STAKE NO. 1 Some of the trees, shrubs, and grasses around you are non native plants. Many were not here until the Europeans arrived and controlled the recurrent prairie fires and brought seeds from distant lands. George Catlin, a noted painter and student of American Indian customs who visited the quarries in 1836, stated that the area was "divested of everything that grows, save the grass and animals that walk upon it." There are approximately 380 different species of grasses and flowering plants growing within the boundaries of the monument, approximately 131 of those (34%) are non-native species.

STAKE NO. 2 This is the Spotted Pipestone Quarry, an active quarry. The pipestone in this quarry is generally speckled with light-colored spots, hence the name. American Indians usually quarry in the late summer and fall. In the spring and early summer, ground water from spring runoff of melting snow and rainfall collects in the quarries. High temperatures and humidity in the summer may prevent quarrying, as the process requires hard physical labor. *DO NOT ATTEMPT TO ENTER ANY OF THE QUARRIES. THE LOOSE STONES ARE EXTREMELY HAZARDOUS TO WALK UPON.*

STAKE NO. 3 This small lake is named for Longfellow's mythical American Indian character, Hiawatha. Lake Hiawatha is an enlarged natural lake. Early settlers to this area constructed drainage ditches and as a result, rain and runoff from melting snow washed soil from nearby plowed fields into the lake. Its was then felt necessary to build a small dam in order to raise the lake's surface. The dam building occurred before the area was protected as a National Monument. Most of the native tall grass prairie located in the monument today is too shallow and rocky and was never used as farm land. The wet lake margins support many species of plants that did not grow here prior to the construction of the dam. The chewed stumps indicate that beaver visit here. Muskrats also leave the cuttings of sedges and cattails as evidence of their presence. Sometimes the head and neck of a turtle appears as a "snag" sticking out of the water. The turtle is the Dakota totem of fertility. Placing a turtle effigy in a home is believed to assure that the first born child is a boy.

STAKE NO. 4 These small shrubby trees are smooth sumac (Rhus glabra). Sumac leaves were gathered in the fall and dried for smoking. This is a native species which thrives after fire burns the area. Prescribed fires have stimulated the sumac to spread into the tallgrass prairie, pushing out the native prairie plants. Because the smooth sumac competes with other native prairie plants, it is cut back by hand to maintain a healthy balance in the prairie ecosystem. This plant provides habitat for many animals that call prairie their home.

Although not found at Pipestone National Monument, another type of sumac grows much bigger in more forested areas along streams and rivers. This larger sumac, staghorn sumac (Rhus typina) is used for making pipe stems. It has a pithy core which is readily burned out to form a hollow tube. Stems of some pipes are also made from hardwood. After the stem has been roughly shaped, it is split and grooved to form the hollow center. Then the split pieces are glued and bound together. The color and decoration of the stems varied as to the tribe, use, and individual taste.

STAKE NO. 5 Old Stone Face (Leaping Rock). This unusual Sioux Quartzite formation has been created entirely through the forces of natural erosion. The trail to the right is a short-cut to Winnewissa falls. The **CIRCLE TRAIL** turns left and follows the quartzite ledge to the top of the cliff line and the Nicollet marker, and on to the falls, where it intersects with the short-cut trail.

STAKE NO. 6 As you climb this natural stairway, note that some of the quartzite stone steps have a rippled surface. These ripple marks are found throughout the monument. They were formed when the quartzite layers were still loose sand in shallow water. Ripple marks of both types are found by modern lake or sea shores, and in or near rivers and streams.

STAKE NO. 7 The initials on this rock were laboriously chiseled by members of the Nicollet Expedition of 1838, the first United States Government exploration party to visit the pipestone quarries. Led by Joseph N. Nicollet, a French scientist, this expedition produced the first accurate map of the Upper Mississippi country, including present day Minnesota. The metal plate and barricades were placed here by the *Daughters of the American Revolution in 1925.*

Nicollet Inscription

Leaping Rock

STAKE NO. 8 Leaping Rock (Old Stone Face). The earliest explorers such as Catlin and Nicollet had their curiosity aroused when they saw arrows stuck in the crack atop Leaping Rock. They learned from Indians that traditionally a young warrior, to prove his valor, leaped this chasm and placed an arrow in the crack. In fact, it was related that on occasion a virtuous Indian woman refused to accept the attentions of a young warrior until he had shown bravery at Leaping Rock.

The ledge to the left of Leaping Rock chasm is Inscription Rock. It bears the initials of many pioneers who settled in this part of Minnesota. We value the memory of these early pioneers and the initials they left, but please remember—you are not a pioneer. Do not carve or leave markings on the rocks or trees.

Follow the **CIRCLE TRAIL** to the top of the falls, and down the stone steps.

STAKE NO. 9 The CIRCLE TRAIL here turns left and crosses Pipestone Creek below Winnewissa Falls. Winnewissa means "Jealous Maiden" in the Dakota language. According to one American Indian legend, the Great Spirit call the warring nations together in the valley of the pipestone. There he admonished them to lay down their arms and live like brothers. While he was speaking, water poured from the rocks nearby, forming the falls.

STAKE NO. 10 The rock wall along the trail is Sioux Quartzite, the stone that overlies the pipestone. Since the pipestone layer dips, or slopes underground in this direction from the quarries, it would probably be over 100 feet below the surface at this point.

Geologists tell us that this region was once a seashore. The pipestone was a deposit of muddy clay which was later covered deeply with sand. Subsequent pressure and heat, together with some chemical action, formed the sand into quartzite, and the clay into pipestone. By placing your fingers on the quartzite, you immediately notice the rough granular composition. Pipestone feels smooth and slightly soapy.

STAKE NO. 11 Climb this stairway, turn left, and you will find another example of nature's sculpture. This stone face is called the Oracle; spiritual leaders (Medicine Men) believe that it can speak and voices are said to issue from its cold lips. It is said that the Oracle is the guardian of the valley.

STAKE NO. 12 On this rock wall along the trail is written the story of nature's forces changing rock to soil. Note the orange and green lichens (ly-kens) that encrust the rock. They are the first visible signs of life to gain a foothold on bare rock and requires no soil, since they secure their nutrients and moisture from the air. Through chemical action their roots form an acid which reacts chemically with the rock to form minute quantities of soil. After many years, mosses and ferns are able to take hold in this soil and thrust their roots into the small cracks in the rock. The cracks and pockets in the rock are expanded and gather more soil until grasses, shrubs, and eventually trees are growing where once there was only bare rock. Although this was told quickly, remember that this example of nature's forces work with unbelievable slowness. The lichens which get a foothold on the surface of a bare rock may spread over the entire surface at a rate of only an inch or less in a century.

Though lichens are slowly eating away the quartzite, most of the soil in the monument is actually a mixture of gravel, sand, silt, and clay deposited thousands of years ago by glacial ice sheets, streams, and the wind.

STAKE NO. 13 Here is preserved a small portion of the tallgrass prairie which once extended for many miles in all directions. This area is typical of the higher and better drained portions of the tallgrass prairie. The colors and texture change every month, sometimes every week, with a different plant species blooming in full color. When the first Europeans explored this area, some species of the native prairie grasses were as high as a horse's head. With the first settlement of the area, and the introduction of non-native plant species, composition of the tallgrass prairie plant community changed dramatically. In an attempt to restore the native prairie plants, Pipestone National Monument initiated a prescribed fire program in 1971. This program continues today. The objective of the monument's fire program is to restore the prairie to its native plant composition and appearance. Once restored, fire will continue to be used to maintain the prairie eliminating the growth of trees and shrubs and controlling the dominating effects of non-native plant species.

STAKE NO. 14 Following the Spirit Lake Massacre of 1857, a Dakota band, (led by Inkpaduta) with white captives, camped briefly on this prairie, as did at least one force of pursuing troops. One of the survivors, Mrs. Abigail Gardner revisited the area in late September, 1892, and pointed out the campsite not far from the quarries. The Indians that came to quarry the stone did not camp on this prairie, probably because they considered it sacred ground. Generally, they camped on higher ground to the west and north and entered the quarry area only for the purpose of obtaining pipestone.

STAKE NO. 15 You are standing in the midst of active quarry pits where American Indians have quarried pipestone in years past, and continue to quarry today. From the very beginning, the stone has been highly prized for its ease to carve, and attractive appearance. Nearly all tribes that could obtain the stone used it for calumets or ceremonial pipes, the best known of which is the peace pipe. However, other uses include personal ornaments, fetishes, ceremonial tablets, and ordinary smoking pipes.

The floor of this quarry exposes a single pipestone layer, one of several now being quarried in other areas to the north and south. The contact between pipestone and the overlying quartzite is visible at the deep end. The differences in color and texture between the smooth, red pipestone (hardened mud) and granular, pink quartzite (densely cemented sand) are readily apparent. Note also that the rock layers dip gently toward the east. The pipestone layers being quarried today thus become more and more deeply buried the farther one moves to the east, and quarrying becomes more and more difficult each year.

Many tribes hold the pipestone in great reverence and many legends concern its mythical origin. A general belief held by many American Indians is the stone was formed from the flesh and blood of their ancestors.

STAKE NO. 16 Here a quarry has been opened so you may see the pipestone in place. The floor and lower 12 inches of the pit wall are pipestone. The overlying rock is Sioux quartzite which is very hard and heavy. The red color of the pipestone is due to the presence of small amounts of iron. You can learn more about these interesting rock formations from exhibits in the Visitor Center.

As you return to the Visitor Center, you will see the Stars and Stripes of the United States of America. It may remind you that this area has been set aside by Congress as a National Monument to ensure that American Indians of all tribes may continue to quarry pipestone. The National Park Service and Pipestone National Monument are pledged to preserve this area for the benefit and enjoyment of future generations. The following statements identify significant cultural and natural components of Pipestone National Monument's (PNM) ethnographic landscape.

- PNM is the only location where Indians have quarried the red pipestone (catlinite) from very early times to the present.
- PNM is identified as a sacred site associated with American Indian spiritual beliefs and cultural activities.
- PNM protects a significant cultural/ethnographic landscape.
- PNM is significant for the landscape it protects, which consists of the tallgrass prairie that developed in association with the site's distinct hydrologic features. These features combine to provide an unusual array of habitats supporting a diverse assortment of prairie plants and animals and rare habitats, federally listed threatened and endangered species, and globally rare remnant plant communities.

Indians Digging Pipestone in 1885

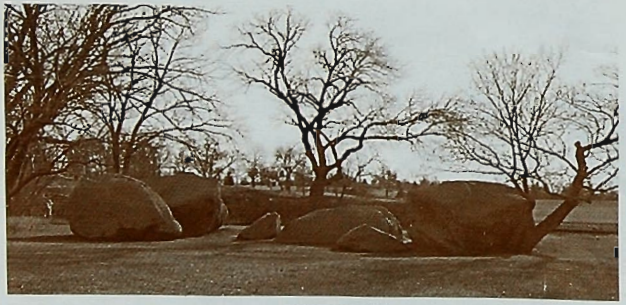
We hope you have enjoyed your walk on the CIRCLE TRAIL. If you have questions, please ask the ranger at the Visitor Center.

Cover design and sketches by Allen Ronning

THE THREE MAIDENS

As you leave the monument, you will see six huge boulders on your right. If you inspect them closely, you will notice that the rock is very different from quartzite and pipestone. Coarse crystals of gray quartz and blocky crystals of pinkish potassium feldspar are visible, and there is no internal layering. This is granite, for which there is no nearby bedrock source. The rock was carried here (probably as a single, very large boulder) from the north by an ice sheet, and left behind when the ice melted. Rocks like these are called erratics. Smaller erratics of granite and other types of rock are found all over the park. They are part of the gravelly till or glacial drift that mantles the land wherever the great ice sheets once extended.

As the name "Three Maidens" suggest, a legend attaches to these boulders. In one of the manifestations of the Great Spirit, two maidens disappeared for shelter under these boulders. (Perhaps the "Three Maidens" is a modern name derived from the three large fragments of the old glacial boulder.) Their spirits remained there to guard the quarries and Indians must leave offerings of tobacco and food if they are to have good quarrying.



THE THREE MAIDENS

Sketch of Turtle Petroglyphs from the Three Maidens
Currently on display in the Visitor center

This booklet is published by the

PIPESTONE INDIAN SHRINE ASSOCIATION

A Nonprofit Organization
Pipestone National Monument
Pipestone, Minnesota

The Association cooperates with the National Park Service to preserve the vanishing art of pipemaking and assisting in the advancement of historical, scientific, educational, and interpretive work of Pipestone National Monument. It's sole purpose, as one of the 65 non-profit cooperating associations operating in 325 units of the National Park Service is to connect visitors with the park through sales items, development of interpretive exhibits, videos, and other items that educate visitors.

This cooperative agreement between the Association and the National Park Service enhances the visitor's experience and enjoyment, and assists in the development of a broad public understanding of the Indians and their history in this area. It aids in the interpretation of archeology, ethnology, history, geology, and plant and animal life bearing on the monument region and encourages research by interested scientists; offers books and printed materials on subjects pertaining to the area for sale to the public; and assists in gathering and preserving objects, documents, and scientific information which furthers the aim of the interpretive program.

Revenues derived from the activities of the Pipestone Indian Shrine Association are devoted entirely to the purposes outlined. Any person interested in the furtherance of these purposes may become a member.