

# HORSE HIGH, SHEEP TIGHT, AND HOG PROOF



The Stone Walls of Dutchess County, New York

8

*Cover:  
Detail, stone bridge over  
Crum Elbow Creek near  
Vanderbilt Estate, Route 9,  
Town of Hyde Park.  
Photograph by Douglas  
Baz. Collection Dutchess  
County Department of  
History.*

# HORSE HIGH, SHEEP TIGHT AND HOG PROOF

The Stone Walls of Dutchess County, New York

by

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# INTRODUCTION

My first encounter with stone walls came as a child living in what then was country, in the Town of Hyde Park. The house where we lived was only a short distance away from endless woods and open spaces in which I and my young playmates were free to wander for hours at a time while our mothers were absorbed in housewifely duties.

These fields and woods were crisscrossed by stone fences that we children saw only as an impediment to our explorations. These were not mere stone walls but mountains to be conquered, wherein lurked deadly snakes, the wild chipmunk, spiders and other nasty creatures and the ubiquitous poison ivy. Some were surmounted by barbed wire. Not to be put off by such insignificant obstructions, we always found a way to get over, under or around the barriers to that beckoning horizon beyond the next field, the lair of the Giant Red Faced Farmer whose thunderous voice sent us and his cows scurrying. Flight ended safely as we ducked down on the opposite side of the wall which now protected us from the angry farmer, still muttering as he rounded up his wandering stock. When the scabs healed from the rashes and scratches and the frightful memory of the farmer's voice had faded, we looked for another route, in another direction, for more stone walls and other fields and wooded glades to explore and conquer.

Stone walls have been imbued with such romance for centuries. They conjure up visions of castles and territorial rights. Those who build them are endowed with virtues of strength, strong will and sense of

purpose . . . heroic qualities.

I watched my father build a stone wall from scratch. In the late 1930s he and my mother decided to build themselves a house and Pop wanted a stone wall and steps leading up to the front entrance. The house was built on a hill and the hill was of solid rock, as is common in many parts of Dutchess, so there was raw material in quantity. He had never built a wall before so he talked to a friend who was a mason and asked him for some pointers. Since my dad was neither a competitor nor a prospective customer, his friend gave him some help and then left him alone. It took Pop two years to finish the wall and one can see in it his steady evolution as a craftsman. He was proud of that wall as well he should have been. It was built into and curved around a hill, with one end about eight feet high. It flanked steps that led up to the front of the house and to the front door, diminishing as it rose to the crest of the hill.

That wall was a beauty. Fifty years later it still is.

Pop built other structures of stone as a hobby on his small piece of property, but none as impressive to me as the first. Like a good many folks in Dutchess, he really liked stone walls.

In a county like Dutchess, with so much stone around, it is a natural building material that we have been working with for a long time. You don't have to be wealthy to use it, but you have to be sensitive to it as a material and as part of an environment. You have to have respect for its virtues and limitations. The successes of those stone wall builders past and present



*Mile marker, Albany Post Road, Hyde Park area.  
Drawing by David Greenwood for the Dutchess County Department of History.*

who have understood how to use the material within this environment is there for us to see in every part of the county.

Moreover, the stone walls of Dutchess are finally becoming recognized as an important part of our cultural heritage. However, it is a more fragile component of that heritage than we might think.

The stone fences that crisscross the county, demarking old patent and boundary lines, enclosing farmers' pastures and fields, outlining and leading to great estates, protecting church yards and lining historic roadways are imperiled. The old dry walls are in disrepair, major portions of the walls along roads have been vandalized or the rock stolen, automobiles have knocked them down and sections of rubble-filled estate walls have simply fallen down, the victims of weather and time. Land in rural areas, newly opened to development, has been randomly bulldozed without regard for the meaning or value of the walls. The day when every farmer repaired his own walls is coming to an end. The day when there were local wall builders in every community or as part of every large estate staff is also at an end.

While there is little that can be done about accident or the damage done by time and weather, there is something that can be done about two major threats to the walls — increased development and the loss of skilled craftsmen. These can be staved off only with one weapon . . . knowledge.

Dutchess County Landmarks Association began inventoring the architectural resources of commu-

nities in Dutchess County in 1970. Among the important structures listed on the inventories were stone walls of all types.

Almost twenty years ago, as a member of the Hyde Park Visual Environment Committee, I saw a small group of interested community members work hard to protect the walls leading into their hamlet. They inventoried the walls, found out who owned them and had responsibility for keeping them in repair and identified laws that applied to them. They reported their findings and prepared educational materials for the public. Over a series of years with grants from New York State Council on the Arts, Gannett and other foundations, they repaired sections of the walls and taught local youths the craft of dry wall building.

Preservation efforts on the part of other area environmental and historical institutions have brought some help and enlightenment to county residents.

The recent cultural resources inventory undertaken by the Dutchess County Planning Department holds out additional hope for those who wish to protect the walls from further depredations. As the information from the inventory is transferred to official maps there will be a record of the most important walls countywide available to planners and to the general public.

There is another protection that we have also not considered: historic landmark designation. Such a step can only be taken by a community convinced that it has a major role to play in the protection of a dimin-

ishing resource. Historic landmark designation, more than a preservation tool, is a way of calling attention to the best of our county's attributes. It says that we know what we have and are prepared to show it in its best light.

In 1987, as Historian for Dutchess County, I was granted funds by the New York State Council on the Arts Folk Arts Program, directed by Robert Baron, to conduct a project in 1988 on stone walls of Dutchess County from the perspective of their importance as a folk craft — part of a long tradition of building and working with specific materials within a community. A fine team consisting of Dr. Bruce Buckley, folklorist and former dean of the Folk Arts Graduate Studies Program at Cooperstown, Donald Mc Ternan, architectural historian and curator at the Roosevelt-



*Section of the wall marking the 17th century Rombout Patent boundary, Stringham Road, Town of LaGrange. Collection Dutchess County Department of History.*

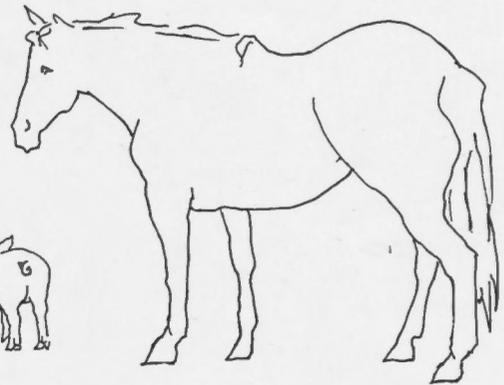
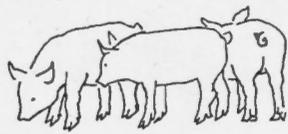
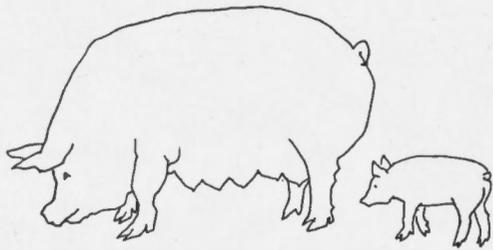
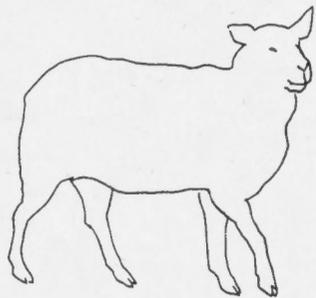
Vanderbilt National Historic Sites in Hyde Park, and Douglas Baz, a photographer who teaches at Bard College, have helped me to see more clearly the richness of our stone wall building tradition. Stephanie Mauri, director of Dutchess County Landmarks, provided informal but invaluable clues as to where the various types of walls might be found. Historians in the towns, staff at state, regional and national historic sites and individuals by the score have come forward to add their advice and send us on to the "experts" who have built and continue to build our local walls. Materials loaned by Patricia Weber, who directed past Hyde Park Visual Environment Committee efforts to preserve stone walls, were of immense help to our research. This has been a real community effort.

This leads back to the beginning, and it has to do with our feelings and attitudes about stone walls.

I still love stone walls as much as I did when I was a child . . . as much as my father did when he built his own walls . . . as much as my own sons do who now are building walls on their property.

I hope that the booklet which you are about to read convinces you that Dutchess does have an important historical and cultural resource in its wonderful and richly varied stone walls. I hope that it also convinces you that we should not allow it to be lost.

Joyce C. Ghee  
*Dutchess County Historian*



# HORSE HIGH, SHEEP TIGHT, AND HOG PROOF

Dr. Bruce R. Buckley  
Architectural Folklorist

# FOREWORD

When an old-timer from the area was asked what makes a good fence, he replied, "It's got to be horse high, sheep tight and hog proof." This traditional formula for the stone wall mason has been passed down from generation to generation as a yardstick to judge his work. Much of what the stone mason knows about building he learned by observing other masons and listening to their instructions. This project of the Dutchess County Department of History is based on the oral history of stone wall construction as practiced by these local masons.

The craft of stone wall masonry is an ancient one. Since prehistoric times stone has been used for protective walls and buildings. In modern times new techniques of construction and exotic building materials have been developed and traditional stone construction has almost been forgotten. What was once a skill every farmer of the area practiced has become a lost art. Today this art is practiced by only a few masons and their expertise is eagerly sought by those interested in maintaining the old traditional stone walls.

Today, the stone wall masons learn their art in two distinctive ways: the formal process and the folk process. The formal process of learning involves a formal educational situation where the student reads about masonry and related information and is apprenticed to a master mason whose responsibility is to teach him the craft. The folk process of learning involves the everyday observation of a mason while practicing his craft. As a member of the mason's

group, the new mason slowly learns his skills by observation and imitative practicing until he masters the craft.

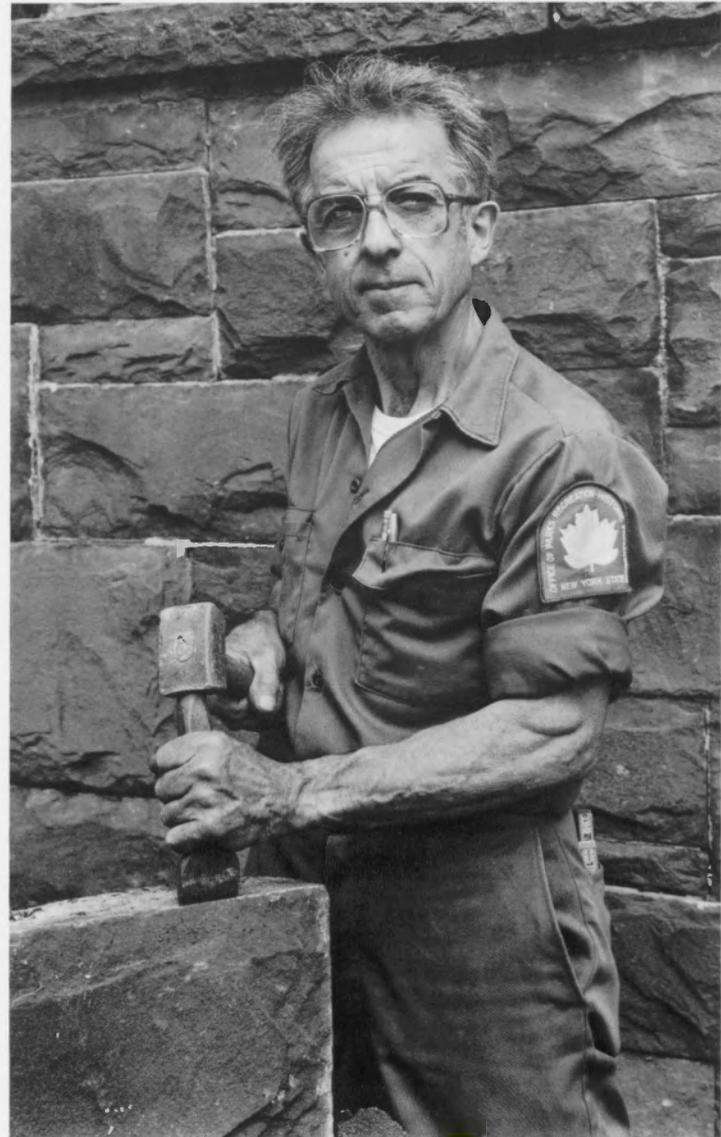
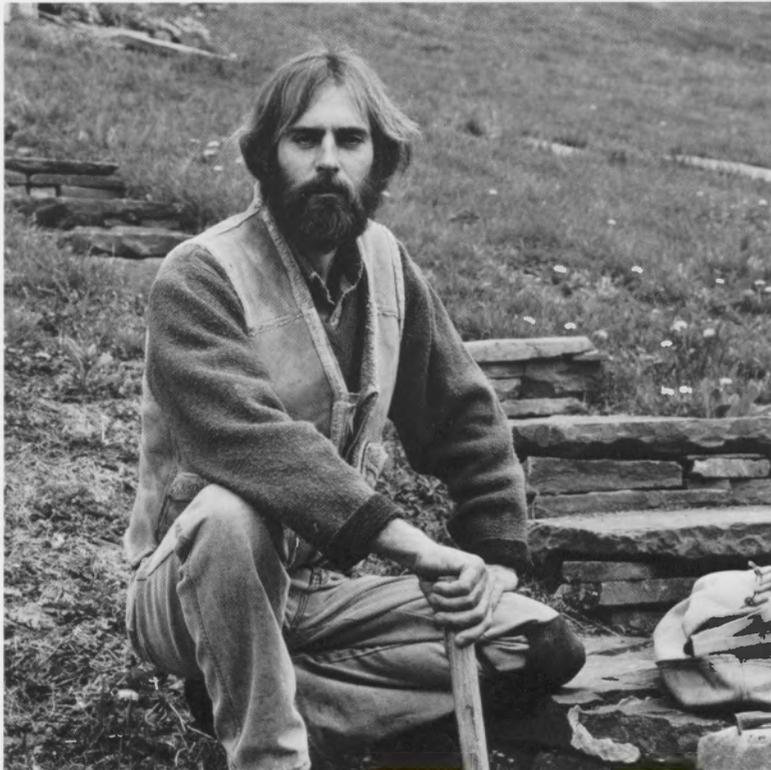
The stone masons interviewed for this project are mostly folk craftsmen who have learned their skills by working with their fathers and grandfathers. Only one mason had formal training in stone wall construction. The ethnic background of the masons was about evenly divided between Yankees and Italians. Historically, these two groups were the major stone wall masons of the Dutchess County area.

This project is only a small sample of the stone wall construction in the area. It is hoped that it will serve as a stimulus for others to continue the field research and find more traditional masons active in the county. This booklet is dedicated to those masons who gave their time because they feel deeply that stone walls of Dutchess County are an important part of our history and need to be restored and maintained for future generations.

Dr. Bruce R. Buckley  
*Architectural Folklorist*  
Cooperstown, New York  
December 1988

*Fred Steuding (left),  
mason in the Anglo/  
Yankee tradition.  
Collection Dutchess  
County Department of  
History. Photograph by  
Douglas Baz.*

*Joseph Sacco (right),  
mason in the Italian  
tradition. Collection  
Dutchess County  
Department of History.  
Photograph by  
Douglas Baz.*



# INTRODUCTION

*Erecting new fences and repairing of old ones, . . . is something that demands the vigilance of the farmers, from the commencement to the close of the year. (1860)*

Fences on the landscape have been an integral part of American history from its beginning. Fences helped define a family's land; something that belonged to them, to work for, to fight for and to pass on to the next generation — the primary reason many left their old way of life to come to the New World. The fences found in America have their origins in Europe where they were not found in such abundance. In the Old World few individuals owned their own land and fencing was not common in many areas. The Dutch had few fences except as protection of gardens from animals. County by county the English agricultural land system was in the transition from open common fields to the enclosure of land. The use of fences depended on which area of the British Isles you came from and when you left. Most of the Southern Germans were still living in a feudal system and there wasn't even a word for "fence" in their regional dialect. Yet in the New World the ubiquitous fence, stone or wood, covered the landscape and European travelers were dismayed by them. Isaac Weld wrote of his travels in 1795:

*With regard to American landscapes in general, it is to be observed, that their beauty is much impaired by the unpicturesque appearance of the*

*angular fences, and the stiff wooden houses, which have at a little distance a heavy, dull, and gloomy aspect.*

Why were fences so important to the early settlers in America when they were not in Europe? Primarily fences provided a sense of stability and permanence in a new world which was dangerous and uncertain for the early settler. The forests, which surrounded their small clearings, were dark, full of wild animals and possibly Indians. Fence enclosures provided a psychological, if not physical, barrier between the farmer and his hostile world. Fences were also a symbol of possession. It was the first time most new world settlers owned their own land. They were proud of this ownership and built fences to mark the boundaries of *their* land. This desire to own your own land has remained one of the cornerstones of the American dream.

## The Old World Fence

The word "fence" is derived from the Latin "fendere" meaning to ward off or to defend. It seems unbelievable that the great walls which once defended castles and cities in the Middle Ages evolved into the low decorative borders around grandmother's flower garden. It is true that our fences are no longer defenses against our human enemies; however, they are still more than decorative.

*Single, Yankee rubble wall, Bentley Lane, Town of Stanford. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



The history of the fence actually revolves around warfare between two major kingdoms: the animal and the vegetable kingdoms. Animals will always win this war unless man intervenes and defends the vegetables. In the early days of agriculture, the animal was the most important part of man's economy. Animals were not only a part of the food chain, but provided power and transportation as well. In many areas they were allowed to roam free in a common community herd and forage their own food. If you wanted to protect your garden and crops you were responsible for "fencing out" the animals. This became part of English common law and was accepted in the American Colonies.

*Every Person interested in the improvement of Common fields enclosed for Corn or other Necessary use shall from time to time, make and keep his part of the fence Sufficiently strong and in constant repair, to secure the Corn and other fruits therein, and shall not put, cause or permit any Cattle to be put in so long as any Corn or other fruits shall be growing or remain upon any part of the land so Enclosed . . . (Duke of York Laws, 1665)*

With the growth of non-agricultural cities and towns, vegetable crops become more important to the economy. Laws were passed requiring animals to be "fenced in" to protect the crops. This conflict between fencing in and fencing out extended to the cattle

ranches in the West, culminating in the 19th century Range Wars and inspiring the popular Texas song, "Don't Fence Me In."

## Fence in America

The fence served many functions in early American farm life. Fences protected crops from nature, the snow drifts of winter and the winds of summer. They were an economical method of using the materials which resulted from clearing the land and practicing the traditional folk wisdom "waste not, want not." Most importantly, however, fences represented order.

*There is nothing can give a man, that only travels through a country, so bad an opinion of the husbandry of it, as to see two circumstances: first the fences in bad order; and secondly, the corn full of weeds. (1775)*

Fences maintained in good order beautify an area, while ill-kept fences are an eyesore and blight on the landscape. Nothing distinguishes a good farmer from a bad farmer quicker than the condition of his fences. In addition, as the famous poem celebrates, a well-kept fence means a good neighbor, someone who takes responsibility for himself and his community. Therefore, a good fence enhances the reputation of the landowner as well as the value of his land.

*Single, non-fence retaining wall, Fiddler's Bridge Road, Town of Clinton. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



*Enclosures throughout estates, in the present improved conditions of agriculture prevent the trespass of man and beast, shelter corn and cattle against some inclemencies of weather, afford flocks protection and peace while they are feeding or at rest, beautify the face of the country, enhance the value of land, relieve the farmer's mind from care as to the safety of his crops and flocks, and impart confidence to the landlord that, so long as he maintains them, they will secure the conservation and even the improvement of his estate. (1848)*

## Fence Types

The American fences of the 19th century were primarily made of wood. Vertical palisade and horizontal post fences were made of logs. Logs were split to make stake and rider and single or double post and rail fences which became the symbol of the American farmer conquering the wilderness. Twigs and branches were woven into wattle fences and stumps were stacked along the river to form a barrier fence. Sawn lumber was made into solid board fences, spaced to form pickets or horizontal animal fences and interwoven into lattice work.

Occasionally other construction materials were used for fencing by our ancestors. Brick was used especially for garden fences. The type of fence was often determined by the area of the country. Sod was used in the Western plains and adobe in the South-

west. The Northeast was known for its glaciated areas where stones of many types and sizes were readily available for the building of fences. Dutchess County is a part of this area of glaciated and weathered fieldstone and much of the stone construction of the area uses these types of stones.

*Double wall, Fiddler's  
Bridge Road, Town of  
Clinton. Collection  
Dutchess County  
Department of History.  
Photograph by  
Douglas Baz.*



# STONE WALLS OF DUTCHESS COUNTY

## Early Walls of Dutchess County

Permanent settlement of Dutchess County did not really begin until the late 17th century. The newly formed patents from the English Crown were controlled by New York City merchants, a few Dutch large farm owners and Dutch patroons who were intermarried with English landed families. The county's growth was slow until the middle of the 18th century. The earliest extant buildings are of stone and date from the 1730s and dry stone wall foundations of early houses, barns and mills are still found on the landscape.

The Albany Post Road, which began as the King's Highway in 1703, ran from Albany to New York City. Along this road, now Route 9, may be found the remains of many of the early stone fences of the county. This major colonial highway was also marked with milestones after 1797. Twenty-two of the original forty reddish sandstone markers in Dutchess County have been restored.

Early stone fences in the county were probably the results of clearing the fields of stone to plant crops. No skill was necessary to make these rubble walls. From 1685 to 1731 a series of patents were issued by the Crown in the newly formed County of Dutchess. Stone markers were a common English system of making boundary lines between properties and were probably used for marking patent lines. Later after the land had been surveyed these marker stones became the basis for stone boundary fences or

patent walls. Although it is difficult to date a stone wall, recent research by LaGrange Historian Emily Johnson has located sections of these patent walls and a new historic marker, erected in 1985, marks a section of the old Rombout-Beekman Patent wall. Stone boundary walls have endured the ravages of time and are still accepted as legal boundaries when settling property disputes. Although many of these "old" fences may not be original, they are considered as original despite their constant repair through time. They are much like George Washington's legendary hatchet which may have had three new cutting heads and ten replacement handles but still is the "original" hatchet.

Stone field fences are the most abundant of the old walls of the area. These stone walls delineated the corn fields, pastures, gardens and farmlanes. On a typical farm a farmlane defined by stone fences would run from the barnyard to the pastureland. At the end of the lane would be a barway or gate that led into a holding area. This area was usually rocky and unproductive and was given the name "Devil's Half Acre." From this area the livestock could be turned into one of several fields for pasturing. Other stone walls protected the cash crops of the farmer as well as enclosing the barnyard and animal pens.

Modern agriculture technology is sometimes hampered by these small fields surrounded by stone and the farmlanes are too narrow for the tractor and other machinery. The farmer is slowly getting rid of his stone walls to make way for progress. It is not

*Field mortared, wet wall,  
(fake dry wall) Route 343,  
Town of Washington.  
Collection Dutchess  
County Department of  
History. Photograph by  
Douglas Baz.*



always as easy as it might seem. One story tells of a farmer having a large hole dug to bury his stone fences. After the workmen had completed the hole there were so many stones from the digging that there was no room for the fence stones. Today many farmers are actually giving their stone fences to anyone who will carry them away.

Farms were not the only areas surrounded by stone walls. The towns and villages used stone walls around their houses, churches, cemeteries and public buildings. These walls not only defined the property but protected the areas from animals and other intrusions. At a Town meeting in Hyde Park in 1830, the town passed an ordinance which defined a proper fence as:

*. . . a substantial stone wall of the full height of four feet shall be a sufficient fence, and that a stone wall less than four feet high shall be a sufficient fence if there is one rail laid on the wall and with stakes and rider of the height of four feet and a half, that no ram or boar shall be suffered to run at large from the first day of August to the tenth day of November, under the penalty of Five Dollars. That no hogs nor pigs shall be found going at large, contrary to the foregoing regulations. . . .*

Fence viewers were appointed in every town to inspect fences, enforce fence laws and settle boundary disputes. They were compensated for their work in

the Town of Hyde Park in 1830 at one dollar a day.

During the late 19th and early 20th centuries, Dutchess County became an area of large estates for many wealthy families. Elaborate stone walls surrounded these estates and many garden walls and stone pathways dotted their landscape. Estate walls were usually higher than field fences and were constructed of quarried stone or mortared fieldstone. Fieldstone walls were occasionally veneered with quarried bluestone from nearby Ulster County. These high walls were entered through large stone pillars which held decorative iron gates. It took many masons to build these estate walls and some remained in the area after their construction to help maintain the stone construction and build other stone structures and walls in the County.

## Stone in Dutchess County

Stone was recognized as one of the early natural resources in Dutchess County. The Natural History Survey of New York of the late 1830s listed many local sources for construction purposes. These resources included slate for roofing, granite and marble for building and graywacke, a type of sandstone suitable for stone walls and foundations. Nine quarries were in operation in the County at this time and five locations were indicated as usable rock formations for stone walls.

*Italianate wall mortared with red grout, Vanderbilt Lane, Town of Hyde Park. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



Stone walls are made from both fieldstones and quarried stones. Due to the weight of stone, the stone walls on most farms were made of materials found on the property or very near by. One of the few studies of stone construction in Dutchess County, "Stone Wall Inventory of the Town of Hyde Park" prepared in 1983, reported the native stones used in the fences of the Hyde Park part of the geological coastal zone area were graywacke with black and gray shale from the Normankill formation. Stones of natural slate are found in the fields as a result of glacier activity and the resulting cracking of rocks hundreds of years ago.

The Geological Map of the County indicates this north-south bedrock along the Hudson is called Austin Glen Graywacke Bedrock. This is one of the five bedrock systems which underlie the county running generally from north to south. The eastern most systems are the Hudson Highlands Gnéiss Range and the small Poughquag Quartzite Range just west of it. The system in the center of the county is Pelitic Rock formation interlaced with the Wappinger Group. Each of these formations contribute to the stone fences of the county and produce the changing landscape of fences from east to west.

If you really want to know about the stones in the county, you ask the fellow who builds the stone walls. According to the local masons, if you need bluestone for face stones, go to the northern part of the county; for rubble stone and slate, go south and west; for marble, go to the southeast. Blue shale is found along the river, limestone along the border

with Connecticut and beautiful colored glaciated stones are found in the northeastern part of the county. When the Ciferris needed stone for the gates of an estate north of Millbrook, their father was able to find a large outcrop of granite within two miles of the location. Enough stone for building a dry wall is usually found on the land you're building on. If necessary you can use stone from the fences that have fallen down in the area. Some quarried stone for late 19th century estate walls were brought by barge from across the Hudson.

## Masons of Dutchess County

It is impossible to know who built the earliest stone walls in the Dutchess County area. The first settlers of the patent areas were Dutch farmers who had only a limited knowledge of stone wall building. In addition there were black slaves and a few English landowners. It was not until the early 18th century that Queen Anne brought Palatine Germans to the areas for her Naval Stores experiment. When this venture failed, some of the Germans settled on the farms in the Rhinebeck area. Although the Palatines were not fence builders, they were familiar with stone masonry construction especially dry wall foundations for framed houses and barns. It would not have been difficult for them to adapt their skills to stone wall building.

*Yankee dry wall with stake  
and rider protective cover,  
Town of Rhinebeck.  
Collection Dutchess  
County Department of  
History. Photograph by  
Douglas Baz.*



The southern section of the newly formed county was settled by English with ties to New England. The groups from the British Isles: Scots, Irish, Scotch Irish and English were familiar with stone wall construction while the New England settlers had had almost a century to hone their stone wall building skills in the New World. It is probable that these groups built most of the early walls in the area. After the Revolution the area was opened to New England settlers and many of the older extant stone walls seem to date from this period.

During the early 19th century skilled masons came to the New York area not only for the construction of the Erie Canal but to fill the construction needs created along the Hudson by this new commerce route. Among them were Irish and Welsh stone workers and masons who were known for their stone construction in the British Isles. Itinerant stone wall builders were reported in nearby Delaware County during the first half of the 19th century and they probably also worked in the Dutchess area. During the last quarter of the 19th century southern Italian immigrants began to settle in Dutchess County. They were not only skilled masons but quarry workers, stone carvers and stone cutters, all well defined crafts in the Italian stone trade. The Italians arrived about the time of the expansion of large estates in the area and were the primary builders of many of the walls and stone work required by the new land owners. Many Italian mason families came specifically for work on the estates and remained in the area after the major construction was completed.

The masons interviewed for this project were about evenly divided between craftsmen of English/New England and Italian ancestry. John Craft of the Stanford area came from a mason family and learned his stone craft at the age of fourteen working with his uncle. He presently works for the Highway Department and specializes in repairing and building dry stone walls.

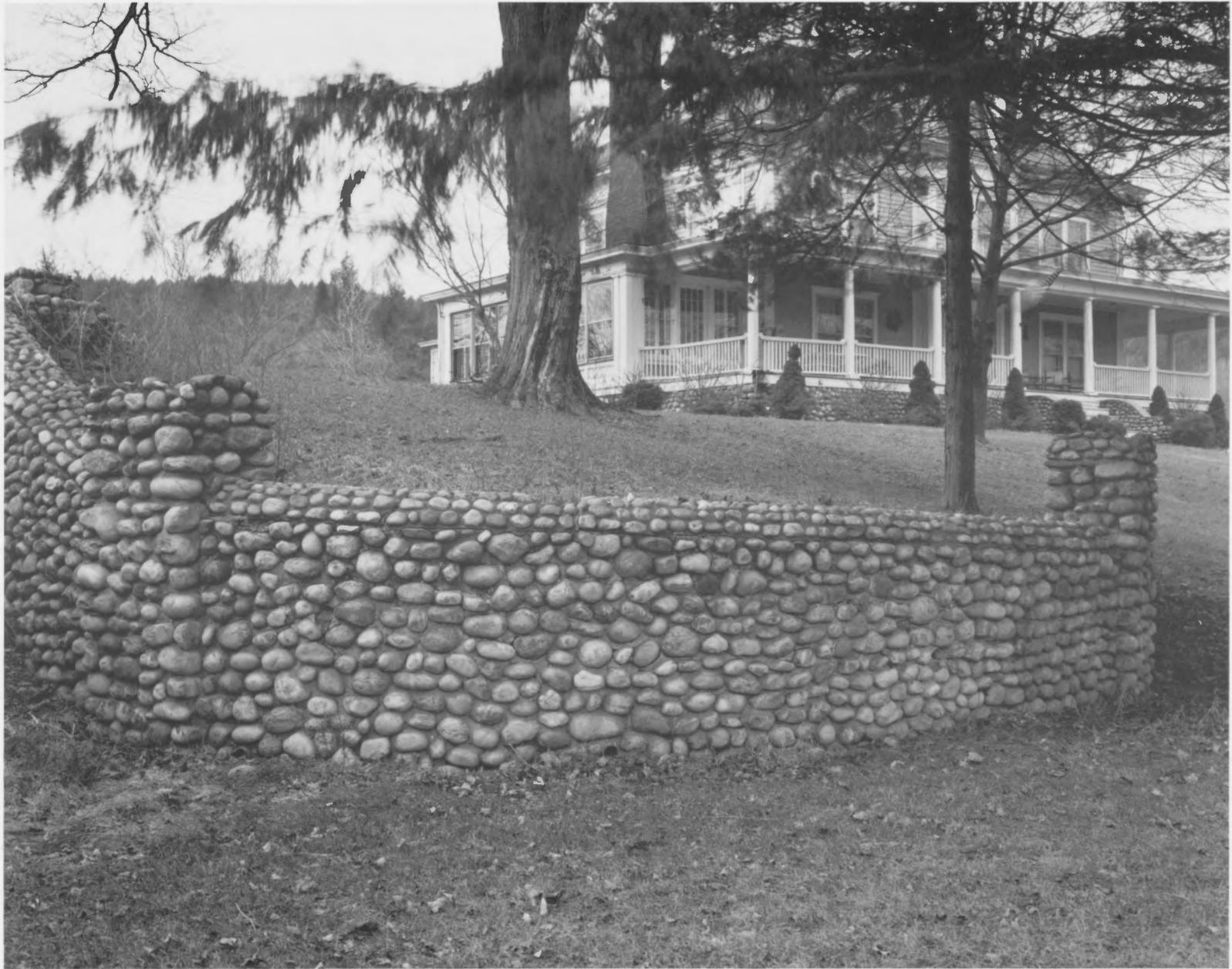
Timothy Smith is from New England where he learned traditional stone wall masonry from old-time Vermont and Italian masons. Mr. Smith then formally studied stone cutting and masonry in New York City while working on the Cathedral of St. John the Divine. He is presently the supervising mason on the Mills Mansion Restoration Project.

Fred Steuding is a young native mason who learned his trade from local craftsmen over the past fourteen years. He works primarily in stone and brick masonry restoration and is presently employed at Montgomery Place.

Stanley Willig is a local farmer and historian who represents the traditional farm stone wall repairer. He has studied many of the stone walls of the county and is familiar with early building tools and techniques.

The Italian craftsmen of the area are represented by two major mason families, the Longbards and the Ciferris. Al Longbard worked with his father, Lewis, from age thirteen. His father was born in southern Italy and came to the Poughkeepsie area in 1891 at the age of three. He started his own stone business in 1928 and helped build the Poughkeepsie Post Office

*Cobblestone wet wall,  
Village of Dover Plains.  
Collection Dutchess  
County Department of  
History. Photograph by  
Douglas Baz.*



and did stone work for both FDR and Eleanor Roosevelt. Al worked with his father locating stone throughout the county until he was twenty-two when he started his own automobile repair shop.

Jim and Ernie Ciferri of Millbrook are both in their seventies. Their father and his brother came from southern Italy in 1898 and started their own stone construction company in 1906. They worked on the estates in the Millbrook area and had a large construction crew which they brought over from Italy. Jim and Ernie both worked with their father when they were barely in their teens. Jim became a master mason and Ernie became a carpenter. They formed Ciferri and Sons Construction after World War II. Their father retired in the early 60s and the firm is now run by the fourth generation of Ciferri.

Joseph Sacco grew up in the brick yards of Hudson, New York. His family, from southern Italy, were all masons including his mother who made bricks in the Old World. He notes with pride that when you are an Italian, masonry comes easy . . . it's just natural. Presently he is the stone mason on the Mills Restoration.

## Stone Construction

The ways of building a stone wall vary as much as the builders who make it. Each stone wall is also different because of the stones used, the lay of the land and the function of the wall. Two basic

construction methods are used: dry wall and wet or mortared wall. Dry walling or laying up stones without mortar is a masonry technique which has been employed since the second millennium B.C. Walls were called wet walls when the mortar was used as a bonding material.

## Dry Walls

The simplest dry wall is the *rubble fence*. Many dry walls had their beginnings from clearing the land of the stones and piling them along the edges of the fields. After the stones had been "picked," they were usually loaded on a stoneboat, pulled by horse or ox teams and dumped along the field lines.

*A good stoneboat is indispensable for hauling stones to a wall, and if the distance is long, it is a good plan to suspend the boat between the wagon wheels just so it will clear the ground. (1797)*

Today, we still have problems of clearing stones from the field but use tractors and bull dozers. After the important work of planting is completed, the farmer might arrange the rubble stones into more consistent piles which served as a crude temporary fence.

*. . . the land was ready for harrowing and reception of seed; after which the fences could be made with pleasure. (1840)*

*Dry wall with decorative vertical stone caps, Anderson School, Staatsburg. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



Today we also have many rubble walls which are the results of old dry walls which were not properly maintained and have fallen into piles of rubble. The true *dry wall fence* is a stone masonry wall which uses no mortar to bind the stones together — essentially the weight of the stones holds the wall together. The dry wall fence is an individual expression of the mason, using the traditional way he learned to build a dry wall. The wall will vary with the choices made by the mason, the stones available and the desires of the property owner.

## Building a Dry Wall

The selection of stone for dry walls is based on the material available in the immediate area, especially those made from existing rubble walls or stones picked on the farm and hauled to the wall areas. Irregularly rounded boulders deposited by glaciers called fieldstone are found on the ground or just below the surface. They are brought to the surface by plowing or heaving of the ground during the freezing and thawing process. Most farmers in Dutchess County reap two crops a year, the one they plant and the stones which mother nature grows. Fieldstone can be used in its natural form, or can be shaped by breaking off unwanted bumps or uneven edges. Besides the gathering of fieldstone, another source is that of quarrying.

Most stone wall builders prefer flat stones for building dry walls; in fact some will not build walls from cobble or round boulder type stones. Flat stone could be most easily quarried from exposed ledges and outcroppings usually near creeks or streams. When the right stone is not available at the location, the dry wall mason must find the appropriate stone elsewhere. Stone may be purchased from local farmers who have stone from clearing fields or are willing to have selected stone walls on their farms removed to make larger fields. Local stone supply companies also are used especially for commercial quarried stone which comes from subterranean sources.

When planning a dry stone wall the owner has the choice between a single or double width wall. The single width wall ranges from eight to fifteen inches wide and is usually constructed of stones about the same size with a face on two opposite sides. A single wall is usually not as high as a double wall and is used as a low decorative fence around the house or flower garden or as a boundary line wall.

A double fence is really two fences tied together and may be from twenty-four to forty-eight inches wide. Each fence has an exterior face. The wider fences can be built to three to five feet high and are used as field fences strong enough to act as barriers for animals in pasture fields. After the stones are delivered as closely as possible to the site of the wall, the dry wall mason sorts the stones into appropriate sizes and grades including large flat stones for foundations and caps, one face straight, two face straight, corner

*Five banded dry wall of cobble and slate, Route 44, Millbrook. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



face right angles, and regular wall stone. During this process the mason learns about the stones he has available and begins to visualize his wall. He also selects the highest quality stone for use in the wall and discards weak stones into a rubble pile. The rubble will be used as fill in wide double walls and as shims to level the wall when necessary.

The mason then lays out the fence line on the ground. If it is a boundary line wall, the established boundary markers are used as reference points. Some dry wall builders say they "eyeball" their walls and do not use aids in laying them out. However, most masons use either a single or double "draft" line to maintain the horizontal straightness and width of the wall. Stakes for the lines are driven about every fifty feet. The lines are also used to maintain the plumb or vertical straightness of the wall since a mason's level is difficult to use in stone wall construction.

The next decision point is the building of the foundation for the wall. The different attitudes of masons and local builders range from constructing an extensive foundation below frost line to laying the wall directly on top of the ground. The selection of the "proper" method is based on their beliefs about keeping a wall from being weakened and eventually destroyed by mother nature.

Below ground foundations are needed, according to one group of masons, to provide proper drainage and to prevent "heaving." Water drainage away from the wall is essential to keep the water from becoming trapped within the wall and expanding and contract-

ing during the freezing-thawing process. This heaving of the wall pushes out stones and breaks the integrity of the dry wall construction allowing it to crumble into a rubble heap. The other point of view, held by most old time stone wall builders, is that a dry wall is a "living" object and needs to have the ability to shift and heave with the freezing terrain. It will maintain its integrity as long as water can drain through the wall.

When a deep foundation is used, a trench is dug to below frost line (sixteen to thirty-six inches) about six inches on each side of the wall. Large flat stones are placed on the bottom with the rough side downward and embedded in the ground. The stones are usually tilted away from the wall to help drainage. Other large stones are laid flat side upward, breaking the joints until grade level is reached. Today, some masons use more modern techniques including drainage tile or sand and gravel for drainage before laying the large foundation stones or pouring concrete footers. Those masons using a shallow foundation to "anchor" the wall, dig a trench about six to eight inches deep and just a few inches wider than the wall. Although larger stones are usually used as the base, a few masons lay the same size stone as in the remainder of the wall.

In the other method, the dry wall builder lays the foundation on the surface when the earth is solid or bedrock is not far below the ground. The stones are laid directly on the ground using large base stones or the standard size stones used in the wall. If the wall is

*Cut dressed stone Italianate walls, pattern of 2 to 1 arrangement, Mills Estate, Staatsburg. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



on a hillside, the wall tends to become a dam for runoff ground water. "Weepers" or drainage tiles through the wall are used to provide proper drainage and prevent freezing of trapped moisture. These "weepers" are placed every two or three feet at the base of the wall.

The laying of the stones for a dry wall is similar whether you are building a single or double wall. The horizontal laying of stones may follow three methods: random, random course and coursed. In random laying no pattern is followed and each stone fits into the wall without regard to horizontal lines. This method is used primarily for round or irregular stones and cobblestones. Random courses refer to a method of laying stones which attempts to maintain horizontal lines but does not have regular course lines. This is used primarily with irregular field stones which have at least one straight surface. Coursed laying of stones refers to laying stones in courses similar to brick and concrete block masonry. This is especially used in flat stone walls which have stones of similar widths.

The laying of stones by any of these methods follows standard masonry practices of overlapping or "breaking" joints. This means the upper stone is laid over the joint of the two stones below it. Breaking the joints adds strength to the wall by distributing the weight of the stones over the complete wall. If the external joints between stones are too large, they are filled with small wedged shape stones to assure the wall is small animal proof.

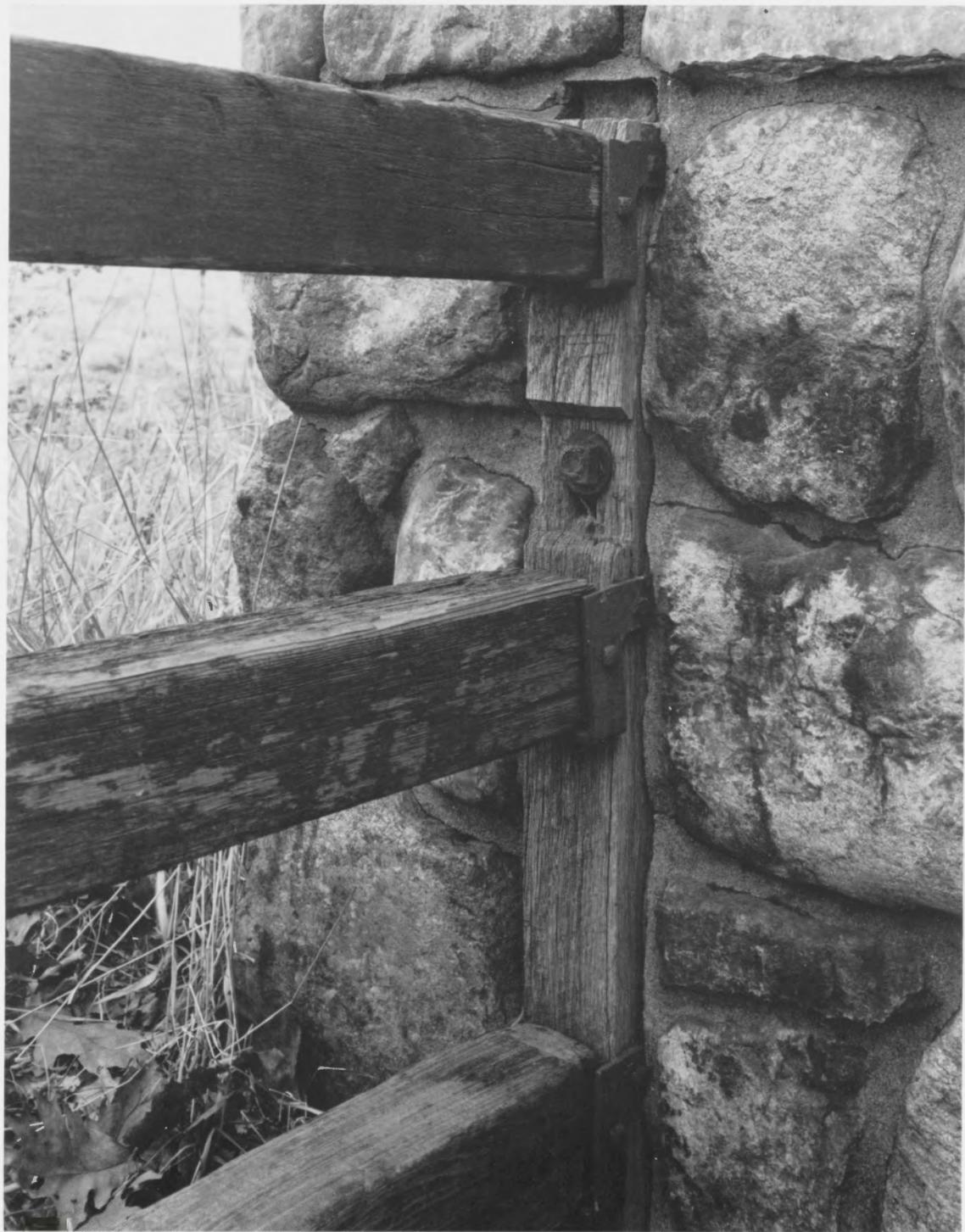
*It requires the exercise of good skill and judgment to place every stone in the best position, so it will not roll or rock about at the slightest touch. — The Young Farmers Manual, N. Y., C.M. Saxon, Barker & Co. — 1860*

The true skill of a dry wall mason is the ability to remember the wall pattern and the stones available. Talking as he works, he may casually walk to his pile of stones and select the piece which fits exactly where he wants it. He will lay a few stones then step back and check his work to see if it looks right to him. If it doesn't satisfy him, he'll tear some of it out and rebuild it. A mason tries to establish a pattern for each wall adding larger stones to the wall every so often to keep the design from becoming monotonous. Occasionally, he may use a "coping" stone, a stone extended out from the wall for decorative purposes. Each dry stone wall is an individual work of art to the mason, and a traditional mason never copies another wall — he has his own style.

The mason starts a wall using corner face stones or stones which have straight edges at a right angle. These may be built up like a post but usually are laid as part of the regular wall. When right angle turns are required in a wall, the same type of stones are used. Most masons prefer, however, to make a round corner of regular stones rather than right angles.

A single stone width dry wall is about a foot wide and two to four feet high. Stones are selected to produce a two-faced wall, one stone wide and are

*Barway gate, Route 343, Millbrook. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



random, random coursed or coursed. Single stone width walls usually use flat or straight edged field stones. Rubble stones are used occasionally to level the top of a wall before laying the next course.

A double stone wide dry wall is two to three feet or more in width. It is actually two or three parallel walls tied together. Stones are selected to build two single-faced walls and longer stones called "keystones" or tie stones are used to bind the two walls together.

*The most important idea to be kept in mind in laying up a stone wall is to have all laid in such a manner as to bind the wall together, from face to face, so that the faces will not separate. (1860)*

These stones which run the width of the wall or a few inches longer are inserted as often as possible but should be used every two or three feet, every second or third course. To complete the construction, rubble stone is used to fill the space between the two large walls. The double wall may be built vertically straight, i.e., "plumb" or tilted, i.e., "battered" toward the top. This is once again based on beliefs about drainage and the heaving of a wall. A straight wall allows proper drainage according to some builders while others say battering a wall on both sides about one inch to each foot of height is required. A battered wall also makes a higher wall more stable according to other masons.

In making a wall up or down a slope, the mason always works uphill, laying the stones level instead of laying them parallel with the surface of the ground.

On uneven ground two methods are used: making the top of the wall follow the contour of the ground or keeping the top level and making the wall higher in the areas of depression. In extremely uneven areas, stair stepping of the wall is sometimes used.

The walls are topped with large cap stones if they are available or a course of even sized stones, making a uniform appearance. These caps shed water which could run down inside the wall and freeze causing bulges. The weight of large stones is essential on animal fences to prevent the animals from pushing them off the wall and destroying the fence. Sometimes another fence of wood, usually a stake and rider type, is built over the stone wall for more height and to protect the top stones of the wall from being pushed off. Decorative caps on single stone wide dry walls are made by laying a course of flat stones vertically or at a slight angle (herringbone) on the top of the wall.

## Wet Walls

Mortar in early American masonry meant any bonding material used to make the wall watertight, to fill voids between masonry units and to act as a cushion for the gradual settling of the masonry. The bonding materials used were clay (called mud), several forms of lime mortar or natural cement.

When the mortar dried or hardened, a rigid wall was created. Unlike the dry wall which was flexible and could adjust to the changing elements, the wet

*Two of four gate posts cut from a single block of granite, Nine Partners Lane, Millbrook. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



wall has to be protected from the elements. Therefore, a foundation below frost line is essential as is proper drainage to prevent trapping water within the wall. The freezing/thawing process can destroy a wet wall by heaving and producing bulging in the wall.

## Mortared Dry Wall

A common type of wet stone wall very popular today is the "mortared" dry wall or fake dry wall. This type of wall looks like a dry wall on the exterior but uses mortar on the inside to strengthen the wall and level the stones more easily. A mortared dry wall can be five to eight feet high without having an enormous base width to stabilize the wall.

A foundation below ground is necessary since the wall cannot move with the elements. The wall is built like a dry wall (single or double) except the stones are bonded with mortar in the center. In a double wall the rubble stones in the center are laid with mortar and then the entire core is filled with mortar. This prevents drainage of water into the center of the stone wall. Since drainage is essential, weepers may be necessary every three or four feet. Weepers may be small drainage tile but usually are shaped from small flat stones. One mason lays glass bottles into the wall and after the wall is up he inserts an iron bar and breaks the glass creating his weepers.

Although tie or keystones are still used to bind the face walls together, chicken wire is sometimes

mortared over a series of courses to bind the wall and seal the top from moisture. A mortared dry wall may also be battered to prevent the collection of moisture. Before the capstones are put on, the top of the wall must be sealed with mortar. The caps are mortared on and the joints between them are sealed. The caps usually extend over the wall a few inches and are tilted away from the wall for drainage. Today some masons use a concrete cap since large stones are hard to find and are expensive. However, old time masons say this cheapens the wall and destroys its beauty.

## Mortared Walls

Mortared walls are the easiest walls according to most masons. The problems are similar and the stones used are the same but the time to bind the wall together is a lot less. Fieldstone wet walls may be constructed of flat stones, mixed stones or weathered round or cobblestones. A foundation a few inches wider than the base of the wall is dug well below frost level (some down to four to five feet). Sand and gravel and stones are used to build to ground level to allow proper drainage away from the wall (concrete footers are sometimes used today). Mortar used between the stone and the joint is filled to the outside of the stone. Cobblestones may be joined at the face of the stone wall which allows the contour of the stone to protrude. Joints are broken as on dry walls. Double walls are filled with small stones and mortar and they are

*Stile of coping stones,  
grounds of "The Pynes"  
Estate, Tivoli. Collection  
Dutchess County  
Department of History.  
Photograph by  
Douglas Baz.*



tied with keystones at least every three feet and every second or third course. The pattern of the wall is just as important as with the dry wall and the mortared joints are part of that pattern. This is especially true with cobblestones.

## Five Banded Walls

A special patterned mortared cobblestone wall is found in the Millbrook area. The stones in this wall are weathered fieldstone and a local white quartz cobblestone. They are usually laid up as a wet wall in five courses. The bottom course is of fieldstone and the next course is of white cobblestones. The remaining three courses alternate between the two types of stones. The wall is about three feet high and is used as a boundary around the small estates of the area. It is not known how this strikingly unique fence was designed but it is confined to a small area in the center of the county. One other example has been reported in the town of Perry in western New York. These five banded fences were first built around the turn of the 20th century by Italian masons. The Ciferris reported their father built one of the fences but they do not know where the pattern originated. They speculated that it was the idea of one of the owners since they usually built their fences to the owners' specifications. Another mason had been told they were built by Chinese masons during the early 1920s.

## Cut Stone Walls

Cut or dressed stone masonry walls are made of quarried stone. The stones may be pre-cut at the quarry to standard sizes and then laid up like bricks. Older quarried stone type walls are either roughly cut into various sizes with rectangular faces, more carefully shaped and selected to lie in horizontal courses, or cut and shaped so that the edges of the blocks form accurate rectangles (ashlar). The final size of the stones is determined at the site of the wall as the "cutter" shapes each stone for its place in the wall. Newly quarried or "live" stones are preferred by the cutter since the quarried stone hardens as it ages.

The pattern of the stones is determined by the mason. A standard pattern in the Dutchess County area for cut stone walls is a "two to one" pattern. This means two small stones are laid next to one large stone to create a course. The small stones must equal the height of the large stone in order to keep the courses straight. The joints of the next course must "break" the lower joint by at least four inches overlap in order to distribute the weight of the wall. The mason makes the final adjustments for the stone to fit snugly, allows space for mortar and maintains the level of the courses and the pattern of the wall. He may further cut or dress the stone in place to provide a finished look to the wall. Usually only the "public" side of a wall was built of dressed stones; the other side might be less finished or in some cases it is a mortared rubble wall.

*Romantic, Bavarian-influenced cobblestone bridge, Deitrich Estate, Millbrook. Collection Dutchess County Department of History. Photograph by Douglas Baz.*



A mason can lay about two courses, five or six feet long of mortared cut stone wall in a day. Slickers are used to force mortar into the joints between the stones. The joints are shaped to the taste of the mason or the owner. Normally they are finished flat or concave. One mason uses his rule to finish the joints while another uses a piece of shingle. During the early 20th century, beaded or convex joints were in style and special tools were used to make beads up to one-half inch or more in width. The mason then allows the wall to set, or dry before adding new courses of stones. When the wall is completed, it is washed with a 2:1 acid solution to remove stains and dried mortar.

Cut stone walls may be capped with large molded concrete slabs but usually more elaborate large dressed stones are used. The top of the stone wall is sealed with mortar before laying the caps which extend about two inches out from each surface of the double wall. Today metal flanges are used under the caps to provide a more permanent water seal. The building of a cut stone wall is obviously more complex and expensive than putting up a fieldstone wall whether wet or dry. These cut stone walls usually were prestige walls built around large estates or public buildings.

## Entrances and Gates

High stone walls not only provided a barrier for animals but made it difficult for people and

machinery as well. Breaks in the wall had to be provided for the farmer to pass through but still restrain the animals. A simple solution was to leave small narrow openings which would admit a person but were not wide enough for cows and horses. Occasionally parallel walls were constructed with a narrow opening or a slight bend which would not admit large animals. However, for wagons and machinery a gate in the wall was necessary. The earliest type of gate was the barway. The fences were finished with an opening wide enough for a road, usually about eight feet. Holes were left at equal height in the end of each wall and split rails were inserted into the hole. When the gate was to be opened, the rails were pushed into one wall which freed the other end and the rails could be removed. Later iron rings were mortared into the sides of the wall to allow the rails to be slipped through.

When it was necessary to allow only a man to scale over the wall, a "stile" or steps were built. Most of the time the stile was a set of small wooden steps which straddled the fence. However, occasionally the steps were made of stones and set into the wall. These large flat "coping" stones were incorporated into the wall like tie stones but allowed to protrude a foot or more from the surface of the wall. The number of stones used on both sides of the wall depended on the height of the stone fence. There are two surviving examples of stone stiles in the northwestern part of the county near Red Hook.

Hinged farm gates have been used since the

middle of the 19th century. To hang these gates, it was necessary to square off and mortar the end of the fence or build mortared stone piers. Elaborate stone gate posts were made of cut stone to hold the decorative iron gates of the estates of the area. These posts might be made of a different stone from the cut stone fence such as granite or marble. One set of four gate posts in the Millbrook area was cut from a single piece of local granite.

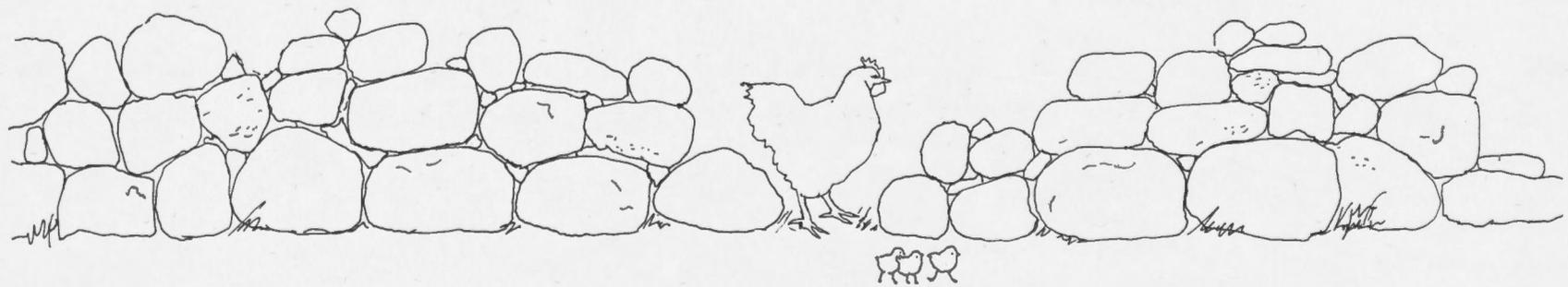
## Non-Fence Stone Walls

The stone wall mason was called upon to use his wall building skills for non-fence construction as well. The dry wall mason built most of the dry stone foundations for framed houses, barns and outbuildings. In the hilly terrain of Dutchess County the stone wall retaining wall was an essential part of the mason's work. Retaining walls were needed around the house and barnyard as well as along the farm lanes and roads. This prevented erosion and the filling in of the land by wash-fallen dirt. The retaining wall was also an essential part of the mill race in order to channel the water and maintain the width of the waterway. The buttresses for bridges were also stone retaining walls which prevented the erosion of the bridge supports by the rushing waters.

The retaining wall is a stone wall that has to withstand the weight of the dirt behind it. It is therefore battered in or tilted back against the bank. The

wall may be either dry or wet and follows the same construction as the normal free standing wall. It is usually eighteen to twenty-four inches thick at the base which is formed with large stones. Twice as many tie stones are needed into the bank as in a regular wall and many of them are at least three feet long. As the wall is built, the dirt is pulled in around the tie stone to distribute the weight down as well as out. Weepers are essential throughout the wall to prevent frost pushing the wall out. Retaining walls are capped in the same manner as free standing walls.

The stone wall masons interviewed for this project are justifiably proud of the walls they have built in Dutchess County. Many of the walls are works of art. They share with many others their concerns about the fate of their walls and the hundreds of old walls built by the masons and farmers of the past. These concerns include the lack of knowledge for the proper maintenance of both dry and wet walls, the influx of new residential housing, which is breaking up the old farms and destroying their stone fences, and the lack of interest by young craftsmen to learn the skills of the stone wall mason and to continue his art form. We share these concerns and hope the problems can be solved and the stone walls of our ancestors continue to be a legacy for future generations in Dutchess County.



# STONE WALLS: AN HISTORIAN'S VIEW

Donald Mc Ternan  
Architectural Historian

# DUTCHESS COUNTY STONE WALLS: AN HISTORIAN'S VIEW

The surviving dry and wet stone walls and fences found throughout Dutchess County today form an important part of our material heritage. They were built in the 18th, 19th, and early 20th centuries. Some were erected by land patentees, many others by farmers and millers, and a number by wealthy estate owners. They performed a range of functions, from property delineators and livestock enclosures to visible symbols of status. These stone walls and fences express the needs, aspirations, and skills of their builders.

In the recent past many of these walls/fences have been destroyed because of changing land use and commercial development. Some have been moved or have been dismantled and their stones used for other purposes. Many more are threatened today. Information provided by surveys of these stone walls and fences will prove invaluable to planners, preservationists, and scholars.

As an important part of the "warp" of our material history fabric, stone walls should be carefully preserved through repair and legal protection. If these surveyed stone structures cannot be preserved or are in imminent danger of destruction, they should be documented with photographs, drawings, and plans for future use.



*Three archival photographs show the transformation of dry walls of the former Langdon Estate in Hyde Park as they were reconstructed for F. W. Vanderbilt in the Italian tradition at the turn of the century. Courtesy of the National Park Service, Shears Collection.*

# HISTORICAL TRADITIONS OF WALL BUILDING IN THE HUDSON VALLEY

## Dutch and Yankee Traditions

The colonial Dutch and German farmers in the Hudson Valley followed the ancient continental "open field" system of farming. In this agricultural tradition, lands were held in common and did not require fencing. These pioneer settlers, however, used much local stone in the construction of garden walls, building foundations, and houses. Because of its availability and widespread use, stone became the traditional wall building material in the Hudson Valley.

Using walls and fences to define land holdings was a long-established Anglo/Yankee tradition, supported by law. Yankees began settling in the southern and eastern parts of Dutchess County after 1750. They increased in numbers, and by the end of the 18th century were established throughout the county. Inter-marriage between Dutch and Yankees became a common occurrence.

Most of the stone walls and fences built by the early Yankee (former New England) settlers in Dutchess were dry-laid. They were usually built from stones gathered, of necessity, while tilling fields for planting, hence the name "fieldstone." The building of dry walls and fences required skill, purpose, and physical strength.

Stone fence building was usually done in the fall and early winter. A strong, wooden runnerless sled

with a slightly turned up front was used to haul stones for wall or fence building. This stoneboat was pulled by horses or oxen. Levers and rollers were used by the builders to place heavy stones into position. The stones were roughly graduated so that the stones used in the upper part of the wall were the smallest. Very large stones were sometimes used in the lower part of the wall. Because they were not cemented with mortar, dry walls could flex or move with changing weather conditions. This has helped to preserve them.

## Italian Traditions

Stonecutting has been a respected occupation in Italy from ancient Roman times to the Italian Renaissance in the 15th century, and has survived into modern times. A passion for working stone is part of the national heritage. The craft skills required to be stone masons were often passed down through many generations of the same family. These artisans took justifiable pride in their workmanship. The great wave of Italian immigration to America in the late 19th and early 20th centuries brought many highly skilled stone masons to these shores. Opportunities provided by great public works projects, such as the Croton Aqueduct, prompted many to come to the Hudson Valley.

The United States took its place as a world power during this period. This gave rise to the "American Renaissance" ideal in art and architecture. This philosophy sought to educate and edify the common man by providing art in public places such as museums, libraries, and municipal buildings. Wealthy entrepreneurs had "showplace" estates built which required skilled craftsmen. Stone was a popular as well as prestigious building material because of its beauty and permanence. During this period stone masons, many of them Italian, found ample opportunity to build high-quality, handsome structures, including walls. Excellent examples of County showplaces which benefited from stone masons' skills are: the Deitrich Estate (Millbrook), the Vanderbilt Estate (Hyde Park), the Mills Estate (Staatsburg) and the Astor Estate (Rhinebeck).

As described above, early Yankee stone fences and walls were usually dry-laid, without mortar. Most formal, stylish stone constructions of the late 19th and early 20th centuries were laid up wet, that is, with mortar between the stones. Whether "dry" or "wet" work, however, careful attention had to be given to selecting and laying the stones so as to bond or interweave them to create a strong, durable wall. Although bonding is most apparent on the exterior face of a wall, the interior stones were also bonded.

The formal walls and entrance pillars bordering estates were usually built by skilled local masons. These prestigious walls were often faced with a veneer of finer, more carefully finished stone called ashlar.

This veneer often concealed a rubble wall core.

Formal, wet wall construction required more numerous and specialized tools than dry wall work. Roughly shaped stones were split and/or "dressed" using steel drills, wedges, chisels, and heavy hand-held hammers.



Pieces of stone were split by boring a series of approximately six inch deep holes along a straight line with drill and hammer. Steel plugs (wedges) were set into pairs of semi-circular steel feathers and placed in each hole. The feathers enveloped the wedges and helped to exert pressure on the sides of the holes in the stone. The wedges were systematically struck with a sledgehammer. By driving the wedges in their pairs of feathers deeper in the stone, and striking the stone hard in line between every hole, the stone was cleanly split in two.

*Walls at the Flagler Estate, Town of Washington, c. 1930, were built by Ciferri Brothers, masons in the Italian tradition. Rodrigo Ciferri is in the middle in front of the wall. Local field stone collected from farms in the town was used to build the wall surrounding the rose garden. Photo from the Ciferri family collection.*

Face stones were dressed with chisel points or picks depending upon the type of surface treatment desired. Sometimes special finishing hammers were used for texturing the face stone. This was called a "hammered finish."

In building wet walls, a mason used a diamond-shaped steel trowel with an offset cylindrical handle. The point of the trowel was rounded. This tool was used mainly to apply mortar and also to tap small stones into position. The mason regularly checked the levelness and plumbness (verticality) of his work with a spirit level and/or a plumb bob. A plumb bob is a small, weighty, pointed piece of metal which is attached to a cord. When suspended, the weight of the bob causes the cord line to hang in a true vertical, or "plumb" position. A wooden or metal ninety-degree square was used to verify right angles during wall building.

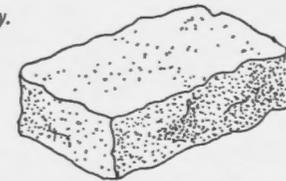


*John Craft, a stone mason with the Dutchess County Department of Public Works, specialized in repair of stone walls along County roads.*

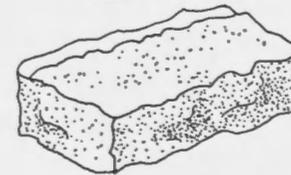
*This example of his fine craftsmanship is along CR 52, between the Towns of Rhinebeck and Milan. Photograph courtesy of Dutchess County Department of Public Works.*

*Stages in dressing stone.*

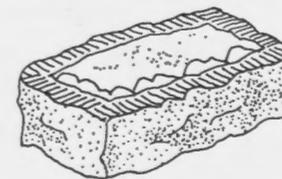
1. *Rough square from quarry.*



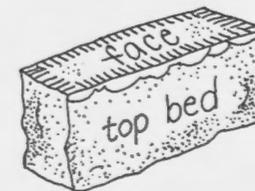
2. *Pitched edges.*



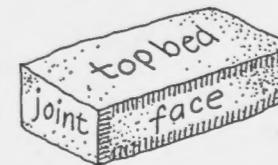
3. *Drafted cut edges.*



4. *A fully dressed surface.*



5. *Finished stone when all six surfaces, top and bottom bed, faces and joints are dressed.*



## Franklin D. Roosevelt and 20th Century Preservation Efforts

Franklin D. Roosevelt had an abiding interest in Hudson Valley architecture, especially that of the early Dutch. He felt that the simplicity of the fieldstone walls of their houses expressed the humble and honest ideals of these pioneer settlers and was dismayed by the destruction of any of these ancestral Hudson Valley houses. While recuperating from his polio attack, he promoted the publication of a book that would preserve a record of the then remaining early Dutch dwellings with photographs and short written histories.

Early in his presidency, FDR was instrumental in the establishment of the Historic American Buildings Survey (HABS). This Depression-era “make-work” program created a valuable record of early American buildings through drawings, photographs, and descriptions. Many of the buildings thus documented have since been destroyed, but the survey materials show them in their original context with walls intact.

Under the Works Progress Administration (WPA), President Roosevelt actively promoted the construction of public buildings. Through this program a number of post offices and schools were built in Franklin D. Roosevelt’s home county during the 1930s: the Beacon, Hyde Park, Poughkeepsie,

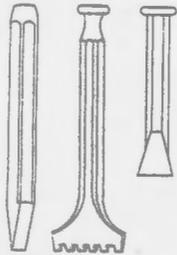
Rhinebeck and Wappingers Falls Post Offices; three schools in the Hyde Park Central School District: Violet Avenue and Hyde Park Elementary Schools; and the Franklin D. Roosevelt High School (now Haviland Junior High School). The president insisted that these structures be designed and built to simulate the appearance of early regional structures and that they have walls made from local fieldstone.

Franklin D. Roosevelt considered the fieldstone wall to be a symbol of continuity linking past, present, and future in the Hudson Valley . . . a symbol that would last for generations.



*Franklin D. Roosevelt, proponent of building in fieldstone, laying the Poughkeepsie Post Office cornerstone, 1937. Collection Dutchess County Department of History.*

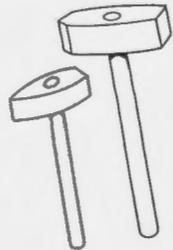
# ILLUSTRATED GLOSSARY OF MASON'S TERMS AND TOOLS



*Chisels*



*Feathers*



*Finishing hammers*

**ASHLAR** hewn or squared stone or masonry wall made of such stone.

**BAR WAY** an opening in a stone wall or fence which is blocked by a removable bar.

**CAP (CAPSTONE)** the crowning stone of a structure, differing from a capital in that it is not a supporting member.

**CHISEL** a metal tool with a cutting edge at the end of a blade, used in dressing, shaping, or working the stone.

**COPING STONES** the capping or top course of a wall, usually done to protect the wall from weather.

**DRY-LAID WALL** a wall built without the use of cement, held together by the position and shape of the stones.

**FACE STONES** stones on the outside of the wall, cut or carved in order to create a desired appearance.

**FEATHERS** projecting strips, ribs.

**FINISHING HAMMER** special tool used to carve facestones in order to create textures.

**KEystone** the wedge-shaped top member of an arch which holds it together.

**LEVER** a bar used as a pry.

**MASON'S AX** a cutting tool for chopping, splitting or shaping stone.

**MASON'S DRILL** an instrument for boring holes in hard substances.

**MASON'S HAMMER** an instrument for driving, beating and the like, consisting of a head of steel or wood, fixed crosswise to a handle.

**MASON'S PICK** a heavy, pointed iron or steel tool, wielded by means of a wooden handle.

**MORTAR** cement used to hold stones together.

**PLUMB BOB** a weight, usually pointed, suspended at the lower end of a cord, with which to test verticality.

**POINTS** large hand-held nail-shaped metal tool, one end tapering to a sharp point; struck with a hammer to dress or remove portions of stone.

**ROLLER** pipe or other strong cylinder used to move heavy stones.

**SHIMS** used to increase the height of a support. These wedge-shaped or flat pieces of hard material are inserted between the support and what rests on it.

**SLICKERS** used to force mortar into joints between stones.

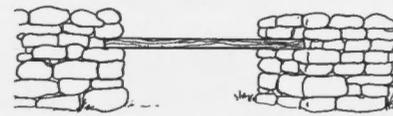
**SPIRIT LEVEL** an instrument used for establishing horizontality, or verticality in a member, which uses the air bubble in fluid principle.

**STONEBOAT** strong, wooden, runnerless sled with slightly turned up front, pulled by animals.

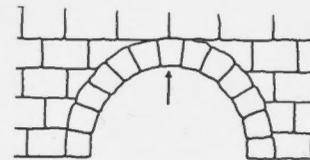
**TROWEL** a tool with a thin, flat, pointed blade for applying and shaping mortar.

**WEDGE** a V-shaped section inserted with force into a recess to induce splitting or placed between adjacent members to apply pressure.

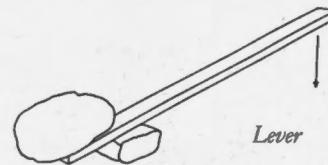
**WET WALL** a wall built of stones held together through the use of cement or mortar.



*Bar way*



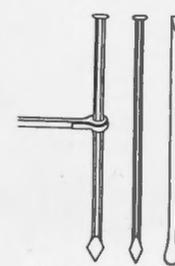
*Keystone*



*Lever*



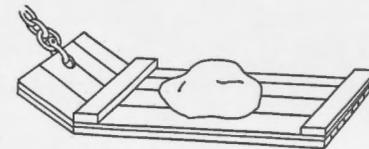
*Spirit level*



*Mason's drills*



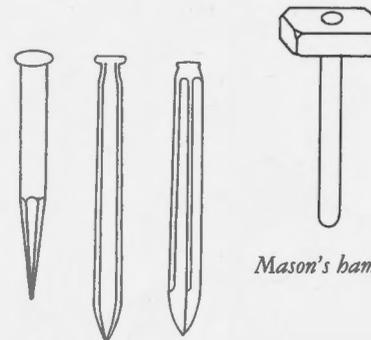
*Plumb bob*



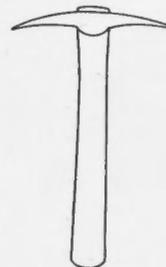
*Stone boat*



*Trowel*



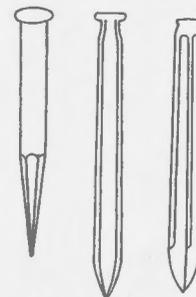
*Mason's hammer*



*Mason's pick*



*Wedges*



*Points*

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