

Ethnobotany of the Iroquois with an Emphasis on the Seneca of the Upper Allegheny

**By Emily Porter
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University of Pittsburgh at Bradford**

Introduction

The science of ethnobotany studies the way a group of people has used plants to fulfill their needs. In northwestern Pennsylvania and southwestern New York a group that used plants extensively and intimately was the Seneca Indians. Many of these uses have been recorded in detail by descendants, settlers, anthropologists, archeologists, museum curators, and the first European traders and missionaries. Studying historical uses of plants is important for many reasons. For example, it gives one deeper insight into exactly what has been lost in the name of progress and what stands to be regained.

What is Ethnobotany?

Not to worry, many people do not know what the word ethnobotany means. “Ethno” refers to people and “botany” refers to plants. Ethnobotany is the study of how people use plants for food, medicine and other purposes such as housing, basketry, and making fire. Ethnobotany combines the disciplines of botany and anthropology. It looks at not only how plants affect people, for example as sources of sustenance, legal and illegal drugs, and economic income, but how people affect plants by harvesting, cultivating, and purposefully or inadvertently introducing them to new habitats on their travels. It looks at not only how people use plants but also how they view them. How are the plants depicted in folklore, religious beliefs, and language (“What is Ethnobotany”)?

The first thing many people think of when they think of an ethnobotanist is a scientist searching for cancer or AIDS fighting drugs in the rainforests of South America, but ethnobotany applies equally to all uses of plants, people of all regions, both historical and modern uses of plants, and “primitive” and highly technological uses. It includes not only indigenous plants, but the plants and plant materials we import from all around the world. Medicine *is* an important part of ethnobotany. However, people use plants in nearly every aspect of daily life. As I type this sentence my keyboard sits on a cherry desk in a house constructed largely of wood. Wearing clothes of cotton, I sip my black tea, and do research in books printed on paper. Indeed without plants there would be no people.

Who are the Seneca/Iroquois?

The Seneca Indians are one of the five original members of the Iroquois Confederacy also known as the Five Nations and the Haudenosaunee which translates to “people of the longhouse”. They are the westernmost of the Iroquois tribes whose territory once included most of New York state and beyond. The other tribes from west to east are Cayuga, Onondaga, Oneida, and Mohawk. The Tuscarora were adopted as refugees in 1700’s making it the Six Nations. There are many conflicting opinions as to when the Iroquoian culture first arose, who their ancestors were, and even as to when the great Confederacy was formed. A Seneca story relates that their people emerged from the

earth at what is now called South Hill near Canandaigua Lake. It seems that in the Upper Allegheny area successive waves of nomadic peoples were replaced by a culture of mound builders who were eventually replaced by the Iroquois. All that is known for sure is that the Confederacy, which was formed to promote peace amongst the neighboring tribes, was well established when the first white men arrived in the 1600's.

Some sources referred to in this paper apply specifically to the Seneca, while others do not necessarily discriminate between Iroquois tribes. Although all of these tribes were distinctly individual with different languages, modes of dress and slightly different climates and resources, their uses of plants were probably markedly similar due to cultural similarities and cultural exchange.

Where is Upper Allegheny?

The Allegheny River originates in north central Pennsylvania, oxbows into New York State, and then travels south to Pittsburgh where it joins the Monongahela river to form the Ohio. The term Upper Allegheny is used loosely and in this paper refers to the place where the river flows through southwestern New York and into northwestern Pennsylvania. Nearby towns include Warren, PA and Salamanca, NY. This area has been inhabited by the Seneca for at least several hundred years and continues to be inhabited to this day.

Traditional Uses of Plants

Plants were everything to the Seneca. Their importance to the people is evidenced by their prominent place in the traditional Thanksgiving address. It is also interesting to note that the Iroquois confederacy is symbolized by a plant—the white pine—known as the Great Tree of Peace (*Cultural Plants and Trees*, 1). Plants provided shelter, fire, food, cooking utensils, ropes, baskets, religious aids, medicine, entertainment, and more. These items were not crude but highly functional, beautiful, and skillfully crafted. Much of the knowledge of when and how to gather these plants and how to work with them has been forgotten. However tribal elders report a renewed interest in learning the old ways and some scientists are beginning to recognize the wisdom of traditional ecological knowledge (TEK). The frequent use of the past tense in this paper is not meant to indicate that there are no longer any people practicing these skills today.

Shelter

All of the Iroquois tribes as well as many of their neighbors lived in multi-family longhouses. The use of the longhouse as a primary dwelling may have extended into New Jersey, Ohio, Massachusetts, and West Virginia (“What is a Longhouse?”). They were rectangular in shape with either a rounded or triangular roof. They were anywhere from 30 to 400 feet long. The framework of the house was built of poles cut from saplings and the entire structure covered with bark. Everything was tied together using strips of the inner bark of a tree such as basswood. Slabs of bark approximately 4 feet wide and 6 or 8 feet long were removed from elm, hemlock, basswood, ash, or cedar trees and pressed flat under weights to make shingles. Elm seems to be the favorite kind of bark. I could find no explanation for this. Probably it was the easiest to peel in large sheets or perhaps it was selected for a combination of characteristics such as abundance and resistance to rot or cracking. Lyford describes the process:

When a large piece of bark was to be removed from a tree an incision was made through the bark around the tree near the roots and a like incision was made about seven feet higher up the tree. These two horizontal incisions were then joined by a vertical cut. In order to reach the upper edge of a long strip of bark it was often necessary to build a crude scaffolding against the tree. Beginning at the edge of the vertical cut, the bark on each side was loosened from the wood by use of a tapering wedge that was gradually worked in all around until the large sheet of bark came off entirely. This thick bark could be divided into thin sheets by peeling it off layer by layer. If the bark was removed without injuring the sap layer the tree would continue to grow and a new layer of bark would be formed. (52)

The bark for both shingles and cordage was most easily gathered in the spring starting when “the leaves were the size of a squirrel’s ears”. This is because when the sap is up it peels more readily from the wood, although *Indians in Pennsylvania* describes how when traveling the Indians stayed the night in quickly constructed bark lean-tos in rainy weather and that they knew which trees to peel for this purpose in both the summer and the winter (qtd. in Wallace, 44). These huts were found frequently along popular trails and could be used by anyone. They were about three feet high at the back and six feet at the front. A fire in front and a mattress of evergreen boughs added to the comfort.

Plants also made up the bulk of the interior decorating in the longhouse. Bunks lined each wall of a central hall with fireplaces and plenty of working space in the middle. The bottom bunks were covered in bark slabs and mats of reeds and cornhusks topped by furs and were used for sitting and sleeping on. Supplies and firewood were stored underneath. The top row of bunks was used for storing more belongings. Walls might also be insulated with furs and mats. Strings of braided corn hung from the rafters along with strips of dried pumpkin, squash, apples, herbs and braids of sweet grass, which gave off a pleasant odor. The longhouse was gradually supplanted by a house of white pine logs beginning in the 1700’s (Lyford, 13).

Fire

To start a fire the Iroquois relied upon fire-by-friction. Their usual device was a pump drill, consisting of a hearth board, a spindle, a counterweight and a crosspiece. A hole is drilled through the crosspiece so that it can pump up and down on the spindle. The crosspiece is then attached to the spindle with a piece of cordage and twisted up. It is quickly pumped down and allowed to rise back up. The untwisting cordage spins the shaft and the weight provides the momentum to wind it back up. The friction of the spindle against the hearth board creates a glowing coal as the wood is ground to dust and heated to extreme temperatures. I was unable to find what type of wood the Seneca used to build pump drills. Generally woods used in fire-by-friction are softer and non-resinous such as willow and aspen but the pump drill is such an efficient device that the type of wood used is not as critical as in other friction methods.

The Indians had intimate knowledge of the different kinds of wood that were best for fire making, which would burn the best when wet, provide the brightest light, or burn with the least amount of smoke. Firewood was gathered by the women. It is said that

various types of wood might be selected when preparing a meal to give it the desired taste (Lyford, 33).

Food

The Seneca and their neighbors were largely an agricultural people. Their staples were the three sisters: corn, beans and squash. They also cultivated other vegetables and kept orchards. The extent of their agriculture determined their overall lifestyle contributing to the development of the longhouse and settlement in relatively large villages (Parker, 6). Nevertheless hunting and gathering was an extremely important part of their lives.

Cultivated Foods

Corn

The subject of corn culture among the Iroquois is treated extensively by both F.W. Waugh in *Iroquois Food and Food Preparation* and Arthur C. Parker in *Iroquois Uses of Maize and Other Food Plants*. Corn, also called maize, was undoubtedly the most important of the three sisters and corn plants were used for more than just food. Corn was first developed and from a wild grass, *teosinte*, and cultivated by the Indians of Central America. The trend spread north as cold tolerant varieties were developed. According to Waugh:

Corn (*Zea mays*), as a food material, was found throughout an immense area in North America, including such ethnological areas as Mexico and Central America, in the former of which localities it is considered to have originated; the southwestern and southeastern areas; the eastern woodlands as far north, practically, as it could be successfully cultivated; also the southern and eastern borders of the plains region, where it was cultivated by the Siouan, Caddoan, and other tribes. Along the pacific coast and over the plateau area evidence is lacking that it was cultivated north of the Rio Colorado.

It was found in cultivation by the early explorers of the Mississippi valley and as far northward as the Mandan and Arikara on the upper Missouri, though not along the upper Mississippi nor in more northern latitudes. (71)

Early cornfields are reported stretching for tens and even hundred of acres (Waugh, 4). The Seneca cleared the land for their villages and cornfields by girdling trees with stone hatchets, burning the underbrush, and later burning down the dead trees. The women then prepared the fields for planting with short wood handled hoes with wood, bone, or antler blades. The method of planting and the layout of the garden seems to have been different from village to village with trenches, holes, and mounds all being described along with various ways of distributing beans and squash amongst the corn. There both were individual and communally owned cornfields (Fenton).

In the Seneca cosmological myth corn was said to have sprung from the breasts of the Earth-Mother. Many rituals surrounded the planting of corn. Before planting a spring Thunder Festival was observed to ask for rain. During planting a festival was arranged by the women of a secret medicine society to give thanks to the spirits of the plants. Several sources mention that the corn seeds were soaked in "medicine". One such medicine was

made of a decoction of hellebore which would poison crows trying to eat the seed by making them get dizzy and flutter about scaring away the other birds.

Tending to the fields was made less laborious through gossip, jokes, and songs. The women of the community would help out one another and work one individual's field together in "hoeing bees". They called this practice "in the Good Rule they assist one another". In return it was the owner's obligation to provide a feast. The chief planting was in May but they also planted in April and June so that they could harvest from August to October (qtd. in Parker, 26).

Harvest time involved a plucking bee followed by a husking bee. Husking was one agricultural activity in which the men were likely to participate in. Singing, story telling, smoking, and feasting attended this ceremonious occasion. The corn was braided together by the husks for drying. Games were played to make the process more fun. For example if a person came to a curious ear, one that was oddly developed or unusually colored, he or she might be rewarded with an already husked ear from each participant. The braided corn was hung from the ceiling of the longhouse and shelled corn was stored in bark barrels. Excess corn was stored in corn sheds and corn cribs. A surplus of corn was grown to last many years in case of emergency and often cached in bark, grass, or hemlock bough lined pits in the ground.

Attempting to categorize corn can be confusing. According to Lyford there were two main types of corn used by the Iroquois: dent and flint. Dent was used both as mature corn (hulled and dried) and eaten on the cob (green corn). Flint because it was tougher and more durable with an inedible hull was used only as mature corn. Over the years corn has become more specialized and the terms seemed to be used differently today. However we still use corn in these two basic ways. Corn on the cob it is most like the Indian's dent corn, while grits and tortillas are made of flint corn. There were also several varieties of each type of corn. Early observers reported early ripening and late ripening versions, short ears and long ears, sweet corns, popcorns, and corn of all colors including blue, red, yellow, white, black and purple.

If there were many varieties of corn there were twice as many ways to prepare them all. Estimates range from twenty to more than forty. Some of the meals prepared from corn include:

Tamales- These were made of green corn paste boiled in folded corn leaves. Green corn paste was made by scraping the kernels from the cob with a deer jaw and mashing them with a stone mortar. One author reports that the corn could also be scraped by the jaw of the cook! Similar cakes were wrapped in husk and baked in hot ash or in small dishes.

Baked Green Corn-was made of green corn paste dumped into a pot lined with basswood leaves. The paste was covered with several layers of basswood leaves and covered with ashes. Then hot coals were placed on the top Dutch oven style.

Baked Corn- Corn was baked on the cob and in the husk. Many campers are familiar with this method of cooking corn in the campfire. They may not know the secret to an unscorched ear of corn is to cover the corn with a layer of cold ashes before raking the fire back on top.

Husked Green Corn-was roasted in hot coals. A single ear might be roasted on a stick.

Fried Green Corn- Green corn mash was shaped into cakes and fried in bear grease.

Succotash-was prepared of green corn cooked with beans.

Cracked Undried Corn-was made from corn that was hard and mature but not yet dried. It was crushed and boiled for several hours with beans.

Boiled Corn Bread- Hard corn was shelled (the tough hull separated from the inner kernel) by soaking in lye solution made from hardwood ashes, then ground and sifted into a fine meal which was formed into cakes and boiled or baked in the ashes. Beans or berries could be added to the dough.

Hominy-was made by pounding flint corn to loosen the hulls and crack the kernels. This was sifted and winnowed.

Nut and Corn Pottage-was made by mixing nut meal and nut milk with corn meal and cooking in a kettle.

Corn and Pumpkin Pudding-was made of corn meal, pumpkin or squash, and sugar.

Regular Corn Pudding-was made of roasted corn pounded in to a fine meal and thrown in boiling water. This food was carried by hunters in a skin bag and eaten boiled or dry. It might be mixed with sugar or dried berries. If eaten dry it was considered dangerous to eat too much since it would swell in the stomach.

Parched Corn Coffee-was made by burning the corn on the coals, scraping it from the cob and boiling in water to make a drink.

Pop Corn Pudding-was made by pounding pop corn and mixing it with oil or syrup.

Fermented Corn- There is documentation of a rotted corn food. It was made by letting an ear of corn stand in water for a couple of months.

These are only a few of the ways in which the Iroquois prepared corn. In addition to these everyday meals there existed special ceremonial meals such as Bears pudding, Buffalo Dance pudding, Ball Players pudding, and False Face pudding (Parker, 79). Corn kernels were also used for beads and decorations, in rattles, as sacrificial offerings, and to make an oil. Parched corn flour was sprinkled on the navel of babies, and the pulp of green corn was used as a substitute/additive for deer brains when tanning hides. Do not think for a moment that the other parts of the corn plant were laid to waste. Here are some of their uses:

Silk and Tassels

-keeping game scores and teaching children to count (male tassel straw)

-hair for dolls (silk)

Stalks

- a sweet syrup was extracted
- fishing line bobbers were made of sections
- young boys made clubs and spears
- the inner pith used for its absorbent properties and used to polish metal when that became available
- the juice of the green corn stalk was used on cuts and bruises
- a tube for storing medicine was made from a hollowed out cornstalk stoppered at both ends.

Husks

- dried husks were used as quick burning torches
- kindling
- cushion and mattress filling
- sprinklers in dance ceremonies
- braided into clotheslines
- masks and mask hair, coiled and sewn or woven entirely
- woven into salt and spice bottles (with corn cob stopper), trays, baskets, sandals, and moccasins, sleeping mats, and door mats
- folded into dolls
- baby hammocks
- the smoke of burning husks helped mother deliver placenta

Cobs

- smoking meats and hides
- scrubbing bushes for washing
- pipe bowls
- small quantities of cob ash used to season food and said to kill stomach worms and prevent dyspepsia

Beans and Squash

According to Lyford ten or more varieties of beans were cultivated by the Iroquois including bush, wampum, purple and white kidney, marrow-fat, string, cornstalk, cranberry, chestnut, lima, hummingbird, and white. Some ways beans were prepared included a soup of string beans, shelled green beans, fried green beans, soup of dried beans, a pudding of ground dried beans, boiled and mashed beans, and beans served in the shell of a boiled squash.

The words pumpkin and squash seem to be used by early writers interchangeably. Some types included what we now know as crook neck squash, Hubbard squash, scalloped squash, winter squash, and hard pumpkin. One source credits the Seneca with raising sixty kinds of beans and squash combined (qtd. in Francello, 112). Squashes were baked or boiled and squash flowers were also eaten.

Other Cultivated Foods

The Iroquois grew cucumbers, husk tomatoes, and melons such as muskmelon and watermelon. Apparently these melons were not planted in the garden but were cultivated in woodland tracts marked with the totem of the owner. Allegedly at first frost unripe melons were dug up and planted inside where they ripened. These melons were reserved for the sick. One source mentions that artichokes and leeks were cultivated. No doubt they are referring to the wild leek, and the Jerusalem artichoke, a native sunflower with a starchy potato-like tuber (Lyford, 17). Sunflowers were also grown for their seeds, which were used to make an oil.

Wildcrafted Foods

Wildcrafting is the practice of harvesting wild plants, though it must be said that patches of important plants, even in the wild, were “cultivated” and their production could be encouraged either by accident or by design. Disturbing the roots of certain species seems only to increase their abundance, and coppicing shrubs such as willow or selectively harvesting plants like milkweed and scattering the seeds of good specimens can result in healthier and/or larger plants over time (Nyerges, 74). Also, “Prior to European settlement of the region, the Seneca Indians used fire in the forests to clear underbrush, improving hunting conditions and increasing berry production. Today, resource professionals believe the quality oak stands in the river corridors on the Allegheny National Forest are a direct result of periodic understory fire used by the Seneca” (“Oak Regeneration”). Common foods gathered from nature included:

Fruits

Apple
Crab Apple
Hawthorn
Wild Cherry
Choke Cherry
Peach
Plum
Grape
Pawpaw
Pear
Quince
Mayapple

Of these fruits apple, peach, pear, and quince were introduced from Europe. One observer reported that the apple was the Iroquois favorite fruit and their favorite way to eat it was baked in hot ashes.

Berries

Blackberry
Blueberry
Checkerberry
Cranberry

Highbush Cranberry
Nannyberry
Currant
Gooseberry
Dewberry
Elderberry
Hackberry
Huckleberry
Serviceberry
Red Mulberry
Raspberry
Strawberry
Thimbleberry
Partridge Berry

Women gathered the berries. Many of them were dried for out of season use. Supposedly the best way to dry blackberries was to break the stalk of the plant and let them dry on the bush. Very juicy berries were made into a paste and dried on slabs. Children were allowed to drink the excess juice from the mashing bowl. Blackberry juice was thought to make a good winter drink to scare away the cold because the bears who survived the icy blasts of winter ate berries all summer long (Waugh).

Several of the berries were also used as medicine or in religious ceremonies. For example the elderberry was given to fevered patients. Interestingly Gypsies and most other cultures use this plant in the same way. Partridge berry was mainly used as medicinal berry since it is nearly tasteless. Strawberry was highly esteemed and honored with its own festival, being the first fruit of the berry season. The earliest of wild strawberries were believed to have potent medicinal properties and were much sought after. Strawberries were said to line the road to heaven so if one had a near death experience it was common to say, "I almost ate strawberries" (Swatzler, 153).

Nuts

Acorn
Beechnut
Black Walnut
Butternut
Chestnut
Hazelnut
Hickory Nut

Oil was made by crushing nuts and throwing the meats into boiling water where it would rise to the surface to be skimmed off, then the water would be drunk (nut milk) and the meats used in corn pudding or bread. Hickory oil was used to feed infants. Another baby food was made of flour of butternut or hickory nut mixed with powdered dried meat and then thrown into boiling water. This was given to the baby in a bottle made of bear gut with a nipple of bird's quill! Acorns were boiled in lye and roasted to remove the bitterness. If you are near an old nut tree you may want to look for a long

forgotten nut stone identifiable by the small depression in the middle for cracking nuts and an accompanying hammer stone (Parker, 102).

Greens:

Milkweed- Stems and leaves when young, leaves when a little older, then bud clusters
Waterleaf
Marsh marigold
Yellow dock- Young leaves before stem appears
Pigweed
Lamb's quarters
Mustard- Particularly *B. nigra*
Purslane
Dandelion
Burdock- Young leaves
Nettle
Skunk cabbage
Leek
Wild garlic
Wood betony
Sensitive fern
Watercress
Peppermint
Wood sorrel
Sheep sorrel
Wild Asparagus
Pokeberry

Of these foods watercress, peppermint, wood sorrel, sheep sorrel, leek, and garlic were known to be eaten raw (Waugh, 117). Asparagus, yellowdock, dandelion, and burdock are among the European introductions.

Tree/Vine Products

Wild pea
Grapevine shoots- Unpeeled
Sumac shoots- Peeled
Raspberry shoots- Peeled
Silver maple/red maple bark- Pounded and dried
Basswood and elm- Inner bark eaten in emergencies

Roots

Indian cucumber
Pepper root
Groundnut
Burdock
Leek
Wild onion

Spring beauty
Jerusalem artichoke
Yellow pond lily
Cattail
Arrowhead
Jack-in-the-pulpit
Solomon's seal
Skunk cabbage

Jack-in-the-pulpit and skunk cabbage are interesting food choices in that when eaten raw they contain a substance that is not poison but very uncomfortable because it makes the throat and tongue feel like they are being pricked by thousands of little needles. It seems the plants must be thoroughly dried, not just boiled, to rid them of this substance. Parker reports that he is unable to find wild onions and leeks being used as a flavoring for other foods and that it seems that the Iroquois preferred them raw or in a soup all by themselves. Wetland roots and tubers were sometimes stolen from muskrats who hoarded them in their houses, but this was not practiced often because the Indians were very superstitious about muskrats. Probably this was only done if the muskrat had been killed during hunting (qtd. in Parker, 108).

Fungi

Meadow mushroom
Morel
Giant puffball and others
Sulfur shelf
Hen of the woods

Mushrooms and lichens were definitely eaten. Mushrooms are reported as being liked as well as meat. A large white tree fungus was reported as being cooked into a sort of porridge. Oyster mushroom comes to mind as a possible candidate for a white tree mushroom and is quite common in the area. Lichens, on the other hand, were only eaten in emergencies such as during long hunting trips and in times of starvation. They were eaten as is or soaked in lye to remove the bitterness. One writer mentions a "rock tripe" which was cooked into a black and disagreeable porridge.

Teas

Hemlock
Birch
Sassafras- Roots and flowers
Spicewood
Wintergreen
Yarrow
Witch hazel
Red raspberry twigs
Sumac berries
Monarda

One observer claimed that the Indians rarely drank plain water preferring teas, cooking water, and other beverages.

Other

Wild rice

Sugar maple

Though it was no staple, Parker says wild rice was at one time gathered in great quantities by the Seneca. It was most likely found on the shores of Lake Erie. Maple sugar, on the other hand, was a very important part of the diet. During maple season (March-May) families abandoned the village for weeks at a time and moved to the family sugarbush. A slanted gash was made in the tree with a stone knife and a chip of bark or flat stick was driven into the lower end of the gash or into another gash underneath the first. The taps were made near to the ground, not 3 or 4 feet high as they are today. No spout was necessary, the sap would simply run down the stick into a bark container. These containers were made from a strip of elm bark about three feet long and two feet wide, the outer bark was left on the bottom and sides but taken off the ends to be folded up (Lyford, 52).

The sap was drunk fresh, fermented, and of course boiled into maple sugar. Maple sugar results when the sap is heated slightly past the syrup stage and is better for storing. For boiling they transferred the sap into a large bark container or hollowed out log trough and dropped hot stones into it. It helped if the sap froze overnight because most of the ice would be water and this could be skimmed off and thrown away leaving a more concentrated sap behind. Smith asserts that it is possible to tell where an Indian sugar camp once stood in a freshly plowed field because of the particularly black soil and bits of rock that have obviously been heated to very high temperature (7). Maple sugar was used in many ways—mixed with cornmeal as a high-energy travel food, dissolved into a drink, and as a seasoning for meat. On hunting trips it was mixed with bear grease in bear gut bag and meat was dipped into this (Smith, 9).

The foods listed above probably represent only a fraction of the foods utilized by the Seneca. Although good fruits and berries are limited in number, the potential number of other foods such as greens (especially when including European introductions) and mushrooms is much greater. Some very good foods not mentioned by any of the authors include violet, dwarf ginseng, wild ginger, ostrich fern, and sweet cicely, to name a few, and other trees may have been tapped, especially the other maples and birch.

Cooking Utensils and Containers

Splint baskets were made of black ash and used for a variety of purposes. Women usually wove the baskets but the men prepared the splints and carved the handles. Splints are made by hammering a log to separate the growth rings into layers. They were sometimes colored with vegetable dyes. Cornhusks, iris leaves, cattails and sweet grass were also made into baskets. Baskets were used for picking berries and corn, holding seeds when planting the garden, fishing, and carrying wood. A hulling basket was made out of ash splints to wash corn. Corn that had been boiled in lye to loosen the tough outer skin was sloshed up and down in water in this basket allowing the hulls to float away.

Another type of basket was the hominy sifter. Grains of the proper size were sifted out and the rest thrown back into the corn mortar for further processing. The meal sifter was like the hominy sifter but much finer.

Corn mortars were made for pounding corn into meal by hollowing out an upright log using hot coals. Coals are placed on the top and the wood is allowed to burn, then the charred bits are scraped away and the hollow is burned deeper. Parker claims that the corn mortar was made from the trunk of a black oak and was about 20 inches wide and 22 inches high. The type of wood was important for its grinding quality and resistance to cracking when dry (47). The mortar was, of course, accompanied by a pestle, also made of wood. The Seneca pestle described by Parker was made of hard maple, double ended, and 48 inches long.

Wooden bowls and spoons were also hollowed out by coal burning after being roughly shaped with stone hatchets. Sometimes gourds were used as cups, bowls, spoons, and to carry water. Other times bowls, cups, spoons and ladles were carved from tree knots. These spoons were much larger than our typical eating spoon and Parker claims the Indians joked that they did not understand how the white men gained any energy from their food having to go back and forth with their spoons so often. Maple was a popular choice for carving, though cherry, white ash, apple and horse chestnut were also used. Lyford mentions that cups were always round on the bottom so they could be set in a hollow in the dirt and that warriors traveled with their cups tied to their belts (58). The handles of cups and spoons were often beautifully carved birds or other figures. These utensils were dyed a dark color with hemlock roots and polished to an attractive sheen.

Although the Iroquois had pottery, tree bark could be folded into an emergency kettle. This kettle was filled with water and placed over a fire. Food was dropped into it. If kept at the right level the water would boil without the container burning. Elm was used most frequently but hickory, oak, and birch were also used. Scoops were sometimes folded out of bark, but were weaker than carved utensils. A bark bread bowl was made of elm bark which was bent into a bowl shape and rimmed with a hoop of ash sewed on with inner elm or basswood bark. These bowls were used for making the dough for corn meal flatbreads (Lyford, 51) Barrels were made of black ash or elm bark stitched into a circle and fitted with a bottom and a lid. Charred and dried corn as well as dried meats were kept in these barrels. A heavier type of barrel was made by hollowing out a section of log.

Bags were occasionally woven of vegetable fibers such as basswood. Some larger types of baskets were used with burden straps woven of vegetable fibers. The burden strap, or tump line, was a strap that went across the forehead to help carry heavy loads. Inner elm bark was the finest material for a burden strap because it was the strongest and most pliable, but basswood was used for coarser straps. Lyford explains:

Bark that was to be used for thread was usually gathered in the spring when the sap was running. The outer surface of the bark was removed, the inner bark was peeled off in narrow strips six or eight feet in length, loosely braided, and tied in bundles until needed for use. It was then boiled and pounded to render it pliable. It was sometimes necessary to repeat this process three times. Then it was washed thoroughly and dried in the sun. After it was dried the strips of bark were separated into the natural fibers running with the grain. Many of the fibers

ran the entire length of the strips of bark and were often several feet in length. When separated, the fibers were usually neatly braided into skeins and laid aside until needed for use as thread or twine. (54)

Clothing and Appearance

Mainly clothing and adornments were made of animal products (deerskin, fur, feathers, claws, quills) and eventually of imported cloth, yarn, and beads, but a few plant products were used. In lieu of bear grease, hair was sometimes oiled with sunflower oil. According to Lyford, “a red face powder, with a delicate fragrance, made from the pulverized dry-rot of the inner portion of pine, gave a smooth, velvety finish to the skin” (22). A chief on a ceremonial occasion might wear a sash with long fringe woven of native fibers. A necklace of sweetgrass was worn by both sexes. It was made of a braid of the grass decorated every three or four inches with smaller disks of grass. There are a few examples of moccasins made of braided corn husk or basswood fiber. The porcupine quills that were used for decorative purposes before beads became available were dyed with plant dyes. Elk hair (woven into belts), leather, and vegetable fibers were also dyed. For example brown or black was made of butternut and yellow was made from sweet gale seeds.

Religion

The Iroquois religion very much centered around plants. In the Iroquois creation story the creator gives the people several sacred ceremonies to perform coinciding with important seasonal events. In one version of the story the people's neglect of these ceremonies results in the loss of wild plant and animal food sources so the creator gives the people corn, beans and squash to make up for this (Herrick, 9). The traditional Thanksgiving festivals celebrated by the Iroquois were all food based with the exception of the midwinter New Year's ritual. The festivals occurring during the seasonal cycle are generally given as follows: Midwinter Rites, Thanks to the Maple, Sowing of the Seeds, Strawberry or First Fruits, Green Corn, and Harvest Feast. Months (moons) were also named for seasonal events, often plant related.

Several accessories to ceremonial dances were made of plants. Rattles were made of wood splints or gourds and filled with dried corn. The masks used at Falseface ceremonies were made of wood or braided cornhusks. These wooden masks were carved while still on the tree to give them spiritual potency. Trees used included basswood, willow, cucumber magnolia, and other soft woods. Strands of basswood, leatherwood, or elm bark were sometimes used to create hair for the masks.

Red cedar was used to make a flutelike instrument to be played in ceremonies. Lyford declares, “as played by the Indians, the flute affords a sort of wild and plaintive music. It is claimed as an Indian invention”(38). Water drums were made of hollowed out cedar or basswood logs, or sometimes of two pieces of bark made water tight with spruce gum. The drums were filled with water and the level adjusted for different tones.

There is no evidence that the Iroquois utilized hallucinogenic plants and there is scant evidence of the use of alcohol, but tobacco was used both on a daily basis and ceremonially in a variety of ways. Kinnikinnick is a term used for any smoking mixture and not necessarily a particular plant, although plants commonly used in smoking mixtures have come to be known by that name. The Iroquois most commonly mixed

their tobacco with sumac leaves and red willow bark. It was believed that prayers to the spirit world would rise on the smoke. In addition to being smoked, tobacco was also sprinkled as an offering, and put in a bag attached to ceremonial masks to make them more effective (Lyford, 17). The juice was used to treat insect bites and stings.

Medicine

The Iroquois employed hundreds of local plants for medicine. As is true of most indigenous peoples, religion, prayer, and magic were important elements of healing and often inseparable from the use of herbs. In the version of the Iroquois creation story previously mentioned, disease was not part of the original picture but arose through the influence of the evil twin Flint and neglect of the sacred ceremonies. The creator provided herbal medicines and instructions on how to use and collect them as consolation but said that only a few people would ever know all of their names (Herrick, 9). In another version of the story medicinal plant seeds were brought to earth because the first person, Sky-woman, had them clenched in her fists when she fell from the sky (*Cultural Plants and Trees*, 3). According to Francello some Seneca believe that a number of the important plants were brought to the area by former inhabitants (76).

One author writes that, "The Seneca approach to medication was not one of exactitude with carefully prescribed amounts. Their tendency was to be very generous in dosage on the theory that if something is good then an ample amount is that much better. Also, if one plant or root is not the answer, several of them used together increases the possibility of beneficial results" (qtd. in Francello, 78). This view sounds a bit condescending. An herbalist would point out that it was not as important with plant remedies to use an exact amount since they are not nearly as lethal as concentrated modern extracts, and that combining several roots together might very well have a synergistic effect known well-known to the practitioner rather than working through trial by error as the writer suggests.

In regard to the Seneca, the main and more or less only published treatise on the subject is *Iroquois Medical Botany* by James Herrick. Herrick's work reports and interprets much previously unpublished data collected by F.W. Waugh between 1912 and 1914 and by W.N. Fenton between 1933 and 1942. Although many of these herbalists were 80 or 90 years of age in the early 1900's they were certainly exposed to European ideas of disease (not to mention many new diseases) and it shows in the work. Nevertheless many traditional treatments and beliefs held strong.

Herrick claims that, "In the traditional Iroquois world, everything had a use and a duty as intended by the Creator. In reference to plants, it is often heard that everything is good for something. Everything had a use, and this use was divinely imparted. Likewise, collectors of various medicinal herbs were required to 'remind' a plant of the divinely imparted duty it had to human beings" (16). Not only was everything useful, but one plant often had several uses. These uses were not written in stone, but varied from individual to individual, from tribe to tribe, and undoubtedly over time. In the Iroquois worldview people did not get sick from bacteria or viruses, but from imbalance caused by violating the ways of the creator (taboo), denial of worldly or spiritual desires, witchcraft, or evil forces. Treatment for this imbalance ran the gamut from self-treatment to that preformed by a family member, friend, elder, herbalist, witch doctor, or medicine society (65).

Certain medicines were preventative. For example, medicines were taken in the spring and fall to stave off illness in the following months. Other medicines were good for winning a lacrosse game or preventing snakebite. The way medicine was collected was different for every individual but always important. Often it involved an offering of tobacco. One commonly finds that with emetics the bark was scraped upwards and with cathartics it was scraped downwards. Certain plants are considered to be especially powerful in Iroquois medical botany. Examples include plants that grow near water, grow on or near graves, have thorns, barbs, or burrs, are human shaped, or are evergreen (91). A few interesting plant uses reported by Herrick include:

Balsam Fir-Several herbalists suggest it for coughs and colds. The same can be said for white pine, hemlock and several other evergreens (108).

Goldthread-Sore mouth, canker sores. This use is still commonly known among native and non-native herbalists (120).

Stinging Nettle-“Cut a staff of (1) [red osier dogwood] about 3-4 feet long. Cut this staff in two and make a cross. Secure cross with strip of bark. Sharpen one end of cross and stick in ground. Find a snake (any kind) pick it up, holding it between thumb and index finger. It will wrap around your wrist. When around wrist, cut its throat...it will stop moving. When no longer moving, remove from wrist, it will maintain a curled position. Place snake on cross by curling its body around the crossbar of the cross. Let the blood from the snake continue to drop as it hangs from the cross. Let it drip into a white cup or container. Let the blood dry. When dried, mix nettle in with dried blood of the snake and the dried blood of the person you want to witch. Then burn tobacco and say what you want to happen to the person you are witching. If it works, what you have said will happen within 1 month” (134).

Doorweed-“Love medicine. Select root of plant with a good circle of stems. Dry the root, powder it, keep in a packet and place a little in other person's tea, syrup, etc. In a crowd this makes you seem like the best looking” (144).

Yellow Violet- “To cure facial eruptions that may turn to worms and are caused by going with a woman during her menses. Her breath on your face will do it. Add a plant to 2 qt. water and boil quite a bit. Drink 1/2 qt. and was with the rest” (149).

Wild Indigo-“For cramps in the arms, legs, stomach. Medicine for athletes. Boil a handful of the root in 2 qt. water for 5 min. Rub liquid on legs. Bathe before game to run fast” (170).

Strawberry Bush-“To stimulate suppressed menses caused by a girl having mustard, pepper, or soda. Put a small bundle of vines in 6 qt. water. Boil quite a bit until 1 qt. remains. Drink all they want--every hour is best. Do not take when pregnant because it will induce abortion” (180).

Red Maple- “Trapping medicine, cleans away all human scent. Muskrats will not even see the trap. Take short shoots, bend them, and make into a bundle. Tie 2-3 bundles. Put in pot filled with water. Boil. Put traps in the hot solution and boil”(186).

Angelica-“Good for ghosts inside. About sundown you hear a rattling. Caused by improper feast for the dead. Put 1 root in 2 qt. water, smash and steep a little. Wash body and sprinkle inside house and out, also around places dead personal was liable to go” (194).

Bergamot-“General lassitude. Make into a tea. Drink when you feel like it” (208).

Jack in the Pulpit-“For baby when it lies still all day and night as if thinking about something...is lonesome, not satisfied with home (they know was much as old people). Smash 2 roots, put in 1 qt. warm water. Do not let stand long. Wash whole body” (240).

Games and Sports

Certain types of trees and other plants were used in making equipment for games, such as the popular snowsnakes game. Snowsnakes were made from maple, walnut, or hickory and were finely carved to travel as far as possible when thrown down an icy runway. Men and women played stick and ball games. Lacrosse was a men’s game. Women played “shinny” or “double ball”. The sticks for these games were fashioned from a wood such as hickory and the balls were made of a hardwood knot or a deerskin stuffed with moss or hair.

Snowshoeing, target shooting and spear throwing were also sports. Snowshoe frames were made of hickory. A variety of hoop games were played. The hoops too were generally made of made of hickory saplings. In these games poles were thrown at stationary hoops, javelins were thrown through rolling hoops, or darts were used to pin down a hoop spun parallel along the ground (Lyford, 41). Peach, cherry, or persimmon stones, or were used for gambling with beans or wooden sticks as tally counters.

Other Plant Uses

Paper birch was not common in Seneca territory. According to Lyford, canoes were made of the bark of the oak or elm. Oak was thought to last longer. The slabs were bent and stitched to a frame of ash or hickory with basswood fiber, and the canoe was ribbed with ash. Heavier canoes were made of logs hollowed out by coal burning. Trees were felled for these canoes by repeatedly burning around the base and scraping away the char.

-Toboggans were made of bark.

-Fishing nets were made of cordage knotted together using a needle. This work was often done by the old men of the tribe and wild hemp was the favored material.

-War clubs were made of heavy wood.

-Wampum belts were strung on vegetable fibers that included slippery elm, cedar, dogbane, swamp milkweed, and hairy milkweed

-Other sources of fiber included leatherwood, nettle, and mulberry

-Pack frames were made of hickory or ash

How Things Changed

It seems that the Iroquois were always an agricultural people. Though it is suggested that they became more settled after the formation of the league, it was the arrival of the white man that changed their lives and their relationship to plants to the greatest extent (Lyford, 15). As the Europeans moved in, the Iroquois adopted many of their crops. Lyford claims that orchard trees such as apples, peaches, pears, and new kinds of cherries were being grown by the year 1779 (17). New vegetables included tomatoes and potatoes. Potatoes, although South American in origin, seem to have taken a circuitous route to the North America. They eventually grew grains such as wheat, buckwheat, oats, rye and hay as animal feed and for personal use (Swatzler, 234). Despite the addition of these plants, as well as domestic animals, they remained engaged in hunting, fishing, and gathering.

For the Seneca of the Upper Allegheny the change to European style farming may have been expedited by the efforts of Quakers. In the late 1700's Chief Cornplanter sent a request to Philadelphia for some Quakers to come educate his people. At this time Cornplanter and his people were living on land known as the Cornplanter Grant. The land had been awarded to the Chief and his descendents for his assistance to the new United States Government after the revolutionary war. His most important contribution was helping to convince the Seneca and other Iroquois tribes to support the new government and attempting to talk their hostile Ohio neighbors into doing the same (they declined). The Seneca were not necessarily convinced of the superiority of this "civilized" way of living but some, including Cornplanter, saw compromise as the only way to survive. Interestingly, Cornplanter became embittered by the duplicity of the whites in his late years went through a nativistic phase rejecting all of their inventions and burning the medals awarded to him by the government, but at this time he encouraged the introduction of animal husbandry, plow agriculture, sawmills, and gristmills.

Cornplanter wanted to maintain hunting as an option but the Quaker teachers and the United States government had their own agenda for civilizing and assimilating the Indians. As Swatzler explains, "The model that the Quakers and the government had in mind was European-American agrarian society, as it existed at the end of the 1700s. That society was based on private property, a dispersed settlement pattern, and the profit motive. Seneca society at that time was based on communal ownership of land, organized around village life, and operated on the principle of reciprocal sharing"(242). Quaker teachers encouraged further reliance on crops and less on hunting and "indolence". They did not like to see the Seneca women toiling in the fields while the men were "spending their time in idleness, amusing themselves with their bows and arrows and other useless practices" (qtd. in Francello pg. 113).

No doubt the Quakers were forcing their values upon the Seneca. To the Indians hunting was not an idle sport but an important source of sustenance and Seneca women were very highly respected for the important part they played in holding together the family and society. Furthermore, Mary Jemison, a white woman taken captive as a child felt that:

Our labor was not severe; and that of one year was exactly similar, in almost every respect, to that of the others, without that endless variety that is to be

observed in the common labor of the white people. Notwithstanding the Indian women have all the fuel and bread to procure, and the cooking to perform, their task is probably not harder than that of white women, who have those articles provided for them; and their cares certainly are not half as numerous, nor as great. In the summer season, we planted, tended and harvested our corn, and generally had all our children with us; but had no master to oversee or drive us, so we could work as leisurely as we pleased. We had no ploughs on the Ohio; but performed the whole process of planting and hoeing with a small tool that resembled, in some respects, a hoe with a very short handle.

Our cooking consisted in pounding our corn into samp or hommany, boiling the hommany, making now and then a cake and baking it in the ashes, and in boiling or roasting our venison. As our cooking and eating utensils consisted of a hommany block and pestle, a small kettle, a knife or two, and a few vessels of bark or wood, it required but little time to keep them in order for use. (Seaver, 83)

Nevertheless, the Quakers felt that the best prospects for the future of the Seneca lay in farming. Given the circumstances they may have been right. Seneca land was being begged, borrowed or stolen off and subsequently raped for timber, tan bark, oil and other resources. By the late 1800's many game animals were nearly extinct thus the Indians were no longer able support their former way of life. Now they had to either make money or make small areas of land more productive. The Quaker's plan for the Indians involved both—growing cash crops. To grow enough crops for market draft animals were necessary to pull the plows and strong males were required to help in the field. The reliance on draft animals also created a need for fences and for fields devoted specifically growing their feed. It is suggested that this type of farming precipitated the move (favored by the Quakers) from communal living to spaced-out single-family dwellings because the men were reluctant to do traditional women's work in sight of the other men of the community (Francello, 173). Women were now relegated to the house where they could practice crafts such as spinning and weaving. At least that was the way the Quakers wanted it, in reality men began to do the plow work and grow the grains while the women continued tending the vegetable gardens.

With the coming of the white man many traditional crafts died out such as the making of buckskin clothing and clay pottery. Wood and bark vessels, utensils, and tools were replaced by metal ones. However, Lyford admits that basket making increased as white trade created new uses and demand for items such as laundry hampers, sewing baskets, and cake holders with lids (60).

Shortly after the Quakers showed up another big change occurred on the Upper Allegheny. Handsome Lake, Cornplanter's half-brother received a series of religious revelations beginning in the year 1799. This was a time of much drunkenness, disease, and destitution in the Seneca community and although Handsome Lake's teachings reinforced some of the white man's ways such as animal husbandry, single family dwellings, and the denunciation of witchcraft and abortion/sterility inducing plants, they also put new life into some of the traditional ways by offering a moral code of conduct that emphasized helping others and reinstating/reinvigorating the seasonal celebrations such as the Strawberry Festival. Today Handsome Lake is regarded as a prophet and his teachings are still followed in what is known as the Longhouse Religion.

Change has continued unabated since these trying times. In the early 1900's exotic plant diseases struck some of the important plants of the Iroquois. Chestnut blight was first discovered on American chestnuts in 1904 and quickly spread throughout their range. Today there are very few healthy American chestnuts, though massive efforts are being undertaken to breed resistant trees (*Anagnostakis*). Dutch Elm Disease, first introduced to the United States around 1930, has destroyed over half of the American elms, a tree that, as we have seen, was vital to the Seneca way of life. Although the elm has fared better than the Chestnut, it is now uncommon to find an older tree (*Stack*).

More trouble was experienced in the middle of the century. A treaty in 1794 had secured the little bit of remaining Seneca land, more or less until 1962 when construction started for the Kinzua Dam (in reality land continued to be sold/wheedled away from them until 1842 and was eroded thereafter by railroad leases and the initially illegal white villages that sprang up around them such as Salamanca, NY). At this point there were four Seneca reservations in New York State: Allegany, Cattaraugus, and Oil Spring belonging to the Seneca Nation of Indians and Tonowanda belonging to the Tonowanda Band of Senecas. Oil Spring is just one square mile and has no permanent residents. There was also the Cornplanter Grant in Pennsylvania just a few miles downriver from the Allegany Reservation.

The building of the dam flooded 1/3 of the approximately 30,000 acres of the Allegany reservation as well as much of the Cornplanter grant. Not only that but the flattest, and most agriculturally productive lands were flooded leaving the Indians with 10,000 acres of steep hillside and 10,000 acres of congressional villages leased by whites. These were troubling times: "For most children there was no mechanism with which to deal with the trauma they were experiencing. The schools did not provide a forum for discussion, although they did serve to transmit information. One teacher had his students build a model of a dam, complete with goldfish, in order to demonstrate the functions of a dam. A student, perhaps inspired by the Seneca meaning of 'Kinzua' (fish on a spear), reacted by promptly spearing the fish with a newly sharpened pencil!" (*Bilharz*, 58).

Despite their best efforts to stop the building of the dam the families in the area to be flooded were removed and given to new subdivision-style ranch houses in the villages of Steamburg and Jimmersontown. This changed many aspects of their former lifestyle. The land had made up for an important part of their income (or lack of income) up until their removal. According to *Bilharz* a survey done at the time indicated that, "all of the families used utilized wild herbs, 65 percent hunted deer, 62 percent use wild fruits, and 34 percent fished. Firewood was a particularly important resource, as over three-quarters of the houses were heated by wood and a third used it for cooking" (75). Forays for collecting berries were a social custom among women that was difficult to continue after the removal. For men hunting out of season for sustenance could not be practiced in the close confines of the new towns where illegal activity would be more visible (The Seneca originally resisted the right of New York State to regulate their ability to hunt on their own lands). *Bilharz* adds, "Many of the flowers that women would collect and sell in Bradford or Buffalo were gone, as were many of the medicines. People complained of being sick more frequently. Timber, for firewood or basket splints, was less plentiful and more distant. Despite evidence to the contrary from New York State, there was a deep-seated belief that the soil at the new sites was not fertile and so few people planted gardens, thus incurring additional food expenses" (84). Luckily, this belief was eventually combated through a campaign by the Seneca government. There was no help

for adjusting to many of the other changes. Some say that there was an increased mortality rate directly after the move because many elders died of a broken heart

Since the building of the Kinzua Dam Allegheny Seneca land has been further threatened by road building and highway expansion through the reservation. Again these activities have been met with protest and a certain amount of unwillingness to give up the land. This was the case in the 1970's when NY Route 17 was expanded from a two-lane highway into a four-lane expressway. Currently there are plans underway to expand the two-lane Route 219 which connects Interstate 90 just south of Buffalo, NY, to Interstate 86 in Salamanca, crossing Seneca Nation land. A study prepared by the Seneca Nation called *Cultural Plants and Trees: A Study of the Proposed U.S. Route 219 Corridor* states:

Just as palm trees cannot flourish in northern climates, certain species of medicinal plants cannot flourish in unsuitable areas. Many of these plants prefer moist low lands. While the federal government mandates the protection of endangered and threatened species, the Seneca Nation has amplified concerns for plants and animals due to limited land and resources. Seneca herbalists have experienced difficulty finding medicinal plants. There has been a drastic decrease in the abundance of particular plants. Many common plant species can be found in yards, open fields, and along roadways. Those found along roadways are unusable due to the chemical sprays that destroy these "weeds" and roadway pollutants. The common plants (e.g. plantain, dandelion, and burdock) are known as social plants because they are readily available in household yards. Other plants such as trilliums and wintergreen are often found in wooded areas. Many plants used for medicinal mixtures (e.g. monarda, jewel weed, and wild ginger) grow only in shady areas, lowlands, and wetlands. Some of these plants (e.g. lady slippers, trailing arbutus and bittersweet) are vulnerable to habitat loss and need to be protected. Flooding of the Allegheny River Valley by the Kinzua Dam in the 1960's resulted in the loss of manroot and low bush blueberry, which grew in the Onoville and Red house areas of the Allegheny territory, respectively.

The Senecas' concern is twofold. Elderly herbalists have noted difficulty finding specific plants, that were once abundant. The second concern is there is a notable increase in interest by the younger generation to learn from the elder herbalists about the identification, preparation, and uses of wild medicinal plants. There is a growing trend among the Senecas to revive a diminishing art and to embrace the spiritual value of nature's gift. This requires a concerted effort by all to promote the interest in and protection of all remaining medicinal plant life. (6)

Seneca plants, indeed plants all over the world, are facing issues such as habitat destruction, over-harvest, and invasive species, but a different sort of issue is the ongoing political threat to take away the Seneca's right to sell tax-free tobacco. According to the "Honor Indian Treaties" campaign, "Since 1794 the U.S. has acknowledged Indian independence, and the Treaty of 1842 clearly says the Seneca Nation will not be taxed by any US government. Including New York State. The state's unconstitutional action will cause over 1000 Indians and non-Indians to lose their jobs, consumer prices to rise, and businesses to close." So far the threat has not become reality.

Although the Seneca and the plants they once relied on have faced hardships and continue to experience challenges there are efforts underway to combat their loss and the loss of traditional knowledge. For example, a few groups are beginning to grow and sell native heirloom seeds. The heirloom seed movement is a step away from standardization and dependence on large seed corporations and towards historical preservation, diversity, and self-sufficiency. Heirloom varieties are often particularly robust and suited for the climate in which they developed making them more resistant to insect invasion, and adverse weather conditions. Pinewoods Community Farm on the Cattaraugus Territory grows a traditional Iroquois White Corn and sells traditional corn products such as hominy and roasted flour. Other groups are doing the same. Meanwhile, the Ganondogan State Historical Site, near Victor New York, was once a thriving Seneca village. Today it hosts a visitors center, a full-sized replica of a bark longhouse, and several hiking trails including the “Earth is Our Mother Trail,” an interpretive trail dedicated to plants and their uses. Occasionally plant walks are given by an experienced herbalist.

Back on the Upper Allegany, some Seneca still practice the traditional crafts. Basket making and snowsnake making are two that are popular. In 1998 the Faithkeepers School opened to teach Seneca children and teenagers the traditional ways including language, culture, history, religion, plant medicine, and gardening. The Seneca-Iroquois National Museum located in Salamanca, NY contains exhibits that include a smaller replica longhouse, beadwork, baskets, cornhusk objects, pottery, dress, tools, and artwork. The museum also sells many of the books referenced in this paper.

These are only a few of the efforts of the Seneca, not to mention the many projects being undertaken by the other Iroquois tribes, projects such as the Jake Thomas Learning Center in Ontario where Cayuga Chief Jake and his wife Yvonne, have strived to conserve their oral cultural traditions, arts, and narratives, or the Kanatsiohareke Mohawk community where a small group of traditional Mohawk cultivate and preserve the land, celebrate the seasonal ceremonies, run a bed and breakfast and a native craft shop, and first developed the idea of a “Carlisle Indian Boarding School in Reverse”. This school would attempt to reverse the assimilation and cultural genocide experienced during the boarding school era and has currently gotten its start as a summer language immersion program.

And now, we will give thanks to he himself, the Creator. It is true that he has provided everything that we have now. Now our minds will be together. That is all.

-translation of the closing line of the Ganö:nyo:k or Thanksgiving
Address as provided by the Seneca-Iroquois National Museum

List of Scientific Names

In instances where no scientific name was recorded these represent educated guesses as to what plant the author might have been referring to. The majority of the names were taken from Ann Rhoads' *Plants of Pennsylvania*.

Common Name	Scientific Name
Acorn/oak	<i>Quercus spp.</i>
Angelica	<i>Angelica spp.</i>
Apple	<i>Malus pumila</i>
Arrowhead	<i>Sagittaria spp.</i>
Ash	<i>Fraxinus spp.</i>
Aspen	<i>Populus spp.</i>
Balsam fir	<i>Abies balsamea</i>
Basswood	<i>Tilia americana</i>
Bean	<i>Phaseolus spp.</i>
Birch	<i>Betula spp.</i>
Bittersweet	<i>Celastrus scandens</i>
Black ash	<i>Fraxinus nigra</i>
Black oak	<i>Quercus velutina</i>
Blackberry	<i>Rubus allegheniensis and others</i>
Blueberry	<i>Vaccinium spp.</i>
Buckwheat	<i>Fagopyrum esculentum</i>
Burdock	<i>Arctium spp.</i>
Butternut	<i>Juglans cinerea</i>
Cattail	<i>Typha spp.</i>
Cedar	<i>Juniperous virginiana or Thuja occidentalis??</i>
Checkerberry	<i>Gaultheria procumbens</i>
Chestnut	<i>Castanea dentata</i>
Choke cherry	<i>Prunus virginiana</i>
Corn	<i>Zea mays</i>
Crab apple	<i>Malus coronaria</i>
Cranberry	<i>Vaccinium macrocarpon</i>
Cucumber	<i>Cucumis sativus</i>
Cucumber magnolia	<i>Magnolia acuminata</i>
Currant	<i>Ribes spp.</i>

Dandelion	<i>Taraxacum officinale</i>
Dewberry	<i>Rubus hispidus and others</i>
Dogbane	<i>Apocynum androsaemifolium</i>
Doorweed	<i>Polgonum arenastrum</i>
Elderberry	<i>Sambucus canadensis, Sambucus racemosa</i>
Elm	<i>Ulmus americana</i>
Giant puffball	<i>Calvatia gigantea</i>
Goldthread	<i>Coptis trifolia</i>
Gooseberry	<i>Ribes spp.</i>
Grape	<i>Vitis spp.</i>
Groundnut	<i>Apios americana</i>
Hackberry	<i>Celtis occidentalis</i>
Hairy milkweed	<i>Asclepias incarnata ssp. Pulchra?</i>
Hawthorn	<i>Crategus spp.</i>
Hazelnut	<i>Corylus spp.</i>
Hellebore	<i>Veratrum viride</i>
Hemlock	<i>Tsuga canadensis</i>
Hen of the woods	<i>Grifola frondosa</i>
Hickory	<i>Carya spp.</i>
Highbush cranberry	<i>Viburnum trilobum</i>
Horse chestnut	<i>Aesculus spp.</i>
Huckleberry	<i>Gaylussacia spp.</i>
Husk tomato	<i>Physalis spp.</i>
Indian cucumber	<i>Medeola virginiana</i>
Indian hemp	<i>Apocynum cannabinum</i>
Iris	<i>Iris spp.</i>
Jack-in-the pulpit	<i>Arisaema trilobum</i>
Jerusalem artichoke	<i>Helianthus tuberosus</i>
Jewelweed	<i>Impatiens capensis, Impatiens pallida</i>
Lady slipper	<i>Cypripedium spp.</i>
Lamb's quarters	<i>Chenopodium album</i>
Leatherwood	<i>Dirca palustris</i>
Leek	<i>Allium tricoccum</i>
Low bush blueberry	<i>Vaccinium pallidum</i>
Manroot	<i>Panax quinquefolius</i>
Marsh marigold	<i>Caltha palustris</i>
Mayapple	<i>Podophyllum peltatum</i>

Meadow mushroom	<i>Agaricus campestris</i>
Milkweed	<i>Asclepias syriaca</i> , possibly others
Monarda	<i>Monarda spp.</i>
Morel	<i>Morchella spp.</i>
Musk Melon	<i>Cucumis melo</i>
Mustard	<i>Brassica nigra</i> and others
Nannyberry	<i>Viburnum lentago</i>
Nettle	<i>Urtica dioica</i> , also possibly <i>Laportea canadensis</i>
Oats	<i>Avena sativa</i>
Oyster mushroom	<i>Pleurotus ostreatus</i>
Partridge berry	<i>Mitchella repens</i>
Pawpaw	<i>Asimina triloba</i>
Peach	<i>Prunus persica</i>
Pear	<i>Pyrus communis</i>
Peppermint	<i>Mentha spp.</i>
Pepperroot	<i>Cardamine spp.</i>
Persimmon	<i>Diospyros virginiana</i>
Pigweed	<i>Amaranthus spp.</i>
Plantain	<i>Plantago spp.</i>
Plum	<i>Prunus americana</i>
Pokeberry	<i>Phytolacca americana</i>
Potato	<i>Solanum tuberosum</i>
Pumpkin	<i>Cucurbita pepo</i>
Purslane	<i>Portula oleracea</i>
Quince	<i>Cydonia oblonga</i>
Raspberry	<i>Rubus idaeus</i> (red), <i>Rubus occidentalis</i> (black)
Red maple	<i>Acer rubrum</i>
Red Mulberry	<i>Morus rubra</i>
Red Willow	<i>Cornus amomum</i> , <i>Cornus sericea</i>
Rock tripe	<i>Umbilcaria spp.</i>
Rye	<i>Secale cereale</i>
Sassafras	<i>Sassafras albidum</i>
Sensitive fern	<i>Onoclea sensibilis</i>
Serviceberry	<i>Amelanchier spp.</i>
Sheep sorrel	<i>Rumex acetosella</i>
Silver maple	<i>Acer saccharinum</i>
Skunk cabbage	<i>Symplocarpus foetidus</i>

Slippery elm	<i>Ulmus rubra</i>
Solomon's seal	<i>Polygonatum spp.</i>
Spicewood	<i>Lindera benzoin</i>
Spring beauty	<i>Claytonia spp.</i>
Squash	<i>Curcubita pepo</i>
Strawberry	<i>Fragaria virginiana, Fragaria vesca</i>
Strawberry bush	<i>Euonymus americana</i>
Sulfur shelf	<i>Laetiporus sulphureus</i>
Sumac	<i>Rhus spp.</i>
Sunflower	<i>Helianthus spp.</i>
Swamp milkweed	<i>Asclepias incarnata</i>
Sweet gale	<i>Myrica gale</i>
Sweet grass	<i>Hierochloe odorata</i>
Thimbleberry	<i>Rubus odoratus</i>
Tobacco	<i>Nicotiana rustica</i>
Tomato	<i>Solanum lycopersicum</i>
Trailing arbutus	<i>Epigaea repens</i>
Trillium	<i>Trillium spp.</i>
Walnut	<i>Juglans nigra</i>
Water melon	<i>Citrullus lanatus</i>
Watercress	<i>Nasturtium officinale</i>
Waterleaf	<i>Hydrophyllum spp.</i>
Wheat	<i>Triticum aestivum</i>
White ash	<i>Fraxinus americana</i>
White pine	<i>Pinus strobus</i>
Wild asparagus	<i>Asparagus officinalis</i>
Wild cherry	<i>Prunus serotina, Prunus pensylvanica</i>
Wild garlic	<i>Allium spp.</i>
Wild ginger	<i>Asarum canadense</i>
Wild indigo	<i>Baptisia tinctoria</i>
Wild onion	<i>Allium spp.</i>
Wild pea	<i>Lathyrus spp.</i>
Wild rice	<i>Zizania aquatica</i>
Willow	<i>Salix spp.</i>
Witch hazel	<i>Hamamelis virginiana</i>
Wood betony	<i>Pedicularis canadensis</i>
Wood sorrel	<i>Oxalis spp.</i>

Yarrow	<i>Achillea millefolium</i>
Yellow dock	<i>Rumex crispus</i>
Yellow pond lily	<i>Nuphar lutea</i>
Yellow violet	<i>Viola pubescens</i>

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Resources

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<http://www.faithkeepersschool.com>

The Faithkeepers School

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Phone: 716-354-2219

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Ganondagan State Historical Site

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Victor, New York 14564-0113

Phone: 585-742-1690

Kanatsiohareke Mohawk Community

<http://www.mohawkcommunity.com/>

4934 State Highway 5

Fonda, NY 12068

Office: 518-673-5356

Fax: 518-673-5575

Seneca-Iroquois National Museum

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Seneca-Iroquois National Museum
814 Broad Street
Salamanca, NY 14779
Phone: 716-945-1760
sue.grey@sni.org

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Fax: 519-445-0802

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Iroquois white corn products

Heritage Foods USA

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Native and small farm food products

Tsyunhehkwa Center

<http://wellness.oneidanation.org/about.shtml>

Wisconsin Oneida farming project

Little Pine's Native Heritage Place

<http://www.littlepinecrafts.com/>

Native crafts and seeds