1901 and 1930. The same is true for gambrel-roofed barns. The 1930 end-date relates to the Great Depression, of course. This disaster, too, caused a virtual suspension of construction, and since the economic crisis continued nearly until the time of building material shortages during World War II, such inactivity extended through 1945. For the big barns, 1930 turned out to be nearly the absolute end for their construction because few people after the war saw a need to erect any more of them.

To return now to the barns themselves, hay was the most important force behind the changes that had taken place in their appearance by the turn of the twentieth century. More precisely it was the combination of a greatly increased need for hay on the ever-larger farms of the Midwest plus a series of technological improvements that allowed families to put up much greater volumes of this basic fodder than anyone before had thought possible. The transition from old to new began in the 1830s when horse-drawn mowing machines first started to replace hand scythes in the fields. Better rakes soon followed, and by the time of the Civil War the greatest obstacle to increased hay production was in the barn itself. The work of pitching fodder up from wagons into barn lofts was hard, slow, and hot. Dodging roof support beams while moving hay to far corners was no easy matter either.39

A mechanized way to lift hay into lofts first appeared in the 1860s. An iron fork was attached to a rope-and-pulley system that, when pulled by a horse or mule, could raise and lower sizable clumps of hay. This left only the problem of moving the accumulated haycocks from the center section of the barn to its ends. The solution here—a track system suspended from the barn’s ridgepole—launched its inventor on a profitable career. He was William Louden of Fairfield, Iowa, and the date was 1867.40

Louden’s invention, the hay carrier, was important in its own right, but its implications for barn design were absolutely profound. With a convenient way to distribute hay in lofts, why not have higher barns? Why not also make them longer? Even more exciting, why waste potential loft space by retaining a central passage that was open all the way to the rafters? This alley now could be boarded across at the loft level, for nothing prevented loading hay from outside the barn. All that was required was a new

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door cut high on the building’s gable end and an extension of the hay carrier far enough beyond the wall that the hayfork could be lowered over wagons that would be drawn up alongside the barn wall. The most visible evidence of all these alterations to a passerby, of course, was the protruding piece of roofing that protected the end of the carrier. Crowning one or both gable peaks, these modest “bonnets” or “hoods” clearly identified their owners as progressive farmers.

The widespread adoption of the hay carrier led to reconsiderations of barn design far more extensive than just hay doors and boarded-across alleys. Subconsciously, almost all traditional barns had been designed with heights, lengths, and widths suited to the hand-pitching of hay. Now, however, since this fodder could be lifted easily to far greater heights, taller lofts were logical. Longer barns made sense, too, for the carrier could be extended down the middle of a loft for seventy feet or farther without a problem. Moreover, if the loft in the redesigned structure were simultaneously narrowed, the gain in efficiency would be even greater, for the distance workers needed to pitch from carrier to wall would be minimized. Such modifications were the talk of agricultural periodicals in the 1870s and 1880s, and many established farmers in the eastern Midwest put them into practice in that latter decade.

Once people began thinking about taller, narrower lofts, it was natural also to reconsider other traditional aspects of barn design. Time and money spent digging into hillsides and laying expensive stone walls for basement stables might be wasted, they reasoned. Everything could just go vertical instead, and the livestock could be kept at ground level, perhaps in sheds attached to the main barn core. Ramps, too, might be unneeded items.

Another important part of the reconceptualization of the barn involved the internal arrangement of stalls and alleys. The long-standing pattern had been determined by the eave-side location of major doorways, both for the threshing bay on the main floor and for the stables in the basement. In a typical basement arrangement this meant a series of short aisles and four or more rows of animal stalls, as shown in a late example advocated for Kansas farmers (Fig. 10). Such short aisles always had been inefficient for feeding and cleaning; they would become even more so if the barn were narrowed and lengthened.

Why not simply shift the stalls and alleys ninety degrees? A ground-level barn could be accessed from the gable side as easily as any other, and the widths of thirty-two to thirty-eight feet being touted as ideal for the operation of hay carriers would work wonderfully for animals as well. The new arrangement usually focused on a central driveway some eight-to-ten feet wide that extended from one gable-end door to the other (Fig. 11). This served as a feed alley for two rows of stalls, one on each side of the drive. These stalls and their accompanying feed troughs would be approximately nine feet deep if they were intended for horses, and somewhat shorter for cattle. Beyond the stalls and adjacent to the barn walls on either side would be paired alleys for manure removal. Each of these typically would measure five feet across. The linear orientation of the whole arrangement made feeding and cleaning much easier than they had been before. One pass with a feed cart and two with a manure scoop and you were done.

Any Kansas farmers who had strong southern roots and who were aware of the origins of trans-

43. The reconceptualization process for the American barn is obvious in nearly all the textbooks on rural architecture published early in the twentieth century. Representative ones include Roberts, The Farmstead; Alfred Hopkins, Modern Farm Buildings (New York: Robert M. McBride and Co., 1913); K. J. T. Ekblaw, Farm Structures (New York: Macmillan Co., 1914).
verse-crib barns probably were chuckling to themselves in 1900 as the design revolutions wrought by William Louden’s hay carrier spread throughout the Midwest and beyond. The new barns looked remarkably like the ones their ancestors had built in Tennessee and Missouri. The only differences of note, in fact, were the presence of side alleys in the new designs, greater height, narrower width (unless sheds were added), and, of course, hay bonnets (Figs. 3, 12). This type of barn, although popular, has never acquired a commonly accepted name. Some writers have labeled it a western barn, after the region of the country where it reaches its greatest relative frequency, but to most owners it was (and is) just “the barn.”

The Jefferson County farm on which John Steuart Curry grew up had one of these western barns, and this was the type he painted most often. A prominent example serves as the backdrop in *Baptism in Kansas*.

Sometimes, where the need for hay was especially great, the basic western barn design could be further modified. In this situation the loft would be eliminated entirely and the eave sides extended outward in shed-like fashion some ten feet on either side. The wings were to provide stalls for animals, an arrangement that allowed the center portion of the structure to be filled entirely with hay from floor to rafters. Logically enough this design became known as a hay or feeder barn (Fig. 13). Another possible modification, including the sheds but with the loft optional, was to interrupt the single pitch of the roof with a vertical wall between the sheds and the barn core. This procedure increased the storage capacity of the main part of the barn and created what is known as a monitor roof (Fig. 14).

The redesign of barn shape, height, entry location, and stall position was easy to do once people appreciated the basic implications of the hay carrier. Another needed modification was harder to implement. This was to create a loft area that would at once have a greater capacity than before and be free of annoying diagonal braces and cross beams. Such intrusive timbers interfered with easy filling of the mow and always seemed to find a worker’s shin or forehead. The loft problem does not seem complicated when stated in this way, but it was difficult to resolve. Those same beams that gave hay workers fits also formed the basic support system for the entire barn. Cut one of them and you seriously threatened basic structural integrity. The need for a more spacious loft thus was tied to a need for a totally different framing system for the barn as a whole. Heavy timbers spaced every ten feet or so certainly provided strength for a barn, but as the nineteenth century drew to a close, such beams were becoming more expensive to obtain, especially in prairie states such as Kansas. Suspicion also grew that they were unnecessary.

The goal of a number of farmer-inventors in the 1880s was to find a way to fashion a barn out of ordinary plank lumber that would be both strong and free of braces on the loft floor. A variety of solutions emerged, all of them based on the general principle of spacing the smaller boards closer together than before and then bracing them well using the internal strength of triangular trusses. This concept, called balloon framing, was not new in 1880, as it already had been regularly employed on houses for some forty years. Its transfer to the big barns and their lofts was led by a pair of Ohioans, Joseph Wing and John Shawver.

Wing and Shawverboth realized that roof design was the key component of their framing endeavor and that the combination of building strength and open loft space could best be resolved with a two-
pitched, or gambrel, roof. With an upper surface sloped at approximately thirty-five degrees away from the peak and a lower one at about sixty degrees, interior angles were created between the peak, mid-point, and base of the roof, plus the loft floor, that could be braced against one another without any need for disruptive posts out on the loft floor. Shawver was the first to perfect a popular system in the 1880s, a design known for its exceptional strength. Its key element was a series of long planks that extended upward from the loft floor to a purlin plate at the break in pitch of the roof (Fig. 15). Another series of planks ran from the top of the side wall to the peak, creating a solid truss system.\textsuperscript{47}

Shawver trusses remained popular until the end of big-barn construction. One expert estimated in 1923 that half of the “better class” of barns built in the Midwest during the previous twenty years employed this method, and its strength made it almost universal for gambrel roofs spanning widths greater than thirty-six feet.\textsuperscript{48} Shawver’s system went unchallenged for about twenty years. However, for small and average-sized barns it was eventually surpassed in cheapness and efficiency by Joseph Wing’s plan for a braced-rafter roof. Whereas Shawver utilized a set of rigid trusses each spaced about twelve feet apart, Wing decided to use lighter rafters and to space them only two feet from one another. Each set of these rafters was braced separately and was light enough to be assembled and erected easily (Fig. 16).\textsuperscript{49}

Wing’s design first became known about 1909, and within a decade it was the most popular roof for new construction. The advent of braced-rafter barns also represented the complete triumph of balloon framing. Even the Shawver trusses, like all roof structures before them, had required the support of heavy posts and beams in the barn walls. The ver-

\textsuperscript{48} \textit{Farm Buildings} (Davenport, Iowa: Gordon Van-Tine Co., 1923), 18.
\textsuperscript{49} Soike, “Within the Reach of All,” 156–57.
tical siding boards one saw from the outside were not load bearing; they simply connected timber to timber. Because braced rafters distributed the weight of the roof evenly, walls could now change. They, too, came to employ light vertical studs at two-foot intervals. This process worked fine as long as these studs were braced, and builders soon discovered that the easiest way to achieve this end was to change the orientation of the siding. Vertical boards, a trait that had long differentiated barns from houses visually, suddenly gave way to horizontal ones (Fig. 17).

Gambrel roofs were the final important element in the reconception of the American barn that had begun with William Louden’s hay carrier in the 1860s. Once the Shawver trusses had become accepted it was not long before companies mass-produced them and made them available in local lumberyards. The same thing happened later for braced rafters and then for a third support system that featured rafters bent or cut into the shape of a pointed arch. This third type of support, which people soon labeled Gothic, carried the ideal of an expansive, open loft to its literal and figurative pinnacle. Curved rafters almost had to be made in a factory and were relatively expensive. They produced a stylish barn, however, and so began to appear on larger midwestern farms after about 1916. For many farmers, in fact, they were a signature of having arrived financially.51

In the period before 1900 the history of midwestern and Kansas barns is a transformation from a variety of ethnic and regional types to a single kind of general-purpose structure. This one model then evolved further in response to technological and other changes. Barns types became more complicated after 1900. On the one hand, the process of refining the basic barn continued unabated. The balloon frames and Gothic roofs previously discussed are aspects of this development. So is an increased standardization of building dimensions, hay-door designs, and cupola shapes. Mass production is the obvious cause here, beginning with independent lumberyards and by the 1910s extending to large barn-specialty companies. The Gordon–Van Tine Company in Davenport, Iowa, and the Louden Manufacturing Company in Fairfield, Iowa, were especially successful. Even Sears, Roebuck and Company established a barn division and sold “Honorbuilt” designs. Certainly the prices were competitive. A kit

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50. Ibid., 160–61.

51. Ibid., 161–65.
for a thirty-two-by-fifty-four-foot model from Gordon–Van Tine with a braced-rafter roof, for example, sold for $1,240 in 1923.52

Post-1900 barn developments were not completely toward standardization, however. American farmers began to move away from general operations in which they produced a wide variety of crops and animals. Instead they decided to specialize in dairying, perhaps, or raising hogs. Engineers at the various agricultural experiment stations across the country responded with new barn designs to facilitate these changes. The feeder barn previously discussed may be regarded as one such specialized structure (Fig. 13), but dairying prompted the biggest alterations. New Englanders had been experimenting for some time with a system of outbuildings linked by connecting sheds, but this idea did not spread.53 Slightly more successful and certainly more widespread was the concept of a circular barn. Professor Franklin King at the University of Wisconsin promoted this design as an efficient way to utilize another of his pet projects: the silo. A circular barn built around a circular silo seemed to him the epitome of a progressive dairy.54

Most dairy farmers and experiment station experts decided that round barns were radical. They opted to modify the now familiar basic rectangular barn model. A good sampling of these changes appears in the only bulletin ever issued on barn construction by the Kansas Agricultural Experiment Station. An ideal dairy building, its writers said, should have its long axis running north and south. This orientation would best capture summer breezes and also maximize the amount of light that could enter the structure. Light was especially important, for the disinfectant properties of sunlight had become well known by this time. The recommended formula was four square feet of glass per cow, which meant a lot of windows. The accompanying illustration shows twelve along each eave side and four others on one gable end (Fig. 18).55

Sanitation and healthfulness were bywords for a modern dairy barn. Ceilings were lowered to control drafts, concrete floors poured for cleanliness, and expensive ductwork installed for better ventilation. From the outside the emphasis on health could be seen easily in two features. The old wooden cupolas of the past were replaced with new, specially designed metal ones that could waft away the gallon and a quarter of water each cow now was known to give off daily with her breath.56 The other feature was more symbolic. Owners often decided to abandon their long-standing preference for red paint on barns and opted instead for a more aseptic white.57

**Decline, Conversion, and Preservation**

As Americans returned to their normal routines after World War II, few probably realized that the big barns that had defined much of their lives for generations past were already relics on the landscape. Only a handful would be built after 1945. Instead, the trend would be first to modify them in various ways and then to abandon or raze most of the remaining structures. Like the story of dinosaurs, it seemed, the barn’s time for ruling the Midwest had come to an unexpected end.

52. Ibid., 157–60; Farm Buildings, 1.
The demise of the big barns was not really unexpected, of course. People just had taken their presence for granted, perhaps subconsciously, they assumed the buildings would survive even though their purpose was disappearing. Still, the signs were obvious in the wholesale movement of people to urban areas (leaving thousands of barns abandoned), in the specialization of the remaining farms (requiring different buildings), and in many other ways. The gasoline engine, for example, was perhaps as big a factor as any in the transition. As early as 1922 the authors of a popular text on rural architecture cautioned people not to keep tractors, automobiles, and such in the barn. Not only would “the fumes from the manure have a bad effect on the finish of the machines,” but also “the presence of gasoline and oils, and the operation of an engine in the barn is a dangerous fire risk.”

New technology was an important factor as well. Metals contractors began to offer roof trusses that could span spaces of seventy feet or even more, and Howard Doane and Bernon Perkins, from St. Louis, patented what they called a pole barn in 1953. This structure, little more than corrugated sheets of metal placed over a frame of pressure-treated timbers, was cheap and flexible. It could easily house machines too big to get through the old (and increasingly proverbial) barn door.

This article’s concern is not with the recent changes in rural building technology, however, but with the old barns themselves. Will these friendly giants all disappear? Should at least some of them be saved, and, if so, how? If I had been asked the first of these two questions twenty years ago, I perhaps would have answered yes. Barns were coming down fast in those days, as farmers either bulldozed old structures to avoid paying taxes on them or left the roofs unrepaired long enough so that collapse occurred on its own. Many old barns often were prone to collapse anyway, because their structural integrity had been compromised by a gutting of their interiors. Hay storage from ground to rafters became the fate of many, and then poor stacking would lead to side pressures that forced walls off their foundations. Suburbanites even got in on the process. Stories have it that many such folks would buy a piece of rural land solely for its barn. They then would carefully dismantle the structure and use the weathered boards as fashionable paneling for home and office walls.

Kansans and other midwesterners who love old barns have more reason for hope in 1999 than in 1979. Tastes in wall paneling have changed, and, more important, we have begun to realize that barns and other buildings that reflect everyday life in the past are as important to protect as are banks, cathedrals, and other such monumental structures. How better to understand the workings of a nineteenth-century farm than to study how its life was expressed and coordinated in its most fundamental building? How better to follow the changes in rural America than to trace these things in tangible form through the barn evolution discussed on the preceding pages? Then too, everyday (or vernacular) buildings reveal and evoke much more than just economic activity. People spent a great deal of time in their barns. They were sanctuaries during episodes of wounded pride, places to escape the cold in the middle of winter chores, the sites of dances, and, of course, places to meet friends and lovers. And surely I am but one of thousands of Kansans who has once swung grandly on a sturdy hay rope from one beam to another.

How can we move from nostalgia and concern to something more? A few barns can be saved by turning them into museums, weaving studios, restau-

58. Foster and Carter, Farm Buildings, 52.
rants, and the like. The Legler Barn Museum in Lenexa and Fire Station Number Four in Lawrence are examples. Most old barns are too remote from urban centers for this kind of radical conversion, however. The best advice for these structures may come from steps already taken in other midwestern states. People in Michigan and Ohio have been especially active in expanding on a 1987 initiative by the National Trust for Historic Preservation. The National Trust, with cosponsorship from Successful Farming magazine, began a practical program to advise interested owners how they might adapt their old barns to new farm uses. They have described the principles of timber-frame construction, for example, so that people might better know how such frames might be modified to create new spaces. Workers in the state programs have made copies of useful publications available and compiled lists of qualified local contractors and carpenters who are willing to consult and/or complete projects. They even have created home pages on the worldwide web. Kansans could easily do these same things.60


The National Trust and state-level initiatives also make people aware that many vernacular buildings, including barns, are eligible for listing on the National Register of Historic Places. The registration process requires some time and research, but once done, the barn may qualify for a 20 percent investment tax credit for many rehabilitation expenses if it is an income-producing property, or for a Heritage Trust Fund grant.61

Finally, for anyone interested in barns but lacking first-hand knowledge, a field visit with an older Kansan is recommended. The most pleasant part of preparing this article was time spent doing such walking and listening. Barns are wonderful vehicles for loosening memories and tongues. You will learn much about the structure itself, but do not be surprised if the talk also moves on to issues of corporate farming, carpentry, and one-room schools. Barns are powerful icons for a great many subjects.

61. Kansas information on the National Register of Historic Places is available from the Cultural Resources Division, Kansas State Historical Society, 6425 SW Sixth Avenue, Topeka, KS 66615.