Original Descriptions Of Iroquois Longhouses by Early European Explorers

These are copies of historical documents that describe the longhouses and villages as they appeared in the early 1600s through the middle 1700s. Dean R. Snow, an archeologist, selected, and in some cases, translated the documents and provided commentary as part of the background material for the Iroquois Longhouse Exhibit at the New York State Museum. *See the note at the end of the References Cited section.*

Champlain, 1616 (originally in French)

First translation:

"Their cabins are in the shape of tunnels or arbors, and are covered with the bark of trees. They are from 120 to 150 feet long, more or less, and 36 feet wide, having a passage-way through the middle from ten to twelve feet wide, which extends from one end to the other. On the sides there is a kind of bench, four feet high, where they sleep in summer, in order to avoid the annoyance of the fleas, of which there are great numbers. In winter they sleep on the ground on mats near the fire, so as to be warmer than they would be on the platform. They lay up a stock of dry wood, with which they fill their cabins, to burn in winter. At the extremity of the cabins there is a space, where they preserve their Indian corn, which they put into great casks made of the bark of trees and placed in the middle of their encampment [*au milieu de leur logement*]. They have pieces of wood suspended, on which they put their clothes, provisions, and other things, for fear of the mice, of which there are great numbers. In one of these cabins there may be twelve fires, and twenty-four families. It smokes excessively, from which it follows that many receive serious injury to the eyes, so that they lose their sight towards the close of life. There is no window nor any opening, except that in the upper part of their cabins for the smoke to escape.

"This is all that I have been able to learn about their mode of life: and I have described to you fully the kind of dwelling of these people, as far as I have been able to learn it, which is the same as that of all the tribes living in these regions. They sometimes change their villages at intervals of ten, twenty, or thirty years, and transfer them to a distance of one, two, or three leagues from the preceding situation, except when compelled by their enemies to dislodge, in which case they retire to a greater distance, as the Antouhonorons, who went some forty to fifty leagues. This is the form of their dwellings, which are separated from each other some three or four paces, for fear of fire, of which they are in great dread." [Champlain 1907:313-314].

Sagard, 1632 (originally in French)

"As soon as I was seen from our town of Quieuindahian, otherwise called Tequeunonkiaye, a place quite well fortified in their fashion, and capable of containing two or three hundred households in the thirty or forty lodges in it, there arose so great an uproar throughout the town that everybody left the lodges to come and see me, and so I was brought with great enthusiasm right into the lodge of my savage, and since the crowd was very great in it I was forced to get on top of the platform to escape the pressure of the crowd".

"But because our hut had been built out of the proper season the covering consisted of very bad tree-bark that cracked and split all over, so that there was little or no shelter to us against the rain, which fell upon us everywhere, and from which we could get no protection either by day or by night, nor from the snow during the winter, sometime, finding ourselves covered with it when we rose in the morning".

"Some of these [villages] are not enclosed or shut in, while the others are fortified by strong wooden palisades in three rows, interlaced into one another and reinforced within by large thick pieces of bark to a height of eight or nine feet, and at the bottom there are great trunks of trees placed lengthwise, resting on strong short forks made from tree-trunks. Then above these palisades there are galleries or watch-towers, which they call *Ondaqua*, and these they stock with stones in war-time to hurl upon the enemy, and water to put out the fire that might be laid against their palisades. The Hurons mount up to them by means of a ladder, very ill-made and difficult to climb, and defend their ramparts with great courage and skill.

"These twenty-five towns and villages may be inhabited by two or three thousand warriors at the most, without reckoning the ordinary people who may number about thirty or forty thousand souls in all. The chief town formerly contained two hundred large lodges, each filled with many households; but of late, on account of lack of wood and because the land began to be exhausted, it has been reduced in size, divided in two, and rebuilt in another more convenient locality. The towns on their frontiers and nearer to their enemies are always the best fortified, in respect both of their enclosing walls, two lances high or thereabouts, and of their gates and entrances, which are closed with bars and through which one is forced to pass turning sideways and not striding straight in, and also in regard to the site. This they know very well how to choose, taking care that it shall be adjoining some good stream, on a spot slightly elevated and surrounded by a natural moat if possible, and that the circuit of the walls shall be rounded and the town compact, yet with a good space left empty between the lodges and the walls so as to be able the better to fight and defend themselves against the enemies' attacks, without omitting to make sorties as opportunity offers. There are certain districts where they move their towns and villages every ten, fifteen, or thirty years, more or less, and they do so only when they find themselves too far away from wood, which they have to carry on their backs tied up and attached to a collar resting and supported on their forehead; but in winter their custom is to make a kind of sledge which they call *Arocha*, made of long boards of the wood of the white cedar, on which they put their burden, and with rackets [snowshoes] tied to their feet draw their load over the snow without any difficulty. They move their town or village [also] when in course of time the land is so exhausted that

their corn can no longer be grown on it in the usual perfection for lack of manure; because they do not understand cultivating the ground nor putting the seed anywhere else than in the usual holes.

"Their lodges, which they call *Ganonchia*, are constructed, as I have said, like arcades or garden arbours covered with tree-bark, 120 to 150 feet long, more or less (for they are not all of equal length), and 36 in breadth, with a passage down the middle ten to twelve feet wide running from end to the other. At the two sides there is a kind of bench four or five feet high, extending from one end of the lodge to the other, on which they sleep in summer to escape the importunity of the fleas; of these they have a great many both because of their dogs, which supply them in good earnest, and because of the water made there by the children; and in winter they sleep below on mats near the fire for greater warmth, and lie close to one another, the children in the warmest and highest place as a rule and the parents next, and there is no space between them or separation either at the foot or at the pillow, no more above than below, and they make no other preparation for sleeping than to lie down in the same place where they were sitting and to muffle up their head in their robe, without other covering or bed.

"The whole space underneath these benches, which they call *Garihagueu* and *Eindichaguet*, they fill with dry wood to burn in winter; but as to the great trunks or logs called *Aneincuny*, which are used for keeping the fire in by being lifted a little at one end, they pile these in front of their lodges or store them in the porches, which they call *Aque*. All the women help in collecting this store of wood; it is done in the month of March or April, and by means of this arrangement every household is supplied with what is needed in a few days. They use only very good wood, preferring to go far in search of it rather than to take green wood or what makes smoke; for this reason they always keep up a clear fire with a small quantity of fuel; and if they do not find trees that are quite dry they fell those which have dry branches, breaking these into splinters and cutting them to an equal length, like the faggots in Paris. They do not make up faggots of twigs, nor use the trunks of the biggest trees felled; they leave these to rot on the ground because they have no saw for sawing them up, nor the means of breaking them in pieces unless they are dry and rotten. We were not so particular, and were satisfied with what was nearest to our hut, so as not to spend our whole time in this occupation. In one lodge there are many fires, and at each fire are two families, one on one side, the other on the other; some lodges will have as many as eight, ten, or twelve fires, which means twenty-four families, others fewer, according as they are long or short. There is smoke in them in good earnest, which causes many to have very serious trouble with their eyes, as there is neither window nor opening, except the one in the roof of the lodge through which the smoke escapes. At each end there is a porch, and the principal use of these porches is to hold the large vats, or casks of tree-bark in which they store their Indian corn after it has been well dried and shelled. In the midst of the lodge are suspended two big poles which they call *Ouaronta*; on them they hang their pots, and put their clothing, provisions, and other things, for fear of mice and to keep the things dry. But the fish, of which they lay in a supply for winter after it is smoked, they store in casks of tree-bark which they call *Acha*, except *Leinchataon*, which is a fish they do not clean and which they hang with cords in

the roof of the lodge, because if it were packed in any cask it would smell too bad and become rotten at once.

"For fear of fire, to which they are very liable, they often put away in casks their most precious possessions and bury them in deep holes dug inside the lodges, then cover them up with the same earth, and this preserves them not only from fire but also from the hands of thieves, because they have no chest or cupboard in their whole establishment except these little casks. It is true that they rarely wrong one another, but still there are sometimes rascals who commit offences when they think they will not be found out. This happens chiefly in the matter of eatables".

Unknown authors, in Jesuit Relations (originally in French)

Jesuit Relations, l636

"The largest cabin of the village is set aside for the reception of the company. They do not hesitate to inconvenience themselves for each other on these occasions. The matter is esteemed of such importance that, when a village is built, they purposely put up one cabin much larger than the others, sometimes making it as much as 120 to 150 feet in length" [JR10:181].

Jesuit Relations, 1637

"On this same day the sorcerer *Tonneraouanont*, who was beginning to play his pranks in this village, and had undertaken to cure the sick, came towards evening to have a sweat in our cabin, to get some knowledge of this disease. They crossed four or five poles in a ring, making a sort of little arbor, which they surrounded with the bark of a tree. They crowded within this, twelve or thirteen of them, almost upon one another. In the middle there were five or six large red-hot stones" [JR13:203].

Jesuit Relations, 1638-1639

"In each cabin there are five fireplaces, and two families at each. Their cabins are made of large sheets of bark in the shape of an arbor, long, wide, and high in proportion; some of them are 70 feet long" [JR15:153].

Jesuit Relations, 1639

"Some of us are charged with forty cabins, --in several of which there are four or five fires, that is, eight or ten families.... " [JR16:243]

Jesuit Relations, 1639-1640

"In the cabins of the Savages, which are in length and form like garden arbors, the fires are in the very middle of their breadth, and there are several fires along its length, according to the number of families and the size of the cabin, usually two or three paces apart" [JR17:175-177].

"They have no sooner arrived at the appointed place than the two parties take their places on opposite sides of the cabin and fill it from top to bottom, above and below the *Andichons*, --which are sheets of bark making a sort of canopy for a bed, or shelter, which corresponds to that below, which rests upon the ground, upon which they sleep at night. It is placed upon poles laid and suspended the whole length of the cabin" [JR17:203-205].

Jesuit Relations, 1640

"In these five missions there are thirty-two hamlets, and straggling villages, which comprise in all about seven hundred cabins, about two thousand fires, and about twelve thousand persons.

"These villages and cabins were much more populous formerly, but the extraordinary diseases and the wars within some years past, seem to have carried off the best portion: there remaining only very few old men, very few persons of skill and management." [JR19:127].

Bressani, Jesuit Relations 1652-1653 (originally in Italian)

"The latter [Huron] build enclosed towns, or fortified strongholds, with crossed stakes, traversed with trunks of trees, to protect themselves from attacks of enemies; and make their cabins 10, 15, 20, 30, or 40 *cannes* in length, of great pieces of bark supported by beams, which serve to hold up their corn, to dry it in winter. But neither of them [Algonquin or Huron] have any other bed than either some branches of trees, used by the former, or some bark or matting, used by the latter, --without tables, benches, or anything of the kind, the earth or some bark serving them for every purpose" [JR38:247].

Lafitau, 1724 (originally in French)

"These lodges are also in the form of a vault or arbour. They are thirty to thirty-six feet wide, high in proportion and long according to the number of fires. Each fire has twenty or twenty-five more feet in length than those with only one [fire], none ever exceeding thirty or forty feet. Each of these lodges rests on four posts for each fire. These posts are the base and support of the entire structure. Poles are planted all around, that is to say all along the two sides and on the two gable ends, to hold the sheets of elm bark which form the walls and are bound to them with strips made of the inner bast or second bark of white wood [basswood]. The square frame being raised, the Iroquois make the roof framing with long poles bent in an arc which they cover also with bark sheets six feet long and from one foot to fifteen inches wide. These bark sheets overlap like slates. They are secured outside with new poles like those which form the arch inside and strengthened again by long pieces of split saplings which run the entire length of the lodge from end to end and are fastened at the ends of the roof on the sides, or on the wings, by pieces of wood cut with crooked ends which are spaced at regular intervals for this purpose.

"The bark sheets are prepared a long time before use. The trees are stripped, after girdling, when the sap is running because that is the best time to peel them. After the outer surface which is too rough is taken off, the sheets are piled compactly on top of each other so that they; do not get badly warped and are allowed to dry in this way. The poles and wood necessary for the construction of the building are prepared in the same way. When the time has come to commence work, the youth of the village are invited and, to encourage them, a feast is given. In less than one or two days, all the work is

under way and is being accomplished rather by the number of hands working at it than by the workers' diligence.

"After the body of the building is finished, those interested in it then work, at their leisure, to decorate it inside and make in it the necessary compartments suitable for their habitual uses and needs. The open space in the middle is always the fireplace from which the rising smoke escapes through an opening cut in the top of the lodge directly above, which serves also to admit daylight. These buildings, having no windows at all, are lighted only from above in the same way as the famous Temple of the Rotunda built by Agrippa which is still seen intact in Rome. This opening is closed by one or two movable bark sheets drawn together or back, as is judged suitable, at the times of the heavy rains or certain winds which would cause the smoke to back draught into the lodges and make them very uncomfortable. I am speaking here only of the lodges constructed in the Iroquois form, for those built round and like icehouses have not even openings in the top so that they are much darker and the people in them are always at the mercy of the smoke.

"Along the fires on each side a cubicle extends twelve to thirteen feet long by five or six feet deep and almost as high. These cubicles, shut in on all sides, except that of the fire, serve them as beds [to sleep on] and benches to sit on. Reed mats and fur pelts cover the bark which forms the floor of the berths. On this bed, scarcely suited to encourage softness or laziness, the Indians, wrapped in the same clothing which they wore during the day, stretch out without other preparation. For the most part they do not know what it is to use a pillow. Some of them, nevertheless, since they have seen the French way, make one of a piece of wood or a rolled up mat. The most delicate use those made of deer or moose skin but, in a short time, they are so greasy, dirty and disgusting to look at, that only people as dirty as the Indians can make themselves comfortable on them.

"The bottom of the cubicle on which they lie is at most one foot above the earth. They elevate it this much to avoid dampness. They do not make it any higher because they want to avoid the smoke which is unendurable in the houses when one is standing erect, or is raised a little too high.

"The sheets of bark which cover the platforms [cubicles] above and make the ceiling of the bed, take the place of wardrobe and larder. There, visible to all, they put their dishes and all their little household utensils. Between the berths are placed great bark casks in tun shape, five to six feet high, where they put their maize when it is shelled."

"The Iroquois lodges have exits at the two ends. At each end there is a kind of lobby or separate small apartment and an outer vestibule. "In these lobbies as well as in the free space between the platforms [cubicles], the Iroquois make little cabinets on the two sides where they stow the mats for the young people when the family is large or keep their own when they do not need to be near the fire. These cabinets are raised three to four feet high to keep them free of fleas. Underneath, they put their supply of kindling wood.

"Their outer vestibule is closed with sheets of bark in winter and serves as a woodshed for the heavy wood. In summer, however, they open it on all sides to get fresh air. During the hot season, they put their mats on the flat roof of these vestibules which is not raised as high as their lodges. They lie thus in the open air without minding the dew."

"The doors of the lodges are of moveable sheets of bark hung from above, with neither key nor lock. In the past, nothing was closed in Indian houses. When they were gone a long time on a campaign, they contented themselves with fastening their doors with wooden bars to protect them from the village dogs. During all the centuries before our arrival, they lived in great security and without much distrust of each other. The most suspicious took their most precious possessions to their friends' homes or buried them in holes made for the purpose under their beds or in some part of their lodge where no one knew they were hidden. Now some of them have trunks or little boxes. Others strengthen their lodges at the gables with grossly made planks and install in them wooden doors with bolts bought from the Europeans whose proximity has taught them, often at their own expense, that their property was not always safe.

"They double their doors to protect themselves from cold and smoke and make a sort of second door of blankets of skin or wool. In the usual spells of cold weather their lodges are warm enough, but, when the northeast wind blows and one of those rigorous spells of Canadian weather lasting from seven to eight days on end comes, cold enough to split stones, when the cold has penetrated the lodges, I do not know how they can survive there as little covered as they are, especially those who sleep far from the fires. During the summer, they [the lodges] are cool enough, but full of fleas and bedbugs, and stink very badly when they [the Indians] dry their fish in the smoke" [Lafitau 1977:19-22].

LONGHOUSES

The design of the longhouse reflected the social organization of Iroquois culture, 300 - 500 years ago. Its architecture and construction are adapted to the raw materials available to the Iroquois in their immediate surroundings, and to the tools and technology in their possession.

An Iroquois longhouse

Longhouses are exactly that: long houses that have a long, narrow, rectangular shape. They have been built by many different cultures around the world. Long ago, Vikings lived in longhouses; today, some rice-farming people in Borneo live in them. All longhouses have the same general shape, but were built with different kinds of materials and by different methods. Longhouses were the traditional homes for many of the farming tribes of American Indians that lived in southern New England, New York, Pennsylvania, and New Jersey. The Iroquois people of upstate New York were among them. The Iroquois longhouse in particular is the topic here.

Longhouses have another thing in common besides their shape: they were built to serve as a home for a large extended family. An extended family includes a number of family units consisting of parents and children, plus grandparents, aunts, uncles, cousins, etc. In an Iroquois longhouse there may have been 20 or more families which were all related through the mothers' side, along with the other relatives. All these families belonged to the same clan; each clan in a village had its own longhouse; the clans had branches in other villages. Clans were named for animals and birds; Turtle, Bear and Hawk are examples. The symbol for the clan was used in decorations of household objects, in tattoos, and on the front of the longhouse.

Members of a clan are all descendants of the same person. In Iroquois clans this person was a woman. All the people in the clan traced their heritage back to her through their female ancestors. Each Iroquois person was born into a clan and remained in that clan for life. Being related, people within a clan could not intermarry; one had to marry someone in a different clan. When a young woman married, her husband came to live in her longhouse, where they would make their new home. When a young man married, he moved away from the longhouse where he'd been raised into his bride's longhouse, but he continued to have close ties with his own clan.

The extended family not only shared the same building for their home, but they also worked together to make their living. The clan was the basic social and economic unit in Iroquois society and the leadership in the clans was through the women, because the kinship followed the mother's bloodline. The women managed the affairs of their longhouse, the farming, and distribution of food. They also selected the men who would represent their clan in the tribal council.

To the Iroquois people, the longhouse meant much more than the building where they lived. The longhouse was also a symbol for many of the traditions of their society. Five nations formed the original Iroquois Confederacy. These nations shared a territory they thought of as a large longhouse. The Senecas, who lived in the western end of this territory, were the "Keepers of the Western Door" of the Longhouse. The Mohawks, who lived in the eastern end of the territory, were the "Keepers of the Eastern Door". The Onondagas held the important role of "Keepers of the Central Council Fire and Wampum". To the modern Iroquois people, the Longhouse remains a powerful symbol of the ancient union and is important to many traditions.

How we know about longhouses.

Our knowledge of longhouse life comes from three kinds of sources: archeology, Iroquois oral traditions, and descriptions written by early European explorers.

Archeological record. Our knowledge of longhouses is derived largely from archeological excavations on Iroquoian village sites dating from the 1400s through the 1600s. Excavations on longhouse sites in New York State and adjacent areas of Quebec and Ontario Provinces, and in Pennsylvania, have provided a wealth of information about longhouse lengths, widths, interior spatial organization, and the uses of these spaces.

Iroquois oral language. Other details about longhouses - from the floor up - are found in the Iroquoian languages themselves. Word lists collected as early as the 1600s preserve names for longhouse parts and uses. Similarly, oral traditions often describe longhouses and longhouse life of long ago.

Descriptions by Europeans. Firsthand descriptions of longhouses made by European explorers, missionaries, and travelers provide information that adds to the archeological record and the languages and oral traditions of the Iroquoian peoples. Jacques Cartier described Iroquoian longhouse villages that he visited along the St. Lawrence River in the mid-1530s. His is the first written description of Iroquoian longhouses.

The French explorer, Samuel de Champlain, traveled and lived among the Huron Iroquois of Ontario, Canada, in the early 1600s, and left descriptions of longhouses and longhouse life among these people. Other detailed descriptions of Huron Iroquoian longhouses were recorded by missionaries, such as Gabriel Sagard-Theodat in the 1620s, and many Jesuit missionaries who also worked among the Hurons and their Iroquoian neighbors in New France in the 1630s and 1640s, and later among the Iroquois of New Netherland/New York though the end of the 1600s.

Descriptions made by these explorers and missionaries record early changes to longhouse and longhouse village architecture introduced by the use of European metal tools, particularly, trade axes, and by Europeans themselves who at times remodeled longhouses for their own and special uses. The most detailed description available to us is that of another Jesuit missionary, Reverend Father Joseph-Francois Lafitau. It dates to the

1720s and was written at the Mohawk Iroquois mission community of Kahnawake, near Montreal.

Later, travelers among the New York Iroquois, like John Bartram and Conrad Weiser, described some of the last of the long-longhouses, built of post, poles, and saplings, and covered in bark. By this date (1740s) many Iroquois were living together in smaller extended families, requiring smaller, or at least shorter longhouse quarters. These were built on the traditional pattern and of traditional materials, while the homes of some neighbors were log cabins of hewn or peeled logs and with bark roofs.

Longhouse structure.

A longhouse has a framework built of posts and poles and is covered with sheets of bark. The following description is based on many different sources of information.

Archeologists explore sites of old Iroquois villages by digging carefully in the upper layers of the soil. At some of these sites, they found traces of many longhouses in the form of circular stains in the earth where wooden posts had once been set as a frame for a longhouse. When the posts rotted away long ago, they left these stains in the soil which are called post molds. The pattern of these post molds makes the outline of the missing longhouse.

Iroquois longhouses ranged in length from 30 to several hundred feet. Archeologists have found the post hole patterns of two longhouses that were 364 feet and 400 feet long: longer than a football field, and even longer than a city block! However, a typical Iroquois longhouse was 180 to 220 feet long. The length of a longhouse was determined by the size of the extended family that would live in it. The larger the family, the longer the longhouse needed to be. As the size of the extended family grew, because of more marriages, the building was enlarged to make room for the expanding population.

Longhouses were almost always about 20 feet wide and 20 feet high despite differences in their length. Seen from one end, the roof line of a typical Iroquois longhouse was rounded rather than peaked. There were two doors for the entire building, one at each end. There were no other doors in the building. We know of one exception to this rule of two doors; one longhouse had an extra door in the middle. Longhouses were symmetrical about a centerline along their length. Inside, the right and left sides were identical. The ends were usually rounded and were used as storage areas, shared by the families living in the longhouse. Some longhouses had flat ends. A flat-roofed shed or porch was built over the doorways at both ends of the longhouse.

Use of interior space.

The length and interior space of the longhouse was divided up into compartments or apartments, which were 20 feet long. Two families lived in each compartment, one on each side of an aisle that ran down the center. The aisle extended from one compartment to the next and ran the full length of the longhouse. The aisle was 10 feet wide and was a common space used by both families in the compartment.

longhouse interiorFigure 3. Interior of a longhouse.

A fire was placed in the middle of the aisle in the center of each compartment for heating, cooking, and light. Smoke escaped from a hole left in the roof above it. A sheet of bark could be adjusted to cover the smoke hole in bad weather. When the smoke hole was closed, the high ceiling in the building allowed some of the smoke to rise above the living space. The two families shared the fire and the central aisle.

Each family had its own space on one side of the aisle for sleeping and storage of personal items. In the family space, a platform was built a foot or so above the floor to form a bench where they sat, slept and worked. It extended for most of the compartment's length. The platform bench was closed at the ends by partitions. Storage closets filled the spaces along the wall that were not occupied by the benches. Another platform of the same size was built about five feet above the bench like a bunk bed. This shelf completed a cubicle, which was heated by the fire that was in the aisle. The inside of the wall was lined and insulated with woven mats or furs. The benches were also covered with mats and furs for comfort.

The space under the bench generally was used to store firewood. The shelf above it was used to store clothes and other items. Braids of corn and sacks of other foods were hung in the high ceiling space. Other household goods were hung on the walls and partitions.

Materials.

The forests where the Iroquois lived provided them with plenty of posts, poles and bark that were the basic components of longhouse structure. Because the trunks of the large trees of a virgin forest are much too large to handle without machinery, the Iroquois harvested their materials from second growth forest. Such forests arise in clearings in the old growth forests where the trees were killed by fire or by girdling their trunks. Here small trees grow close together with tall straight trunks that can be fashioned into framework components by merely cutting them to length. The large trees in the adjacent old growth forest could provide bark in large sheets, to be used for covering the structure.

Framework.

Parts of the framework

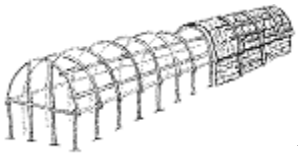

Figure 4. Sketch showing a few parts of the framework.
One end shows the bark covering and the external framework that holds the bark sheets down against the wind.

The framework of the longhouse started with rows of posts that were set into holes dug into the ground. The posts were set vertically and formed the frames for the outside walls. There were interior posts as well that formed the center aisle. All posts had to be strong and stiff and set firmly in the ground because they were the foundation of the building. Horizontal poles lashed to the posts, both across and along the length of the longhouse, greatly strengthened the structure. The roof was supported by poles that were attached at the tops of the posts and were bent into an arch that reached from one wall across the building to the opposite wall. These roof supports are called rafters. They had to be strong and flexible. Other poles were fastened across the rafters along the length of the longhouse, to make the roof stable. When it was finished, the framework made a grid pattern. This framework was the skeleton of the building to which sheets of bark were attached to complete the roof and walls. The parts of the frame had to be close enough together to support the sheets of bark, which were peeled from large trees. The posts and poles came from small trees (saplings) that were tall and straight. These trees were cut to the proper length and the bark was removed from the posts and poles to reduce insect damage and decay. This bark was peeled off in narrow strips, and was saved for future use.

Different types of trees were used in various parts of the building. For example, a strong, stiff tree would be used for the outer posts. A strong but flexible tree would be used in the curved rafters. The Iroquois probably bent their rafters from freshly cut trees, because green wood is much more flexible than dry.

Fasteners.

Figure 5. Lashing.
The parts of the framework were tied together with strips of bark.

Holding the parts of a building together is an essential part of construction. Modern wooden houses are held together with steel nails, but the Iroquois had no nails. Instead, they tied or lashed their buildings together with long strips of bark, or with ropes made by braiding strips of bark. When the bark is fresh and wet, it is flexible and can be wound around poles and posts to tie them together. When it dries, it shrinks a little and becomes stiff, thereby tightening the joint. Useful strips of bark can be pulled off some trees for a brief period in the spring when the sap is flowing freely. Basswood and hickory trees are

good. Because the sap did not flow all year, the Iroquois probably harvested the bark when they could, then kept it under water until needed.

Covering.

The framework of the longhouse was covered with sheets of bark. Trees whose bark could be peeled into large sheets were preferred because big sheets made the job easier. The Iroquois used elm bark if it was available. Bark must be harvested in the spring while the leaves are still small, because that is when it is easily peeled off the tree. The sheets must be flattened out and held with weights while they dry to keep them from curling up. A sheet of elm bark that has been flattened and dried is quite strong, like a piece of plywood. The bark of an elm tree has deep grooves or furrows in it that run up and down along the trunk. However, the Iroquois usually lashed the bark to the frame of the longhouse with these groves running horizontally. This probably was done because it was easier to keep the bark flat by pressing it against the vertical posts. There is an eyewitness report of the Iroquois using an adz to smooth out these furrows so that they wouldn't catch the rainwater as it ran down the roof and sides of the longhouse. After the bark was hung on the frame it needed to be held down to keep it flat and to keep the wind from lifting it. The Iroquois put another framework of small poles on the outside of the bark for these purposes. This is shown in Figures 1 and 4.