

Frontier Housing in North Dakota

by John Hudson

Of all the traits of material culture used to interpret human occupancy in a region, probably none has been more popular than the house type. Habitations reflect cultural traditions, popular fashions and the basic necessity for shelter within the context of each region's physical environment. Historic buildings stand as important reminders of these traditions long after the pioneer or folk housing phase has passed. Restraints imposed by the physical environment can be overemphasized, but they are of great importance, especially when a population settles an unfamiliar landscape.

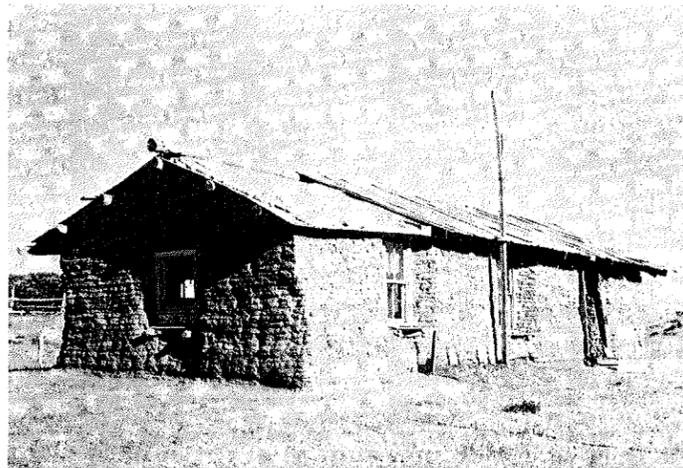
Two themes — tradition and necessity — have formed the basis for most studies of folk housing in the United States. The cultural geographer, Fred Kniffen, has been foremost among those emphasizing the importance of tradition in the westward diffusion of housing practices.¹ He has traced folk housing from three source areas (New England, Middle Atlantic and Lower Chesapeake) westward to the Mississippi river. The New England house type diffused through New York and into the lower Great Lakes area, providing the dominant influence for the upper Middle West. The Middle Atlantic type was strongly influenced by German log construction in Pennsylvania; this complex of housing characteristics spread down the Appalachians and eventually throughout the area referred to as the Upland South. The Lower Chesapeake type spread from the Maryland and Virginia Tidewater southward along the coastal plain to Georgia and Florida.

It is, of course, no accident that these routes of cultural diffusion strongly resemble migration patterns of people, dialects and numerous other cultural indicators. Up until 1850, New England "Yankee" influences did dominate in the upper Middle West and this was true of the whole life style as well as for the forms upon the landscape. From this date onwards, however, it is not meaningful to speak of Middle Western culture in terms of influences from a dominant New England or Middle Atlantic origin. Thousands of Scandinavian and German settlers provided a new frame of reference, especially for the area west of the Mississippi.

Kniffen's house-type boundaries end at the Mississippi, apparently because he has not extensively investigated the area to the west. Other students either have not been interested or else have been incapable of extending his studies in that direction.²

¹Fred B. Kniffen, "Folk Housing: Key to Diffusion," *Annals, Association of American Geographers*, 55-4 (Fall, 1965), 549-577.

²One study showing the importance of both New England and Southern influences in plains architecture is *Nineteenth Century Houses in Lawrence, Kansas* (Lawrence: University of Kansas Museum of Art, 1968).



A McKenzie County sod house.

—State Historical Society of North Dakota Collection

A log house formerly located near Nishu in Mountrail County

—Dana Wright Photo. State Historical Society of North Dakota Collection



Historians and geographers of the trans-Mississippi west have placed a strong emphasis on the physical environment as the factor influencing settlement patterns, house types and agricultural practices. Cultural traditions are deemphasized or treated as impediments (for example, Carl F. Kraenzel's "humid area institutions" thesis).³ Adaptation and adjustment are far more common themes: in other words, this argument asserts that on the semi-arid grasslands people did what was necessary in order to survive. They acted in response to the environment, or acted in spite of it, depending on how pathological one's view of plains settlement is. Walter Prescott Webb's notion of a northward, Texas-based diffusion of the range cattle complex is a notable exception of a cultural explanation which stands in sharp contrast to the dominant, environmentally-based ideas about plains settlement.⁴

This study will demonstrate the importance of both cultural tradition and environmental necessity in the spread of folk housing practices on the North Dakota frontier. It will be shown that environment influenced the choice of building materials for some groups more than others. The sod house, which has nearly always been treated as a necessity for the settlement of treeless prairies, emerges as a somewhat less significant and less widely adopted form that most studies imply.

The data used in this study were obtained from a file of several thousand questionnaires and accompanying autobiographies of pioneer settlers which were collected by the State Historical Society of North Dakota and Works Progress Administration's Historical Data Project during the late

³Carl F. Kraenzel, *Great Plains in Transition* (Norman: University of Oklahoma Press, 1955).

⁴Walter Webb, *The Great Plains* (Boston: Ginn and Co., 1931), VI.

⁵I would like to express my appreciation to Frank E. Vyzralek, Archivist, State Historical Society of North Dakota, for allowing access to the data.

⁶Elwyn B. Robinson, *History of North Dakota* (Lincoln: University of Nebraska Press, 1966).

1930's.⁵ These data provide a wide variety of information about pioneer life in the state, only a small portion of which relates to housing. A sample of approximately 1000 records was obtained. The following data summaries and analyses are based on this source unless explicit reference is made to other works.

SETTLEMENT OF NORTH DAKOTA

Almost all of the original white settlement of North Dakota occurred during two periods which Elwyn B. Robinson has called the Great Dakota Boom (1880's) and the Second Boom (1898-1915).⁶ In the first period, roughly the eastern two-thirds of the state (Dakota Territory) was settled by a mixture of Norwegians, Germans and Middle Westerners who engaged in mixed farming. A significant Canadian-born element settled along the northern border at this same time. Toward the end of the 1880's, Russian-German farmers settled the region southeast and a strip directly west of Bismarck. The western one-third of the state, including all the rest of the land west of the Missouri, remained a range cattle empire until after 1900. Crop farming mixed with ranching gradually took over on the Missouri Slope until nearly all land had been settled, about 1918. The two peaks in settlement are easily observable in the pioneer house construction dates used in this study (Figure 1).

The spread of frontier housing across northern Dakota was far from being a uniform, westward trend (Figure 2). The Red River Valley was colonized on a north-south axis. The influence of the Northern Pacific and St. Paul, Minneapolis and Manitoba (Great Northern) railways is easily seen on the map by noticing the parallel corridors of more rapid advance. This map is similar to the familiar one of population frontiers published in the 1890 U.S. Census of Population, but differs in two ways. First, the houses in this study were definitely on the frontier; they were in each case among the first farm

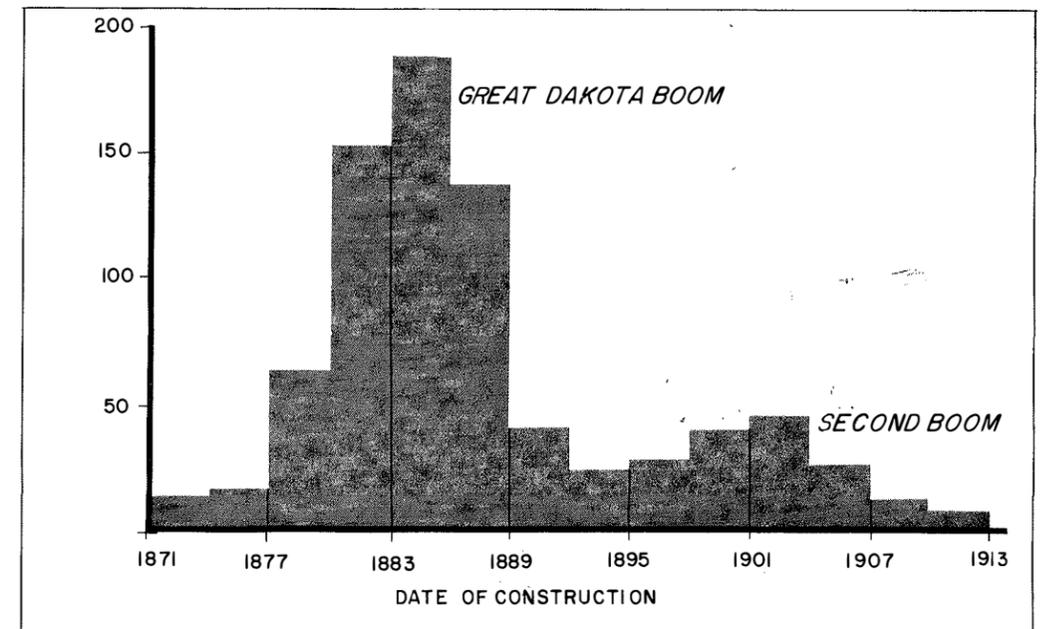
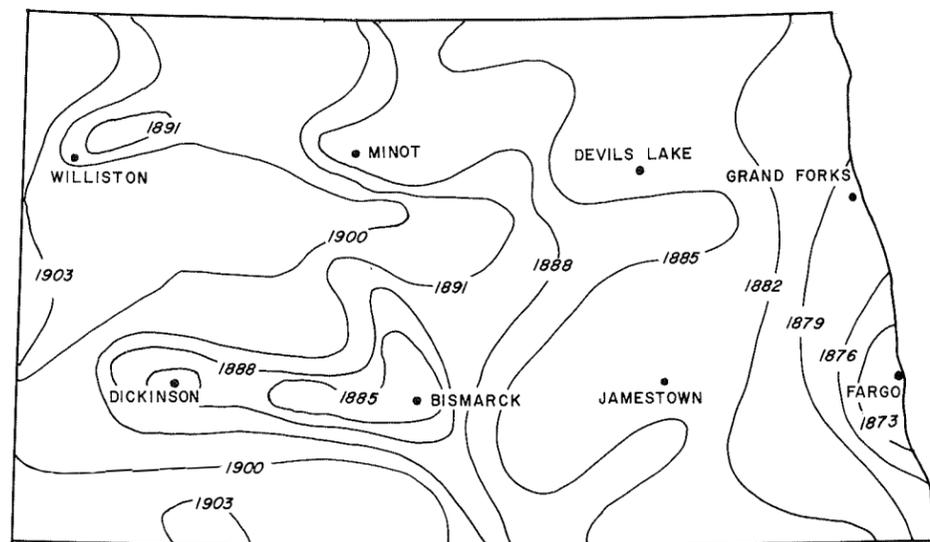


Figure 1: Dates of Construction of Pioneer Houses in North Dakota.

—Courtesy John Hudson

Figure 2: Median Date of Construction for Sample of Pioneer Houses Used in this Article. Computed for Square Blocks of 16 Townships.

—Courtesy John Hudson



houses constructed in their respective counties, hence the westward extent of the frontier in each year is somewhat beyond that for a map which defined the frontier as two persons per square mile. Second, Figure 2 also shows the spread after 1890.

HOUSE TYPES

The most common types of original rural dwellings on the Great Plains were the log house, the wood frame house or shack (which includes the tar paper shack), and the sod house. These types require some clarification because few dwellings were constructed of only a single building material.

Log houses are defined here to include all those structures with log walls, regardless of roofing materials. Many log houses had sod and pole roofs; others had roofs of sawed lumber covered with tar paper, or a combination roof made of

sod, prairie hay and poles. Similarly, houses made of sawed lumber include all framed structures sided with lumber. Most of these dwellings had paper-covered, lumber roofs, but there were variations. A sod house is defined as any structure with sod walls, whether freestanding or dug into a bank. Most sod houses had a combination roof of sawed lumber and sod, although sod-pole-hay roofs were also common. Some sod houses had no sod on the roof. Briefly, then, houses are classified by building materials in terms of their dominant feature, the walls or sides, rather than the roof.

These three types of frontier dwellings were supplemented by other forms in a few areas. In some questionnaires, individuals listed their house only as being a dugout. In the cases where these could be checked, the term dugout referred to a log or sod structure usually set into a bank along a stream or in a draw. One significant departure from these traditional materials was the use of sun-dried bricks made of straw and clay. Russian-Germans and some Danes built these houses, which were plastered inside and out with clay and then whitewashed.⁷

Most variations away from the log-lumber-sod theme came after initial settlement. Stone houses were built from the abundance of boulders that had to be cleared from fields, especially on the Missouri Coteau. Brick farm houses were built by some Germans west of the Missouri from locally manufactured clays. These, as well as other more ambitious and costly housing ventures, came after the initial need for housing had been fulfilled. The first dwelling was to provide shelter and to satisfy requirements of the various public land acts. These houses were rarely architectural masterpieces, but they are interesting reflections of the place and of the people.

THE LOG HOUSE

The fingers of timbered land that reach into the Great Plains along major streams play a significant role in the interpretation of the region. These strips of forest provide a key to vegetation history. They were also important in the

⁷*Ibid.*, 159-161.

pioneer settlement phase. In North Dakota, aspen and oak along the banks of the Red, Wild Rice, Goose, Forest, Sheyenne, Park, James, Tongue and Pembina rivers provided timber for log houses for a wide area along their courses. The cottonwood-willow mixture along the Missouri provided another source as settlement pushed westward. In scattered other areas, such as the Turtle Mountains, the Killdeer Mountains, the Dogden Buttes and near Devils Lake, wood for housing and fuel was obtained and hauled for distances up to 50 miles. In the Little Missouri Badlands, cottonwood, ponderosa pine, juniper and cedar played a similar role. Nearly all houses within a dozen miles of a timbered area were built of logs in the early years.

The proportion of pioneer houses constructed of logs is thus surprisingly large (Figure 3). Until 1877, the log house was dominant in nearly all the state except portions of the Red River Valley where sawed lumber was available. In the late 1880's and early 1890's settlement spread up the Missouri Valley and log houses were extensively used again.

Since log construction was familiar to most of the early settlers on the woodland/prairie borders to the east, it is reasonable to assume that they simply transferred these techniques of construction to the new environment. Both logs and bark were used in construction, the bark being used mainly for roofing. In the Sheyenne Valley in Griggs County, several settlers reported using elm bark and logs; along the Souris "loop" in McHenry County, oak and elm predominated; in Cavalier County, poplar was used. The available photographs of these log houses indicates that they were built along conventional lines — one or two stories, square, with a lean-to entrance along the side and sometimes a gable-end chimney.

The chimney was definitely a log-house feature in frontier North Dakota, but was not in widespread use. The typical folk house, whether of logs, lumber or sod, had one or more stovepipes protruding from the roof or through window openings. By the time the state was settled, cast-iron wood stoves were common and many pioneers from the Middle West brought these with them. Those who tried to burn lignite or twisted hay in their stoves often reported them to be unsuitable for this purpose. This was a problem unknown to the log house pioneer living near the timbered valleys of the eastern part of the state.

FRAME CONSTRUCTION

During the Great Dakota Boom and again during the Second Boom, the sawed lumber house was dominant. Frame construction had several advantages. It was quick and it was relatively simple. A frame shack could easily be enlarged, whereas log and sod structures could not. Many of the early frame shacks continued as part of a larger house in later years, but most log and sod houses became barns and sheds or were dismantled.

The adaptability of the wood frame structure to further additions is but one aspect of what was probably the key to its success as the most widely used mode of construction in a

⁸Amos Rapoport, *House Form and Culture* (Englewood Cliffs: Prentice-Hall, 1971), 65.

largely treeless region: it was portable. When a homesteader quit and moved elsewhere, it was common to sell the claim shack to another homesteader. Frequent errors were made by townsites speculators anticipating the railroad. When the railroad bypassed their town, the buildings were sold either to homesteaders or to residents of the new town. Since these shacks were small (about one-third of them were 12' x 14' or smaller) they could often be purchased, moved and sited on a new homesteader's land thus saving him the time and work of construction.

The distinctive architectural style of many frontier frame dwellings may be a clue to the origin of this type in the portable structure. Picture after picture of frame, wood and paper-sided shacks show that the dwelling had an arched roof without a ridge piece. House construction of this sort was certainly novel in the United States at that time, yet it was in widespread use on the Dakota prairies.

The arched roof was and is widely used for wagons, portable shacks and vehicles of various descriptions where the weight of the roof must be minimized as a fraction of the weight of the entire structure. Such buildings first appeared in North Dakota as cook cars on the bonanza farms of the Red River Valley. Some of them were sold to homesteaders for dwellings and thus, probably, was born a distinctive house type. Since many eastern Dakota homesteaders worked on the bonanza farms at one time or another, it is likely that knowledge of these small, portable structures became widespread by the mid-1880's.

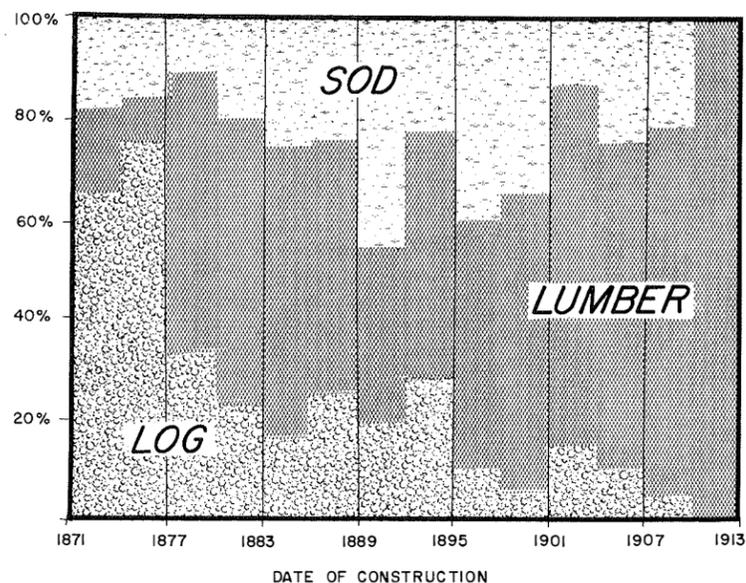
The early arched-roof frame homesteader's shack had a single gable-end door with windows along the sides, indicative of their origins as "cars." One-room schools were also built in this manner. Eventually, larger, arched roof buildings appeared with doors on the long sides, atypical of wagon-type vehicles, which indicates that the original type was imitated and modified. In fact, the very large number of such structures alone necessarily indicates that not all of them could have started out as wagons. Arched roof construction was retained, however, and made the shacks more easily transportable than they would have been if more conventional framing with a peaked ridge and rafters had been used. An added benefit of the arched roof was that it offered less wind resistance than a peaked-roof building, provided it was oriented at right angles to the prevailing winds.⁸

This frontier house type did not survive the transition to larger, balloon-frame houses. In time, smaller versions of typically "Corn Belt" homes became common in the state. Small, arched roof sheds are still found in industrial uses although they have apparently all but disappeared from the farm.

There were also some disadvantages to frame construction. The shacks were cold. Many homesteaders learned that they could make the house warmer by laying a veneer of sod on the outside. This was especially necessary when green lumber was used; the lumber shrank, opening large cracks in the walls. In desperation, one family reported making an igloo of their house in the winter in order to keep out the wind.

Figure 3: Proportion of Pioneer Houses Constructed of Major Building Materials.

—Courtesy John Hudson



Sawed lumber was not available everywhere, especially in areas remote from the railroad. The lack of lumber was not unknown among settlers coming from the east. A family from Belvidere, Illinois, brought enough lumber with them to build their house near Sheyenne. A homesteader from Kenosha, Wisconsin, built a small house before leaving home, knocked it down, and then reassembled it on his Sargent County claim.

About two-thirds of all pioneer houses of frame construction were built within 20 miles of a railroad; only four percent of the log houses and thirty percent of the sod houses were so situated.⁹ The spread of the railroads and the spread of the frame house occurred together. Framing was clearly the preferred mode of construction after the rails began bringing in the lumber — mostly soft pine from forests along the Northern Pacific in Minnesota.



THE SOD HOUSE

Even since Everett Dick's *The Sod House Frontier* appeared in 1937, the sod house has been accepted by many as the dominant type of folk housing on the plains.¹⁰ Sod houses were not original with white agricultural settlement in the North American Great Plains although they are more often identified with this region than with any other. Some of the early Irish settlers in Newfoundland built houses with sod or mud walls in areas of sparse and stunted timber, as they did in Ireland.¹¹ Sod construction was practiced by the Mandans at the time of earliest white contact. In the mid-1840's, the Mormons constructed sod houses at their winter camp in Nebraska and throughout the Platte Valley.¹²

The advantages of sod construction in an area of sparse timber are so obvious that they need not be elaborated. Most plains grasses provided sufficiently wiry and woody roots to make prairie sod useful as a building material. Sod houses were found from the bluestem prairies east of 96 degrees to the short grass country west of 102 degrees. Roger Welsch, perhaps the foremost authority on the Nebraska "soddy," states that buffalo grass was one of the more popular grasses for sod house construction;¹³ this seems questionable since its area of dominance is well to the west of the area where sod houses were most numerous.

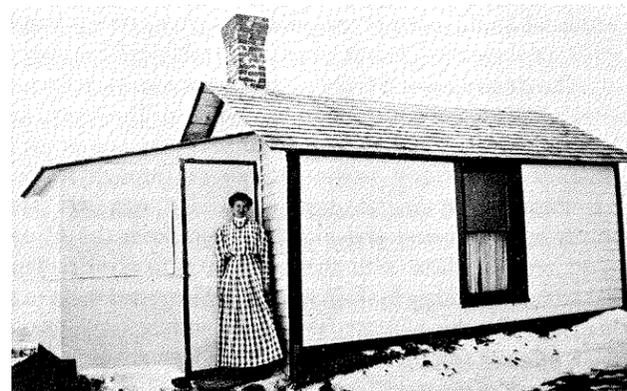
If a sod house frontier existed, it has not been located with any precision other than being coextensive with the Dakotas,

Nebraska, Kansas and perhaps a fringe of 50 miles around these states.¹⁴ A map of the proportion of pioneer dwellings constructed of sod in North Dakota reveals that sod houses were widely scattered over the eastern two-thirds of the state, but were dominant in only a few areas (Figure 4).

Two factors account for most of the distribution: availability of alternative building materials and ethnic background. The flat and nearly treeless Red River Valley had relatively few sod houses. Frame houses dominated the Valley after the Northern Pacific Railway reached the Red River in 1871.¹⁵ The timbered river valleys, the Pembina Hills and the Turtle Mountains in the north made log construction more popular there. The transcontinental railroads crossing the state made commercial building materials available in the areas they served. Western North Dakota was settled after the railroads went through. It probably had the fewest sod houses of any region in the state. This eliminates most of the state from the sod house frontier category and leaves only the stony and treeless till plains of central North Dakota. These were areas heavily settled by Russian-Germans and to a lesser extent by Norwegians, mainly during the interval between the two principal settlement phases.

Two styles of frame claim shanties. An unidentified family poses in front of their tarpaper shack with a rounded roof (1.) and Louise Guthrie Blankenship's home in Divide County reveals more elaborate touches; note the brick chimney.

—State Historical Society of North Dakota Collection



The genesis of the plains sod house is conventionally described in terms of necessity. On the plains "shelter

⁹Railroad construction dates were supplied by Frank E. Vyzralek.

¹⁰Everett Dick, *The Sod House Frontier* (New York: Appleton-Century-Crofts, 1937).

¹¹John Mannion, *Irish Settlements in Eastern Canada* (Toronto: University of Toronto Department of Geography Research Publications, 1974), 143.

¹²Roger Welsch, "The Nebraska Soddy," *Nebraska History*, 48-4 (Winter, 1967), 335-342.

¹³Roger Welsch, *Sod Walls: The Story of the Nebraska Sod House* (Broken Bow, Neb.: Purcells, Inc., 1968), 30.

¹⁴*Sod House Memories*, vol. 1, (Hastings, Neb.: Sod House Society, 1972). A map on p. iv of this volume indicates this as the "sod house area."

¹⁵There were exceptions. One pioneer reported that in 1881 all the houses around Grandin were built of sod due to low, wet ground which made it impossible for lumber wagons to get in.

presented a challenge — no timber to hew into logs or clapboards, no poles for bracing, or for ridge-poles — something had to be improvised. Thus was born the skill of plowing the rich meadows into uniform slices cut into uniform lengths, and in more or less brick fashion, grassy side down, build a wall."¹⁶

Welsch has gone beyond the "necessity" thesis to offer an explanation for the persistence of sod construction: "In addition to the superior quality of sod, there was another reason for its popularity in house construction even after lumber was available and inexpensive: the momentum of tradition. Plains houses were sod houses. When one built a house, he built it of sod, by reason of a regional habit."¹⁷

This "regional habit" may well have existed in Nebraska; bona-fide sod houses were built there at least until the mid-1930's.¹⁸ In North Dakota, however, this habit did not exist except among the Russian-Germans. Sod houses were on the wane by the time the Second Boom started and they were never in a majority on the subsequently settled portions of the Missouri Slope. It stretches credibility to call the state a "sod house frontier."

HOUSING DIFFERENCES AMONG CULTURAL GROUPS

It is often remarked that the only North Dakota pioneers who came from a similar physical environment were the Russian-Germans. This group also transferred many innovations that were previously uncommon on the northern plains: the use of "mist" — bricks made of manure and straw — for fuel; the use of clay, straw and lime for building construction rather than wood; the practice of building a single, elongated sod structure which was both house and barn, and the common practice of flax raising. Another factor

¹⁶*Sod House Memories*, 88.

¹⁷Welsch, "Nebraska Soddy," 342. Emphasis in the original.

¹⁸*Ibid.*

which is less often mentioned is that the Russian-Germans were the only large group which entered North Dakota from the south, parallel with the rainfall gradient rather than across it. The common migration pattern from South Russia usually included stop-overs lasting from a few weeks to several years with relatives and friends in the eastern Nebraska and South Dakota colonies where they gained valuable knowledge of agricultural life in the American grasslands. Norwegians also practiced this "step-wise" migration, but their older enclaves were in eastern Minnesota and Iowa, Wisconsin and Illinois.

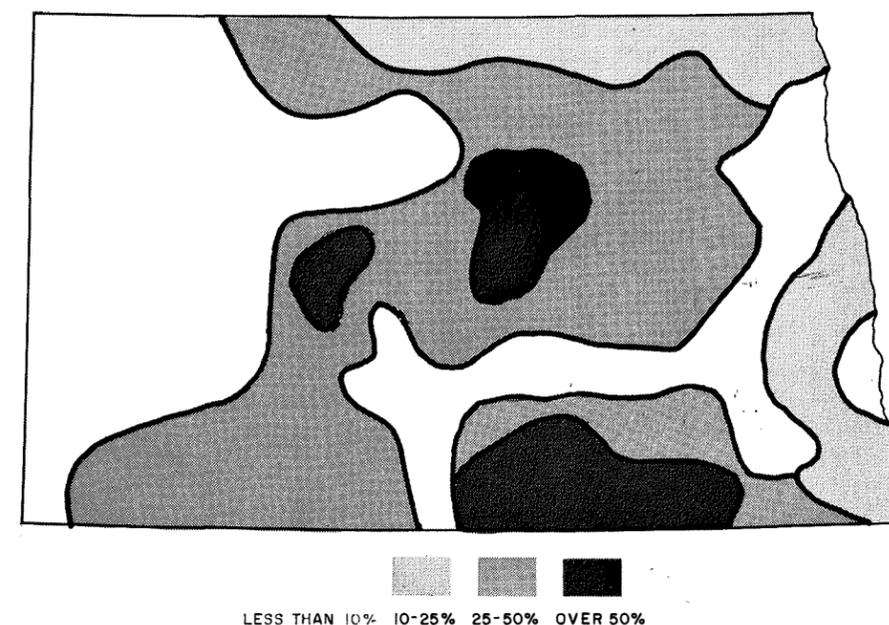
Russian-Germans settling North Dakota were thus largely pre-adapted to the ways of life on the plains. They had the least need to modify their traditions. They were also the most likely group to construct sod houses — nearly 85 percent of them used sod or straw/clay brick construction. A negligible proportion built log houses and probably few knew the techniques of log construction. Since they came late, very few of them settled the wooded valleys of the eastern portion of the state.

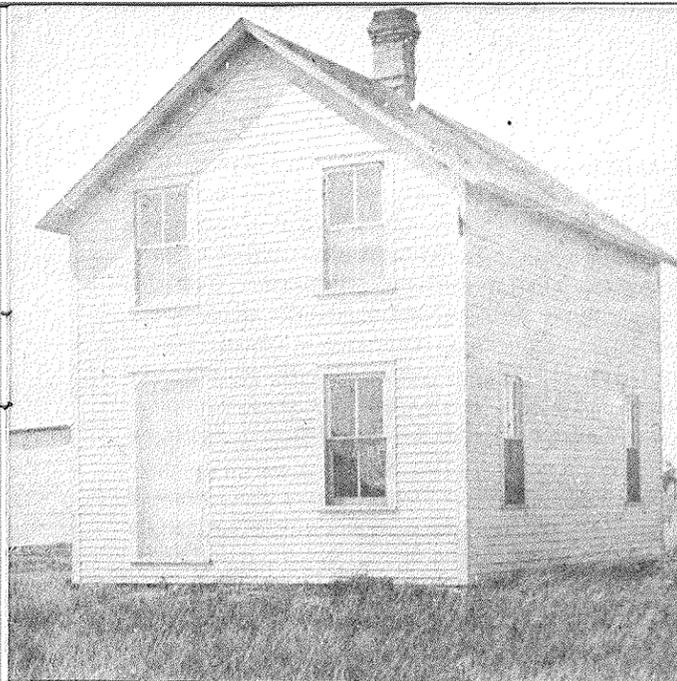
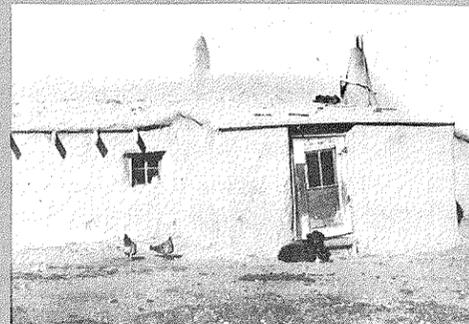
Most of the Russian-Germans settling North Dakota had been preceded by at least three generations of ancestors on the Russian steppes. It is not surprising that the building techniques used by their more distant German ancestors had fallen into disuse in favor of more recently learned techniques. It might seem from this that tradition is a sure predictor of what a group will do when it encounters a new environment; however, another example will show that this is false.

North Dakota's German-born and German-stock pioneers stand in sharp contrast to their counterparts who came via Russia as well as other Germans who settled elsewhere in the United States. Sixty-eight of the 100 German pioneers in the sample built frame houses; only about 20 percent built sod houses and 10 percent had log dwellings. On the other hand, Texas Germans on the southern leg of the semiarid grasslands built log houses when they first settled there in the 1840's.

Figure 4: Proportion of Pioneer Dwellings Constructed of Sod.

—Courtesy John Hudson





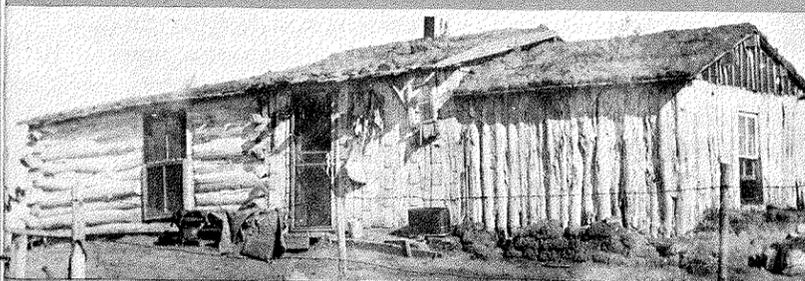
(top, right) A metis log house in the Turtle Mountains. (above) A Russian-German house near Ashley. (page 11, nearest caption) A log house built near Velva in 1886; the remains of a sod shanty in McLean County as photographed by De Graff studios.

—State Historical Society of North Dakota Collection



(above, top) The peaked-roof homestead soddie belonging to Otto Nelson in pioneer Williams County. (above) Mrs. Lucy Vanderberg and her tarpaper-sided shanty in early Divide County. (right) An early split-log home near Hillsboro in Traill County.

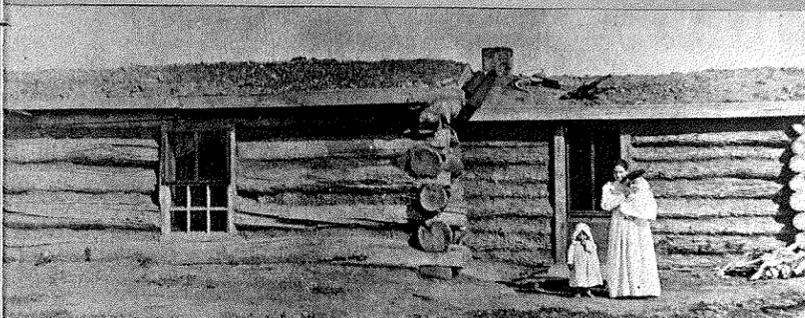
—State Historical Society of North Dakota Collection



(top, left) The S.W. Ainger farm house said to have been the first frame dwelling in Hettinger County. (above, top) An unnamed couple in front of their tarpaper shack insulated with sod. (above) The Paulson residence near Paulson in Divide County.

(left) Kid Wickbam's pioneer log home. (left, bottom) An 1898 portrait of a log house near Elbowoods in Burleigh County.

—State Historical Society of North Dakota Collection



Later, they switched to half-timbering and rock and mortar construction which they practiced in Germany.¹⁹ Their early log structures were similar to other eastern American log buildings, indicating that the Germans learned these techniques after migration.

Most Germans who moved to North Dakota from rural Wisconsin and Minnesota during the '80's probably had lived in log houses at one time or another. In North Dakota, they did not choose to build in logs, even in areas where log structures were common. The preference for framing that the German-born and the German-Americans showed was also true for the few Pennsylvania Germans ("Pennsylvania Dutch") who settled in the state.

Norwegians and Swedes apparently had less definite preferences when it came to choosing building materials. In this sense they were the most adaptable of the pioneer groups. In timbered areas, they built with logs; when they were near Russian-Germans, they were apt to use sod; elsewhere they employed frame construction. About 50 percent of the Norwegian and Swedish-born pioneers built their first homes of sawed lumber and the rest were evenly divided between the log and sod categories. Norwegian-Americans from Wisconsin, Minnesota and Iowa used a greater amount of log construction than their foreign-born counterparts partly because they settled eastern North Dakota in relatively large numbers. However, this group, proportionately, built three times the number of sod houses in North Dakota as did an equivalent number of German-Americans born in those same states.

Another indication that country of birth does not necessarily predict response to a new environment is offered by the Canadian settlers. Canadians came west in large numbers during the '80's and many of them settled along the international boundary from Pembina to the Turtle Mountains. The bulk of them were from French Quebec or were of Scotch, Irish and English stock and had lived in Ontario. Nearly all were from woodland environments where log construction dominated.

In this sample, taking Canadians as a whole, frame houses account for about half of the dwellings. Among those who classified themselves as French-Canadians, however, more than 70 percent built log houses. In contrast, the English, Scotch and Irish settlers from eastern Ontario built frame houses in about a two-to-one ratio over all other modes of construction.

Geographical analysis shows that the English, Scotch and Irish Canadians did build log houses in the timbered areas of the northern tier of counties in the state, but quickly turned to other materials — principally sawed lumber — as soon as they passed out onto the treeless prairies. French-Canadians never made this transition; their numbers were few in the rural population outside of Bottineau, Pembina, Rolette and Cavalier counties. Here were two groups having markedly different cultural traditions, who previously occupied similar physical environments, and who showed divergent tendencies to adapt to the grassland environment.

The final group represented in this sample in sufficient

numbers to permit generalization is the older American stock — those pioneers whose parents were also born in this country. Only 15 percent of this group built sod houses — a lower percentage than for any of the foreign-born or foreign-stock groups although it was not much lower than the corresponding figure for Germans. Practically all the older American settlers came from states east of North Dakota. Their avoidance of sod construction may be attributed to unfamiliarity with this mode and the usual economic advantage that such natives had over foreigners in starting a farm.

The eastern Americans in North Dakota also eschewed the log house — only 17 percent built in logs, making it really no more popular than sod even though it was certainly more familiar to this group than was sod construction. Those few who came to North Dakota from the Upland South (20 were recorded in the sample) had a greater preference for log houses in keeping with their backgrounds; eight of the 20 built log houses which were scattered over the state.

This analysis of folk housing choices made by the various groups settling North Dakota is necessarily stated in rather broad generalizations. It is recognized that groups do not make these decisions; individuals do. The sharp contrasts between the several major ethnic groups, however, indicates that there were definite preferences that must be explained by cultural backgrounds and not simply by individual preferences. The geographically restricted supply of timber, the ubiquitous presence of prairie sod and the largely important supply of sawed lumber were three resources that were quite evidently perceived differently by each group. Such preferences make the explanation that people built from whatever was at hand seem quite inadequate.

HOUSING CHARACTERISTICS

The Historical Data Project questionnaires also provide several other kinds of information about frontier dwellings, such as the length of time the structure was used as a house, its overall dimensions and the names of the persons who built it.

The median number of years of occupancy for houses in this sample indicates that log houses were most durable (eight years median occupancy), followed closely by frame structures (seven years) and sod (five years). Occupancy, however, meant different things to different people. Some houses were continuously occupied by families; others were used once or twice a year when a bachelor homesteader visited his land between winter work in the Minnesota woods and summer work on the railroads or on established farms. Too, these occupancy figures relate to the use of the building as a house and not to a subsequent use as a barn or shed. In 1939, when most of these data were collected, about eight percent of the original log or frame structures or parts thereof were still in use as houses. None of the sod houses in the sample survived intact more than 30 years.

¹⁹Hubert G. H. Wilhelm, "German Settlement and Folk Building Practices in the Hill Country of Texas," *Pioneer America*, 3-2 (Spring, 1971), 15-24.

Cost is often mentioned as an important factor in the selection of building materials.²⁰ Sod was free; logs were often free, but were sometimes purchased; sawed lumber was the most expensive whether the lumber was purchased or the settler paid to have the logs sawed. If cost was of overriding importance, one would expect that the dwellings made of the most expensive materials would be the smallest, and *vice-versa*. Such was not the case. The median dimensions of the nearly 1000 dwellings studied were 14' x 16' — identical for log, lumber and sod houses. Those who used free materials showed no tendency to make their living quarters larger. The cost and difficulty of obtaining fuel for heating probably was a more important restraint on size than was cost of materials.

The tradition of "building small," a noticeable feature of the northern plains landscape, was present in the early years. The average dimensions of single-pen pioneer log houses in the Upland South, ranging from Maryland to Alabama, have been estimated at 17' x 20', about 100 square feet larger than the 14' x 16' median for log houses in North Dakota.²¹ This comparison of cool versus cold winter climates reinforces the hypothesis that cost of heating rather than cost of materials kept the northern plains folk dwelling on the small side.

This average size did not apply everywhere in North Dakota. In the Emmons and Mercer county Russian-German enclaves, for example, the median size was 16' x 24'; most of the larger structures there were the sod, house-and-barn combinations. House size distributions were quite uniform in most of the state where Russian-Germans were not numerous.

Fewer than 10 percent of all houses were built with any acknowledged help besides that of family and friends. Nearly half of the homesteaders responded to the question, "Built by _____," with the simple answer, "self." The housing bee of American folklore evidently was not of overwhelming significance on the North Dakota frontier.

Carpenters and masons had plenty of work in towns in the early days, but charged a bit too handsomely for most homesteaders — who often had a decent knowledge of carpentry — to find their services indispensable. In Dickey County during the 1880's, \$15 was the going rate for erection of an 8' x 10' claim shack.²² It is not known if this figure is representative, but it is high enough to suggest that most individuals would probably try "do-it-yourself" instead.

CONCLUSION

The distribution of housing choices on the North Dakota frontier reveals a complex pattern of influences, some owing to environmental factors and some to the traditions and adaptive styles of the pioneers. Comparisons of northern plains

²⁰For example, see Hiram Drache, *The Challenge of the Prairie* (Fargo: North Dakota Institute for Regional Studies, 1970), 38; R. M. Black, *A History of Dickey County, North Dakota* (Ellendale, N.D.: Dickey County Historical Society, 1930), 40.

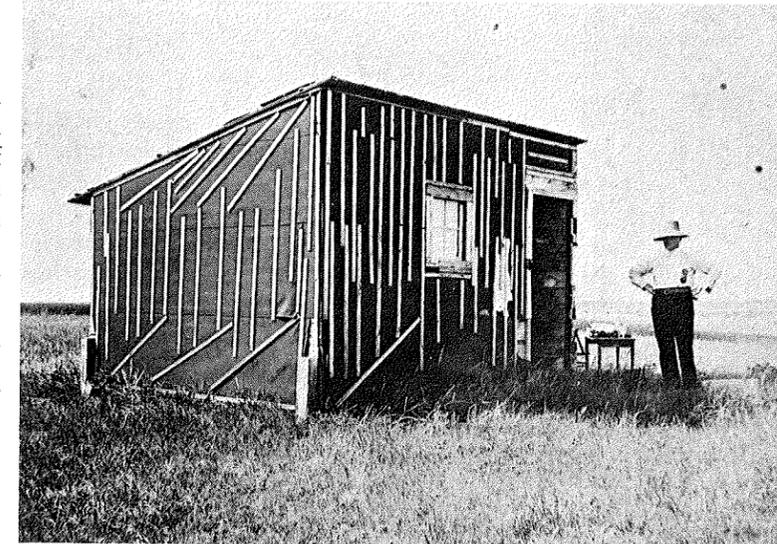
²¹Eugene M. Wilson, "Form Changes in Folk Houses," in H. J. Walker and W. G. Haag, eds., *Man and Cultural Heritage* (Baton Rouge: Louisiana State University, School of Geoscience, 1974), 65-72.

²²Black, *Dickey County*, 40.



Sod home of John Gjesvold family near Nome in Barnes County. The picture by Clinton Johnson was taken in 1887.

—State Historical Society of North Dakota Collection



(above) The homestead shack belonging to I.N. Jones that was located between Harvey and Antelope. (below) A farmstead constructed of logs near Fish Lake in the Turtle Mountains.

—State Historical Society of North Dakota Collection





The frame home of Mrs. Effie Geibel near Pleasant Lake in 1882.

—State Historical Society of North Dakota Collection

settlements with those found to the east and south reveal some similarities, but there are some significant differences.

The sod house frontier theme, often applied uniformly to the Great Plains, does not fit North Dakota nearly as well as it fits the central plains. Log houses were not rarities in early North Dakota. Homesteaders were willing to go relatively long distances to procure materials. The dominance of frame construction was not a simple transfer of European or Middle Western practices; the arched roofs on many claim shacks suggests their origins as portable structures. The fine-scale mosaic of ethnic settlements across the state contrasts with broader-scale variations in the physical environment, permitting the inference that housing choices more often depend on culture than on environment. In general, “preference” may be a better descriptor than “necessity” in describing folk housing practices on the northern plains.

The data analyzed here are a unique and valuable source of information about pioneer life. Many North Dakotans have already found these data useful in tracing family and local histories. Comparable questionnaires do not exist for other states although the spread of oral history projects may make more autobiographical data available. Unfortunately, this will probably not provide detailed, quantitative information of the type collected by the Historical Data Project in North Dakota.



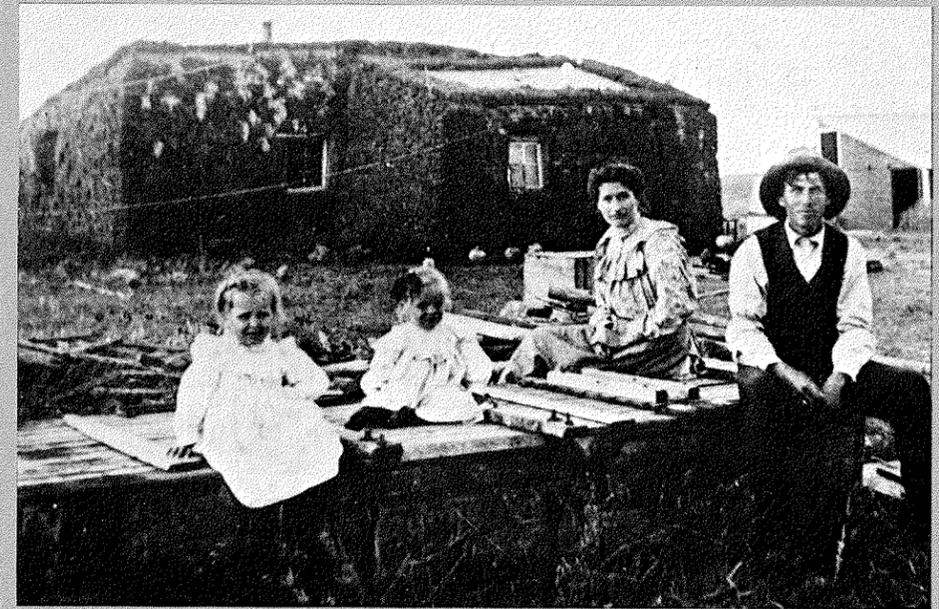
(left) A sod house with a frame lean-to. (above) Jacob Zakopyko’s rammed-earth house was located near Kief in McHenry County.

—State Historical Society of North Dakota Collection



(above) Said to be the oldest house in Nelson County, this log cabin sits on the shore of Devils Lake. (right) Most Dakota pioneers constructed substantial homes as soon as they could afford them. When that time arrived, their pioneer days were over.

—State Historical Society of North Dakota Collection



Mr. and Mrs. Knute Sondral and family in front of their sod house near Turtle Lake.

—State Historical Society of North Dakota Collection



Sod home of John Bakken that was located near Milton, North Dakota, in Cavalier County.

—State Historical Society of North Dakota Collection

