From the historical point of view the most interesting aspect of the Woodland pattern in Minnesota is the Mille Lacs, for this is believed to have been the culture of the Sioux or Dakota Indians. Father Louis Hennepin visited the Sioux at Mille Lacs Lake in 1680 and reported that it was the sacred lake of these Indians and the focal point of the whole nation, from which the tribes and bands spread out over a wide area. He mentioned two other facts of importance to the archaeologist—that they cooked their food in earthen vessels, and that they often carried about with them the bones of their deceased relatives. Jonathan Carver in 1767 traveled by canoe down the Minnesota River with some Sioux who took with them the bones of deceased relatives for final disposition in the vicinity of St. Paul. The Sioux custom of placing corpses on scaffolds behind the villages and later gathering up the bones was noted by many later observers.

On the shores of Mille Lacs Lake are numerous village sites and hundreds of mounds. The village sites are very rich in potsherds and the mounds contain secondary burials. The exact type of the vessels that Hennepin saw is unknown, and there is no historical account showing that the Sioux built mounds over the bones of the dead, but all the evidence points to the Sioux as the makers of the pottery and the builders of the mounds at Mille Lacs Lake. The last Indian dwellers there were Chippewa, who drove the Sioux out of northern Minnesota about the middle of the eighteenth century. But since the Chippewa neither made pottery nor built mounds, the prehistoric sites at Mille Lacs Lake are not theirs.

1 This is the first of a series of articles on the cultures of Minnesota's prehistoric peoples which Dr. Wilford plans to contribute to this magazine. A general introduction to the series, in which the classification of the cultures is explained, appears ante, p. 153-157. Ed.
Because Mille Lacs Lake was for a long period of time the center of the area occupied by the Sioux, mounds and village sites in the vicinity have been excavated to obtain information about the cultural traits of the Sioux represented there. In 1900 David I. Bushnell, Jr., and J. V. Brower opened a mound on the east side of the lake and found on the original ground level four bundle burials, with the bones of each individual in a separate little pile and the long bones of each pile lying in the same direction.\(^2\)

In 1933 Dr. A. E. Jenks, assisted by the author, made excavations in a village site on the west side of the Rum River where it empties into Lake Onamia. The village has been identified by Brower as that of Aquipaguetin, to which Hennepin was taken as a captive.\(^3\) The principal material recovered was a quantity of potsherds. If Brower's identification is correct, they represent the latest style of pottery of the Sioux. Furthermore, a study of the sherds reveals many interesting characteristics that are important in distinguishing the pottery of the Mille Lacs aspect from other Woodland aspects. These characteristics will be described in some detail.

In the making of pottery some foreign material, or temper, must be added to the clay to prevent it from cracking while drying. Mille Lacs pottery is tempered with grit, or crushed rock. Since all other Woodland pottery is characteristically grit tempered, tempering is of no value in differentiating the varieties of Woodland pottery. It is, however, important in the Mississippi pattern, where some cultures have pottery tempered with crushed shell.

No whole vessels were recovered from the Aquipaguetin site, but from the evidence of the sherds and of two vessels that are known to have come from the Mille Lacs Lake area, it is clear that all the vessels are wide mouthed, with rounded bodies exhibiting no angularities. Pointed bases are present, though it is not certain that all vessels have them.


\(^3\) Brower and Bushnell, *Mille Lac*, 126.
The decoration of the exterior surface of a clay vessel is an important guide in determining the aspect to which it belongs. The sherds of all Woodland clay pots show that in the decoration each vessel was considered by its maker as being divided into two areas—the rim and the body. Sherds from the Aquipaguetin site show that

the bodies of ninety-two per cent of the vessels are solidly covered with cord-wrapped paddle decorations, produced by patting the surface of the vessel with a flat wooden paddle about which a single thickness of cord had been wound. The remaining eight per cent of the body sherds from this site are unmarked.

The rim sherds show that special attention was given to the decoration of the rim area. Three principal types of impressions were used. The most common, the cord-wrapped stick impression, presumably was made with a slender round stick about which a cord was wound. Second in order of frequency is the type of impression known as roulette, which is believed to have been made most frequently by using a very narrow piece of wood into the lower edge of which evenly spaced parallel notches had been cut. This was pressed or stamped into the clay to form a continuous toothed or dentate line, similar to that produced by running a very narrow cogwheel over the clay. The third principal type of impression was the punctate, a name applied especially to dots or depressions made
by the end of a stick, but including all depressions not in continuous lines. These could be made by almost any object or implement. Cord-wrapped stick and roulette impressions either surround a vessel horizontally in continuous lines, or form one or more bands of oblique parallel lines around it. The two types of decoration are not used together. Punctate impressions are commonly arranged in a single horizontal row around a vessel, with the impressions evenly spaced. They also appear as a border for the lines or bands of either the cord-wrapped stick or roulette impressions. Sometimes the punctate impressions are so deep that a bulge or boss is formed on the opposite wall of the vessel. In the Mille Lacs pottery, these deep impressions often are made on the inner surface to produce a single line of bosses surrounding the vessel on the exterior surface. The rim area was sometimes smoothed before the special rim impressions were added, or they were placed over the cord-wrapped paddle markings.*

Only three arrowheads were found at the Aquipaguetin site, and all were triangular. Brower collected over two hundred arrowheads

*Rim sherds with cord-wrapped stick impressions, from the Aquipaguetin and Malmo sites

*Forty-eight per cent of the rim sherds from the Aquipaguetin site have cord-wrapped stick decorations; twenty-seven per cent, roulette; eleven per cent, cord-wrapped paddle; nine per cent, punctate; and five per cent, miscellaneous. Punctate decorations are combined with cord-wrapped stick or roulette markings on eight per cent of the sherds, thus giving the punctate a total frequency of seventeen per cent.
from the surface of the ground and from a few mounds at Mille Lacs Lake. A substantial minority of these points are triangular.⁶

Another important site at Mille Lacs Lake is at Malmo, on the northeastern shore of the lake, where there is a group of mounds. They were excavated in 1936 by the University of Minnesota under the supervision of Mr. Gordon Eckholm. The bundle burials typical of the Mille Lacs aspect were found in the mounds, and in one there was a burial over which a layer of logs had been placed. The mounds are believed to be considerably older than the Aquipaguetin village site, both because the human bones were in a poor state of preservation, and because triangular arrow points constituted only sixteen per cent of all those found.

The sherds found in the dirt of which the mounds were constructed differ in several respects from the Aquipaguetin sherds. Only a few of the Malmo body sherds have cord-wrapped paddle decorations, and over ninety per cent are plain. This is a complete reversal from the Aquipaguetin body sherds. A high percentage of rim sherds are marked with incised lines. The differences in the Malmo and Aquipaguetin sherds indicate that the later sites of the Mille Lacs aspect reveal a marked increase in the use of the

⁶The Brower collection of arrowheads from the Mille Lacs region is preserved in the museum of the Minnesota Historical Society.
A very interesting village site has been found on the south shore of Howard Lake in Anoka County, on the farm of A. H. Anderson about four and a half miles southwest of the modern village of Forest Lake. The site was investigated in 1934. Though material of Indian origin was found on the surface, the greatest concentration of material was found three feet below it. This fact does not necessarily indicate great age, since the village is situated in an area where wind-blown sands may pile up rather rapidly. But since only fifteen per cent of the fifty-two arrowheads found were triangular, the Howard Lake site is considered older than the Aquipaguetin village and comparable in age to the Malmo mounds. The pottery was in general similar to the pottery of the two Mille Lacs sites. Since seventy per cent of the body sherds show cord-wrapped paddle impressions, they exhibit an intermediate position between those of the Aquipaguetin and Malmo sites. A high percentage of rim sherds with incised lines, however, indicates that with the Malmo mounds, the Howard Lake site represents an earlier phase than the Aquipaguetin site.

Some of the decorations are much more elaborate in pattern than those of the Aquipaguetin site, with the simple horizontal line or band patterns. In the Howard Lake sherds incised lines are sometimes used to divide the rim area into panels and to separate blank spaces from spaces filled with impressions. A band of cross-hatching is often used at the top of the rim area, and some of the incised lines are curved. The unusual features of the Howard Lake rim sherds suggest an influence from a culture known as the Hopewell phase. This is not classed with either the Woodland or the Mississippi patterns. It represents one of the richest and most brilliant prehistoric cultures of the Mississippi Valley. Its center is in southwestern Ohio, where large mounds cover burial crypts and the remains of ceremonial buildings devoted to religious rites and to the cremation of the dead. Quantities of pearls and obsidian and objects of mica, gold, and copper, some of which are very artistically carved or hammered, are found in these mounds. Mounds of this culture,
lacking some of the richer traits, are found in near-by Iowa and Wisconsin. It is not surprising that some Minnesota pottery has design elements suggestive of the Hopewell, but no Hopewell sites are known in that state. The areas in which the Hopewell culture flourished were later inhabited by peoples of the Mississippi pattern, so

![Sherds with Incised Line Decorations, from the Howard Lake Site](image)

the Hopewell phase is relatively early. The Hopewell influence shown in the sherds from Howard Lake is another factor indicating that this site is earlier than the Aquipaguetin site.

Knowledge of the characteristics of the Mille Lacs aspect, derived from the study of the Aquipaguetin and Howard Lake village sites and the Malmo mounds, has made it possible to assign several mounds and mound groups to this aspect. The identification is based primarily on the type of mound and the manner of burial, for most of these mounds contain only buried bones. There is a widespread belief that Indians always buried gifts and offerings with their dead, but this is not true of Mille Lacs aspect burials. In fact a lack of mortuary offerings is one of the characteristics of the aspect. Burial mounds which lack pottery or other cultural objects are ascribed to the Mille Lacs aspect if the burials are bundle burials the earliest of which are on or close to the ground level.

A sampling of mounds all over Minnesota leads to the conclusion that most of those in the central part of the state are of the
Mille Lacs type. They are found in a wide belt crossing the state from east to west, reaching northward almost to Leech Lake and southward to about fifty miles from the Iowa line, though the exact boundaries of the area are not yet known. This area corresponds in general, though not exactly, with the area which the Sioux are known to have inhabited. Within its limits, especially near the southern and western edges, are some mounds that do not belong to the Mille Lacs aspect.

An extremely valuable survey of the mounds of Minnesota was made during the years from 1880 to 1895 by Theodore Lewis and Alfred J. Hill for the Minnesota Historical Society. The report of this survey was prepared for publication by N. H. Winchell and issued by the society in 1911 in a folio volume entitled *The Aborigines of Minnesota*. Winchell lists 9,505 mounds and other earthworks, including nearly 2,900 mounds not reported in the Lewis and Hill survey. The greatest concentrations of mounds are found at Mille Lacs Lake, Lake Minnetonka, along the Minnesota River, and along the Mississippi below Fort Snelling. Within the territory ascribed to the Mille Lacs aspect are 8,521 reported mounds, a truly remarkable number. Descriptions of a few of these mounds, which have been thoroughly studied, follow.

An excellent example of a small mound attributed to the Mille Lacs aspect is the Huber mound in Scott County, three miles east of Shakopee. This mound, on a ridge about eleven hundred feet south of the Minnesota River, was excavated in 1940 immediately before it was destroyed by highway construction. It was a low, circular mound, thirty-six feet in diameter and only fifteen inches high. At its center on the original ground level were three skeletons in a poor state of preservation. Two of them were definitely secondary burials; but the third was a young adult, some of whose bones were in proper anatomical position, as though buried some time after death but before complete disarticulation of the bones. The only cultural objects found in the mound were two flint scrapers.

A very interesting group of thirty mounds is on the farm of Frank Bartke two miles west of Glenwood in Pope County. The group is on high land eighty feet above the level of Lake Minne-
waska, which it faces to the south. On the east and west sides of the site are deep ravines. Seventeen of the mounds are round and thirteen are elongated. Two of the round mounds are connected by a low linear earthwork, and one has two linear earthworks, one on each side, as appendages or wings.

Four mounds of this group were excavated in 1938. One round mound, fifty feet in diameter and three feet high, had at its center the charred bones of two individuals scattered above the charcoal remains of a log or brush fire. Their condition indicated that the bones and not the bodies were burned there. A second mound, thirty-six feet in diameter and a foot high, yielded only one object, a human heel bone. In a third mound, thirty-six feet in diameter and two and four-tenths feet high, the bones of two individuals were found at the center on the original ground level. They represented the secondary burials of a child of ten and an adult. The fourth mound contained a cairn, or pile of rocks, at the ground level, and near it were the bones of an adult placed as a secondary burial. Some charcoal was found among the rocks, but the human bones had not been affected by the fire. Two crude stone knives, two scrapers, and ten potsherds were found in the latter mound. Of the seven body sherds five were plain and two had cord-wrapped paddle decoration; one of the three rim sherds had cord-wrapped stick impressions, one had roulette impressions, and the third had incised lines. The sherds are too few to draw conclusions as to the type represented, other than that they are Mille Lacs sherds, leaning toward the older styles.

A single mound on the farm of Fingar and Carrie Fingerson, four miles south of Glenwood, is a very prominent landmark on the top of a hill overlooking the southeast end of Lake Minnewaska. It was sixty feet in diameter and three and a half feet high. At its center were bones representing the secondary burials of at least five individuals, but most of them were scattered rather than in orderly bundles. Over the bones were the rotted remains of small logs or poles, not charred. At the eastern edge of the burials was a circular cairn composed of twenty large rocks. In a pocket south of the burials was a deposit of cremated human bones, which had been
cremated elsewhere and taken to the mound for final burial. The skeleton of a buffalo calf, complete except for the skull, is interpreted as a food offering. The only potsherds were two body sherds with cord-wrapped paddle decoration.

Two low, rectangular mounds on the farm of Alfred and Edwin Peterson, four miles northeast of Parkers Prairie, were dug in 1937. In the first a very shallow rectangular pit had been dug at the center thirteen inches below the original ground level. As the top soil was eleven inches deep, the pit extended into the gravelly subsoil for two inches. The mound itself was two feet above the original ground level at this point. In the pit were the bones of two secondary burials. The second mound contained only a firehearth, with ashes and charcoal, at its center at the original ground level.

On the high ground on the south side of Otter Tail River at the outlet from Otter Tail Lake on the Lee Morrison farm is a group of twenty-two mounds, surveyed by Lewis in 1883. In 1937 four of them were excavated. In one a shallow pit extending three inches below the top of the gravel subsoil was found near the center, with the bones of an adult interred as a primary burial. A similar central pit in another was deeper, extending fifteen inches below the top of the gravel subsoil. It contained the bones of four secondary burials, partly arranged in bundles; some of the leg bones, however, were in proper anatomical relationship. This indicates the interment of a body not entirely disarticulated, or possibly a true primary burial, the bones of which were scattered by later interments. Above the four skeletons in the pit were charcoal and the remains of five small charred logs. Mingled with the charcoal were the charred bones of a fifth, very fragmentary, secondary burial.

In another mound of this group were found three pits. The largest was at the center of the mound, extended a foot into the gravel, and contained two bundle burials. Near it was a small pit dug nine inches into the gravel and containing the primary burial of an adult which had been placed on its back with the knees partially drawn up. The third pit was near the northern edge of the mound and contained nothing.

The fourth mound was larger than the others. Its principal feature was a very shallow pit at the center, six and a half feet long and five feet wide, but extending only one or two inches into the gravel. In it were the secondary burials of four individuals. Above them were five charred logs placed across the pit from one end to the other. There was earth between the bones and the logs and the bones were not charred. North of the pit, on the ground level, was the secondary burial of a child; and south of it, high in the black earth of the mound, was the secondary burial of an adult, interred in the top of the mound after it had been built.

A mound known locally as the "Round Mound," on the east shore of Lake Traverse and on high land overlooking it, is one of a group of three mounds surveyed by Lewis and reported by Winchell. It was originally elliptical, eighty-five feet long by sixty feet wide, with the long axis running northwest and southeast. Near the center was a circular rock cairn on the original ground level, with some uncharred wood on top of it. Around the cairn, and almost exclusively in the southeast quadrant of the mound, the bones or bodies of fifty-two individuals had been interred. Most of them were secondary burials, but eleven were primary. Thirty-two of the skeletons were on the original ground level, nine were in the black earth of the mound, and eight were in four shallow pits. With one exception, those in pits were primary burials, the largest pit containing one secondary and four primary burials. In the northwest quadrant of the mound were the bones of nine bison carcasses, undoubtedly placed there as a food offering to the deceased.

The Round Mound is in a locality where several cultures are found. It is an unusual type for the Mille Lacs aspect, in that it has so many burials. All other features found in it, however, occur in other mounds of this aspect, and since it is definitely unlike the mounds of any other known aspect, it is classed as a Mille Lacs aspect mound. It is unfortunate that no pottery was present to aid in the identification. Thirteen arrowheads were found, all of the stemmed variety, so this mound may be considered as a relatively early one.

Winchell, Aborigines of Minnesota, 302, 304.
A large group of mounds near the mouth of the Big Pine River in northern Crow Wing County is only twenty miles from Mille Lacs Lake. Brower dug a mound of this group which had a secondary burial on the ground level at its center; thus it was typical of the Mille Lacs aspect. In 1932 archaeologists from the University of Minnesota dug a large mound of this group, fifty feet in diameter and three and three-fourths feet high. Only three plain body sherds, inadequate for any classification, were found in the mounds, though those picked from the surface were definitely of the Mille Lacs aspect. Within the mound were four secondary burials of bones sewed in birchbark coverings. They were within a foot of the top of the mound and were almost certainly intrusive burials, placed within the mound after its construction. All the bundles were charred on the top but not beneath, indicating a fire, possibly a forest fire, on the mound above them. The birchbark wrappings may be an indication that these burials were Chippewa, for according to Brower the Chippewa used such wrappings. Furthermore, they occasionally buried their dead in existing mounds, and there are many known instances of Chippewa having adopted the Sioux custom of exposing corpses on platforms or in trees. It may be concluded that this was an old mound in which the original ground level burials had all disappeared, and that later the four intrusive burials were made, either by Chippewa or Sioux.

The culture of the Mille Lacs aspect flourished in central Minnesota for a considerable period of time, extending into the historic period. Some cultural changes occurred during this period, notably in the pottery, in which the cord-wrapped paddle decoration of the bodies of vessels supplanted the plain treatment, and stamped and cord-wrapped stick impressions replaced to a large extent the incised line decoration of rims. The later sites show an increasing use of triangular arrowpoints, evidence of contact with peoples of the Mississippi pattern.

The people of the Mille Lacs aspect built thousands of mounds as places of burial. Usually bones were placed on the surface of the


ground at the center of the mound, but burials in the flesh were made occasionally, and sometimes shallow pits were dug into the subsoil either for secondary or primary burials. Grave goods were rare, and the black earth of the mounds contained no objects of human manufacture unless the earth was taken from a village site and thus contained sherds, animal bones, and other village debris. In two known cases the carcasses of animals were buried in mounds as food offerings. The building of cairns as markers within the mounds was not uncommon.

Fairly common was the placing of logs or poles over the burials, and in some cases the logs were burned to partially cremate the bones. The latter practice resembles the Hopewell culture, in which mounds were built over burial crypts or over buildings in which bodies were cremated. Hopewellian resemblances are found also in the decoration of sherds from some of the earlier Mille Lacs village sites. The relation between the entire Woodland pattern and the Hopewell culture is of great interest to archaeologists. There is evidence from Illinois tending to show that into groups having a rather simple form of Woodland culture, superior culture traits were introduced, and that the new traits, which probably came from the south, were combined with the older Woodland to produce the Hopewellian culture in some areas. The Hopewell culture undoubtedly influenced the Woodland, which still persisted in near-by areas and continued to persist after the Hopewell itself had died out. No true Hopewellian culture has been found in Minnesota, but such suggestions of Hopewell influence as now are recognized are found in sites assigned to the Mille Lacs aspect of the Woodland pattern.
