
Of Earth and Stone: Old World Building Traditions in a New Land

by Lauren McCroskey

Beginning in late 1880s, North Dakota absorbed a large population of Germans from the Black Sea region of south Russia who were known as German-Russians, as well as significant numbers of German-Hungarians, native Ukrainians, and Bohemians. Where these settlements took root in North Dakota, the landscape is punctuated by striking reminders of this heritage, including a fragile collection of earthen and stone buildings. The Old World building traditions employed by German-Russian and German-Hungarian settlers are especially well represented and are the focus of this article. Embodied in these humble structures are clues about their ethnic origins, as well as culturally prescribed attitudes toward building materials that reflect an accommodation of traditional values with the environmental realities of the northern plains.

Crumbling and vacant, sometimes only skeletal, the remains of hundreds of earthen and stone dwellings can be found across the prairie. Documentation is sporadic. German-Russian buildings clustered in a relatively small area of southeastern South Dakota have been intensively examined. There has been no systematic, state-wide inventory of North Dakota's vast number of Germanic buildings. Nonetheless, comprehensive inventories of Emmons, McIntosh, and Stark counties, the communities of Goodrich and Denhoff, and random



The roof support beam, or swolok, on this fieldstone structure has survived the decades at the Valentine Hutmacher farmstead in Dunn County. Courtesy of the author.

recordings in the central and eastern part of the state have produced a good representative sampling of remaining buildings.¹

Archival sources and rural housing inventories from the 1930s indicate that many of these properties have vanished in the last sixty years, making a complete assessment of the original building legacy impossible. Often disparaged as primitive and backward by their inheritors, these earthen and stone dwellings have been replaced during the years by modern housing or left to the forces of nature. Heightened awareness and additional inventories of surviving structures are needed to

fully record what remains of this evocative cultural imprint, the origins of which extend back to the European homeland.

The circumstances of German immigration to eastern Europe and the Black Sea region of south Russia are well known in the plains states. The government of the Austro-Hungarian empire recognized the value of having German settlements along their eastern borders as a hedge against further incursions by neighboring Turks, and began a program of German colonization in the Banat region of Hungary in 1711.² Beginning in 1762, Catherine the Great also recruited German colonists, primarily from the southwest provinces of Baden, Alsace, and Wurtemberg, in an effort to upgrade agricultural practices in Russia and to bulwark her country's southern borders with Turkey.³ Lack of productive farmland, fear of military conscription, and religious oppression in their native country made these offers attractive to the German peasantry.

Faced with limited timber resources in much of their adopted homelands, the German colonists had few alternatives to earthen or stone building materials. Sandstone that turned up in the colonists' fields became a prized building material sold for profit or used for road paving. Oral histories frequently mention the employment of German colonists, including children, in local quarries during times of economic duress.⁴ Sandstone slab construction is well represented among many of North Dakota's immigrant groups, but structures built of earth are mostly a legacy of Germans from the Black Sea region and Hungary.

Accounts of these German colonists make only passing reference to the origins of earthen construction practiced in south Russia and Hungary. Sources often suggest that the Germans learned how to build with earth from native Ukrainians and Hungarians, and later found the material ideally suited to the treeless northern plains of the United States.⁵ In view of the cultural



August Mantz home near Center in Oliver County. A settlement period scene shows a traditional house plan with a gabled roof and central chimney. This one is largely constructed of flat fieldstone.

and agricultural skills for which they were recruited, it is unlikely that the German colonists needed much instruction in home building. Although some cultural exchange may have occurred, important archeological evidence has verified the existence of numerous solid earthen dwellings built in Germany as early as the eighth and ninth centuries, leading to the conclusion that the colonists were practicing earthen building techniques before leaving their homeland.⁶ Examples of earthen buildings also survive elsewhere in central Europe, near the German border.⁷

Historical documents, such as an eighteenth-century publication by Ludovicus Reischl, describe four types of earthen systems that predate the German migrations to eastern Europe and south Russia: 1) half timbering with mud infill, 2) sun-dried earthen brick, 3) tightly packed tiers of mud called rammed earth, and 4)

1. A sample of South Dakota's German-Russian buildings is thoroughly examined in: Michael Koop and Stephen Ludwig, *German-Russian Folk Architecture in Southeastern South Dakota* (Vermillion, S.D.: State Historical Preservation Center, 1984). See also, "Icons on the Prairie," by Jackie Sluss, an unpublished manuscript held at the Division of Archeology and Historic Preservation, State Historical Society of North Dakota, Bismarck. Inventories and survey documents for North Dakota properties are also held at the Division of Archeology and Historic Preservation.

2. Michael Bresser, *The Danube Swabians, Biography of a People from Inception to Dispersal* (Philadelphia: Danube Swabian Association, n.d.); Nicholas Engelmann, *The Banat Germans*, trans. John Michels (Bismarck, N.D.: University of Mary Press, 1987).

3. Richard Sallet, *Russian-German Settlements in the United States*, trans. LaVern J. Rippley and Armand Bauer (Fargo, N.D.: North Dakota Institute for Regional Studies, 1974), pp. 9-10.

4. Joseph S. Height, *Homesteaders on the Steppe* (Bismarck, N.D.: North Dakota Historical Society of Germans from Russia, 1975), p.

169; John M. Michels, *Josefvalva* (Bismarck, N.D.: University of Mary Press, 1992), p. 33; Karl Stumpp, *The German Russians* (Lincoln: American Historical Society of Germans from Russia, 1978), pp. 56-67.

5. Sallet, *Russian-German Settlements*, p. 186.

6. Jochen Georg Guntzel, "On the History of Clay Buildings in Germany." Paper presented at the 6th International Conference on the Conservation of Earthen Architecture, Las Cruces, New Mexico, October 1990.

7. Jeffrey W. Cody, "Earthen Walls from France and England for North American Farmers, 1806-1870." Paper presented at the 6th International Conference on the Conservation of Earthen Architecture, Las Cruces, New Mexico, October 1990; in Jeffrey W. Cody, "Earthen Wall Construction in the Eastern United States," (M. A. thesis, Cornell University, 1985), the author discusses farm journals that promoted the use of rammed earth construction for farm buildings.

In the late eighteenth century, French agriculturalist Francois



Based on the Russian prototype, a makeshift dwelling called a semeljanka was built partially underground, walled with clay, and featured an earth, wood or reed roof. The protruding logs formed the roof supports of this partially collapsed semeljanka at the Gross Farm in Emmons County. From the Division of Archeology and Historic Preservation files.

puddled clay, all represented in the Germanic buildings of the northern plains.⁸

Interestingly, despite Reischl's publication, sources on German folk architecture seldom mention earthen construction.⁹ Perhaps the architectural traditions of the peasantry lacked the respectability of other building practices. More likely, these methods escaped documentation because humble techniques, based on the use of mud, were not taught in the technical and trade schools, which were likely to emphasize revered traditions such as timber framing (*fachwerk*).¹⁰

By the sixteenth century, much of the forested land in Germany was denuded. The ruling classes had claimed what remained of the natural forests, thereby removing significant amounts of building materials from the landless peasantry. Partly because of this limited supply of wood, and partly because of the fireproof nature of clay, earthen construction was encouraged as early as

the late seventeenth century in parts of Germany and was eventually employed even in the architecture of the upper classes.¹¹

Although the transfusion of German building traditions to Russia and Hungary is difficult to track, earthen material was clearly a staple for the colonists in their new homelands. In eastern Europe, the first dwelling built by German peasants was a crude, partially dug-out shelter roofed with a thatch of twigs and straw.¹² This *semeljanka*, named for the Russian equivalent, generally featured an unhewn, horizontal ridge beam or pole called a *firstbaum* (or *swolok* in the Russian vernacular). Historical sources posit that Russians taught *semeljanka* construction to their German neighbors. The permanent dwellings that replaced these first shelters were also modest in design and materials but reclaimed the German prototype, incorporating a basic rectangular design and floor plan similar to modest houses of south-

Cointeraux investigated the rammed earth traditions of south-central France near Lyon, and praised earthen building as the ideal solution to sanitary and durable housing for the masses. The French term for rammed earth, *pisé de terre*, meaning "earth pick," is Cointeraux's indication of the hoe or pick used to tamp an earthen mixture into a moveable framework. Cointeraux's fervent belief in the values of rammed earth construction and subsequent publications attracted the most attention in England and Germany where pamphlets described and encouraged the use of these materials. In Germany, efforts to promote Cointeraux's findings were short-lived, but in England, Henry Holland championed Cointeraux's passion for rammed earth, adapting his writings to an English version that was eventually published in the United States. American farm journals, such as the *Prairie Farmer*, even encouraged the use of rammed earth

construction in the 1840s with some success.

8. Guntzel, "On the History of Clay Buildings in Germany."

9. *Ibid.*

10. Jochen Georg Guntzel, personal correspondence, August 1992. "Fachwerk" construction, a system of hewn timbers with an infill of plaster, has always been regarded as Germany's definitive contribution to folk building arts. But while the skillful framing of these buildings was considered a respected craft, the application of plaster daubing between the timbers was a humble finish detail typically undertaken by the building owner, or with the collective efforts of neighbors, much in the manner of American "barn-raising." Clay wall construction practiced by the lower classes was accomplished in a similar manner, as a communal effort.

11. Jochen Georg Guntzel, *Zur Geschichte des Lehmbaus in*

central Germany.¹³

In some German-Hungarian settlements, the Austrian Imperial government supplied house plans, but, in most cases, the Germanic practice of arranging rooms along a single axis was retained. The permanent dwelling in some German-Hungarian villages took shape as a *stampfhaus*, or rammed earth structure, consisting of walls of tightly packed clay laid up in wooden forms.

Evidence of the German proficiency with earthen construction is found in the reaction of native Romanian-Hungarians to the *stampfhaus* method used in the German colony: "With disbelief, they observed the [use of rammed earth in] home construction, as they themselves built their own homes almost exclusively of wood. . . The people [from Budinz and Iktar] believed these houses [earth] to be useless as they had no windows or doors . . . they [the German settlers] began to hack out the openings for the doors and windows in the dried walls using hatchets and wood axes."¹⁴

After approximately two centuries in their adopted homelands, the German colonists found many of the original privileges revoked, the farming options limited, and the arguments for emigrating once again compelling. Extolled by promotional literature and railroad settlement schemes, the untilled plains of Dakota Territory offered fresh opportunity and freedom from the cultural and economic hardships that had followed the colonists throughout Europe. Unique building traditions were among the many cultural symbols they brought to America.

The arrival of German-Russians in North Dakota was an outgrowth of the initial colonization near Yankton, South Dakota, in 1879. South-central North Dakota received the first settlements in the 1880s, with slightly later migrations into the north-central and western areas of the state in the 1890s. Germans from the Banat region of what is now Hungary-Romania and smaller numbers of ethnic Ukrainians and Bohemians came to western North Dakota beginning in the mid-1880s.

While good, available farmland attracted immigrants to the state, less satisfactory was the federal settlement law, which required individuals to live on large parcels



A man and his horse mixing mud to be used for plaster in western North Dakota, ca. 1900-1905.

of land where frequent social contact and the cohesion of traditional village life were sharply diminished from the European standard. Scattered throughout the countryside on their individual homesteads, the German immigrants were sustained by their strong allegiance to language and religion, while their churches, German-language newspapers, and sprouting towns afforded the needed social exchange. Most communities took on the character of every midwestern settlement of the period, with grid-like platting, commercial architecture, and residential streets lacking strong cultural attributes. Outside the urban framework, however, plain but distinctive houses and outbuildings constructed by immigrants from Russia and eastern Europe proclaimed the enduring spirit of the Old World.

With the exception of western North Dakota, where German-Russians, as well as their German-Hungarian, Ukrainian, and Bohemian neighbors built with locally available stone, earthen architecture was often used by German-Russians throughout the state. Three general

Deutschland (doctoral dissertation, Universitat des Landes Hessen, 1985).

12. Height, *Homesteaders on the Steppe*, p. 135; John M. Michels, *North Dakota Pioneers from The Banat* (Bismarck, N. D.: University of Mary Press, 1992), p. 137.

13. Joseph S. Height, *Memories of the Black Sea Germans* (Chelsea, Mich.: Associated German-Russian Sponsors, 1979), pp. 237-239.

14. Michels, *Josefalva*, p. 31.

15. See also Koop and Ludwig, *German-Russian Folk Architecture*.

16. For floor plans and diagrams, see Koop and Ludwig, *German-Russian Folk Architecture*, and Sluss, "Icons on the Prairie."

17. John P. Bluemle, *The Face of North Dakota, Revised Edition* (Bismarck, N.D.: North Dakota Geological Survey, 1991). The Hebron Brick Company, which produces face brick and building tile, has

been in operation since 1905.

18. Christopher Martin, "Skeleton of Settlement: Ukrainian Folk Building in Western North Dakota," in *Perspectives in Vernacular Architecture III* (Columbia: University of Missouri Press, 1989), pp. 86-98.

19. See "Czech Folk Architecture of Southeastern South Dakota," National Register Thematic Nomination, 1986.

20. David Murphy, "Building in Clay on the Central Plains," in *Perspectives in Vernacular Architecture III*, pp. 74-85.

21. Richard D. Sheurman and Clifford Traftzer, *The Volga Germans* (Moscow: University of Idaho Press, 1985), p. 141; Jennifer Eastman Attebury, *The Diffusion of Folk Culture as Demonstrated in the Horizontal Timber Construction of the Snake River Basin* (doctoral dissertation, Indiana University, 1985).

types of earthen construction, with a number of variants, predominate in Germanic buildings found in North Dakota and throughout the northern plains.¹⁵ One method of earthen building used native clays mixed with manure and water and fortified with straw or other stabilizers. The mixture was shaped into large, rectangular blocks or pressed into wooden molds that were left to sun dry, without firing. These earthen blocks, called "batsa" bricks in some regions of the Dakotas, are closely related to "adobe" materials found throughout the world.

Another method, known as rammed earth, involved the tamping of a similar earthen mixture between forms, much in the manner of modern, poured-in-place concrete construction. Wooden frames, or shutters, were raised to receive the next layer of clay, thereby creating earthen tiers that were whitewashed with a clay plaster. In a closely related practice, tiers of "puddled clay" were laid up without the benefit of a form. Puddled clay walls, at times barely distinguishable from rammed earth construction, often incorporate rounded field cobbles or stone slabs. In some dwellings located in Mercer County, North Dakota, fieldstone was generously dispersed throughout the walls to such a degree that the mud mostly serves as a heavy mortar.

Like the first homes of their forebears in eastern Europe, the Germans' initial construction on the northern plains was a crude hut, built partially underground and thatched with twigs, reeds, and mud, their version of the Russian *semeljanka*. Vestiges of the *semeljanka* are evident by the ridge pole that protrudes slightly from the gable peak. The ridge pole is typically present in houses featuring shallow roofs and in instances where gables are constructed entirely of stone or earth. Other dwellings exhibit features of Germanic origins, such as the longitudinal ceiling beam that supports the floor joists of the attic story.

The most identifiable features of the German-Russian and German-Hungarian buildings on the northern plains include a single-story, rectangular form with gabled roof, linear floor plan, attic-story windows, central chimneys, and a projecting entry called a *vorhausl*. The *vorhausl* itself has either a gabled or shed roof, with the entrance door on the front or side. A principal entrance at the side of the house, or even at the rear, observed in some semi-urban settings [i.e., Dickinson, Goodrich, and Denhoff] is consistent with the German and Russian antecedents.

A linear floor plan of two to three rooms predominates, while two-room or "double pile" plans are less common.¹⁶ Another floor plan found throughout the North Dakota buildings is a gabled "el," some of which appear to have been the original dwellings later absorbed by a larger house attached perpendicularly.

A detached, one-story, summer kitchen with gabled roof often accompanies the house. Also present are houses with steep, hipped roofs, often sprouting several dormers, which have possible origins in the Russian landscape. Some variations on these traditional themes



Street in Zeeland, McIntosh County. The central location of the chimneys and the traditional use of the fence to define the yard surrounding the house provide visual evidence of a German-Russian community.

built between the 1880s and the 1920s reflect an assimilation of late-nineteenth-century American design trends. Found primarily in the south-central region of North Dakota, these buildings reveal that tenets of contemporary American design were quickly adopted, even on remote parcels. Rarely present in North Dakota but well represented in the South Dakota sample is the house-barn combination, a continuous linear plan articulated by an offset or break in the gable and contrasting window and door openings.

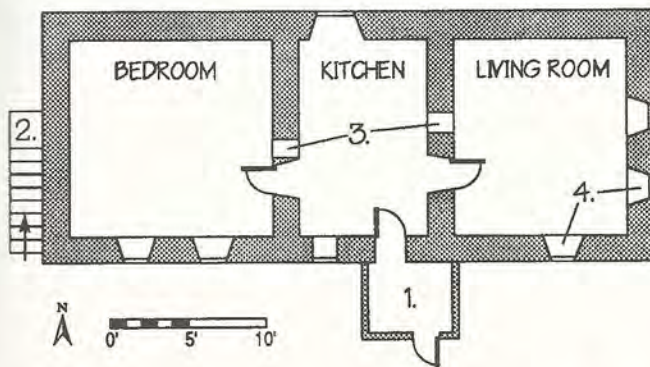
Although historic photographs verify that whitewashing the exteriors of earthen buildings was practiced during the settlement period, few examples of earthen walls finished with traditional mud plasters survive in North Dakota today. The hardiest survivors are buildings framed and clad with pre-cut lumber. While traditional exterior plasters typically combined fresh clay and additives such as cow manure, diluted cream, and straw, cement was readily available by this period and was often a plaster substitute.

House interiors blend both traditional and contemporary American elements. Plastered wall surfaces are not always uniform and exhibit a slight undulating quality created by the earthen and stone materials. In some examples, a characteristic German bake oven/chimney of conventional or earthen bricks served dual purposes of cook stove and fireplace on respective sides of the wall. Deep window wells, mail-order doors from building suppliers, hand-wrought latches, decorative stenciling, and vivid blues and yellows are other typical interior appointments.

In North Dakota, two-story Germanic buildings are uncommon. Overt, stylistic tendencies and surface embellishments are also rare, although some subjects display late Victorian ornamentation and period details. Most accounts about construction of these buildings relate that pre-cut lumber, though available, was seldom used due to the high cost and was employed only sparingly for gables, roofs, and windows. Landscaping

is often minimal, sometimes evident only in a single tree planted close to the house. In some North Dakota towns, the European practice of low, wood slat fencing defines narrow lots and enhances privacy.

German-Russian attitudes about building materials are most explicit in structures that blend contemporary American building practices with folk traditions. In North Dakota, it was common practice to use sun-dried brick, mud brick, and rammed earth, with dimensional lumber, while earth was used less often—in Old World fashion—as a load-bearing material. Both the rammed earth and mud brick systems often incorporate a series of horizontal and vertical boards, between which the builders packed earthen material. Horizontal siding was then nailed to the integrated “studs.” Brick dimen-



Traditionally, a German-Russian home was a stone-or earth-built, single-story, rectangular structure, with a gabled roof and two or three rooms, running on a linear east-west axis. Other distinctive features included: 1) the *vorhausl*, which usually faced south; 2) an exterior staircase to the loft located on a gable end, which was occasionally replaced by an interior ladder-like staircase; 3) chimneys and stoves centrally located at interior walls; the kitchen chimney was usually supported in a stelage or storage cabinet; other chimneys were usually supported on wooden brackets on the walls, and 4) a few, tall, narrow windows with deep interior sills and beveled walls, allowing light to reflect around the room. Drawing by Brian R. Austin. Right: The Ludwig and Christina Welk homestead near Strasburg shows a variation of the traditional German-Russian floor plan with the *vorhausl* near one end of the house instead of centered. It is constructed of earthen bricks and covered with horizontal clapboard siding. The famous bandleader, Lawrence Welk, is the infant on his mother's lap in this 1903-1904 photograph, courtesy of the Welk family. From the Division of Archeology and Historic Preservation files.



sions and bonding patterns are remarkably uniform among these subjects—most units measure six inches by twelve inches and are laid up in a common bond.

There was little structural role for earthen materials to play when American balloon frame construction was used. Mud bricks, for example, do not appear to have reduced material costs, since the amount of lumber needed for framing and siding remained the same. It appears that, among builders, either the insulating property of clay was favored, or the added weight of the earthen bricks was valued as a safeguard against the buffeting power of prairie winds. Regardless, these German-Russian buildings convey a prudent adaptation of traditional materials, an assimilation of American building practices, and, perhaps, a desire to conceal the humble materials underneath.

Dwellings on farmsteads in North Dakota show the greatest ethnicity of design and materials by far, while the majority of barns and outbuildings reflect American conventions of the period. Derivative of broader trends in farm building design, most are framed and sided with pre-cut lumber and feature gambrel, gable, or gothic arch roofs. Improved barn designs and the widespread availability of farm building catalogs and mail-order plans after 1910 no doubt superseded traditional ideas about barn construction. Viewed side-by-side, traditional dwellings and those which bowed to modern invention such as barns illustrate the settlers' determination to express their cultural identity in their homes.

Besides national trends in architectural design and construction, another variable that caused immigrants to modify their traditional building practices was the character of the environment where they chose to

Right: Unusual for earthen brick structures because of its second story, this building in Emmons County exhibits the integration of precut lumber with earthen bricks. Note the use of horizontal lumber plates at every seventh course of brick. From the Division of Archeology and Historic Preservation files.



Left: In a region of plentiful stone, the Semevolos farmhouse in McLean County is an unusual example of rammed earth construction. Note the characteristically Russian, vented, hipped roof, an Old World building tradition not often repeated in New World construction.



Left: Crumbling plaster reveals a puddled clay wall resting on a slab stone foundation. This example is one of three earthen building techniques dating back to eighth-century Germany. Above: The puddled clay technique involved layers of earth poured in forms between lumber studs. Both photographs from the Division of Archeology and Historic Preservation files.

settle. An apparent preference for stone construction in some parts of North Dakota may be attributed to the geology of the local area. A discernible pattern can, in fact, be observed across the state. Where good building stone prevails, German-Russians employed masonry wall construction. Where stone materials were restricted or may have been perceived as less desirable (i.e., harder, glaciated fieldstones such as granite or gneiss), earthen building techniques were used instead.

Walls of earthen brick, puddled clay, and rammed earth are found predominantly in central North Dakota. They are much less common in the architecture of German-Russians and other ethnic populations in western North Dakota. In the west, exploitable clays are widely available and have been the source of commercial brickmaking since the turn of the century.¹⁷ In spite of favorable clay geology in this region, however, German-Russians as well as German-Hungarians and Bohemians chose to build with undressed slabs of silicified peat, quartzite, and sandstone found in their fields or extracted from nearby outcroppings. The influence of regional masons may account for this uniformity in construction. It is also possible that stone materials, which offer the inherent qualities of permanence and durability, may have been valued as a means of projecting an improved economical status.

Ukrainians who settled in western North Dakota and elsewhere in the northern plains rarely practiced the methods of mud brick and rammed earth construction employed by North Dakota's German-Russians. In Billings County, Ukrainians developed a distinctive method of "post-in-earth construction"—a wall system of vertical, unhewn, or rough-hewn posts with an infill of twigs, straw and mud.¹⁸ The practitioners of this technique scavenged every useful lumber material, including discarded railroad ties. Bohemians from western Czechoslovakia are also represented in the building record of the Dakotas.¹⁹ Known for an established masonry tradition, Bohemians in western North Dakota built mostly with stone—only a few examples of rammed earth and mud brick exist.

Other German immigrants from the Volga region of Russia are also known to have used earthen materials after coming to the central plains.²⁰ The use of the Russian *semeljanka* by Volga Germans who settled in the western United States is consistent, even in the semi-forested regions of eastern Washington and southeastern Idaho. In these settlements, however, subsequent earthen construction was mostly unnecessary due to accessible and abundant timber resources, and the immigrants' quick adaptation of contemporary building forms and styles is apparent. Conversely, earthen construction is known to have been used by Volga Germans settling in the arid regions of southeastern Idaho where timber was again limited.²¹ Environmental factors, as well as cultural templates, were clearly at work in the building decisions of German-Russian immigrants who settled throughout the United States.

North Dakota's unrivaled collection of earthen and stone buildings constructed by ethnic Germans and eastern Europeans is dispersed in a state with a mostly uniform topography and vegetation. This consistency is overlaid with a subtle, but varied, palette of regional building materials. As cultural expressions, these dwellings provide an important commentary on ways immigrants have retained and modified cultural principles in the challenging landscape of the Great Plains. Endangered by weather and neglect, these vulnerable buildings and the information they contain will soon return to the soil, leaving many questions about their cultural origins unanswered. ND

About the Author

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Not only weather and abandonment, but livestock rubbing against delicate plaster and aging earthen walls also pose threats to these ancestral buildings.

