

## Introduction

**C**orn is so ordinary and ubiquitous in contemporary life that we often overlook its profound, transformative powers. We drive by mile after mile of cornfields on a summer day, seldom even glancing at this strange, yet incredibly productive plant that has shaped human history in the Western Hemisphere for more than five thousand years. This book provides a more intimate look at corn in Iroquoia, an area that stretches from Ontario, Canada south to the Appalachian Region and west to the Ohio Valley. Although many people think that the first in-

1



**Figure 1**

*Iroquois Corn in Bushel:* This eight-rowed corn with long slender ears and white kernels is called Iroquois (or Tuscarora) White Flour Corn. It has been grown in Iroquois communities for several hundred years and is still used to make traditional corn soup and corn bread. Courtesy of Jane Mt.Pleasant.

**Figure 4**

*The Three Sisters*, drawing by John Kahionhes Fadden (1988).  
Courtesy of the New York State Museum, Albany, NY, 12230.

## Corn Through Western Eyes

According to ethnobotanists, corn (maize) was originally developed by indigenous farmers in Central America and was transported over several millennia both north and south from its place of origin. Teosinte, a grass found in the central highlands of Mexico and Guatemala, was a wild ancestor of corn and was used in the domestication and breeding of corn by indigenous peoples from that region almost six thousand years ago. The transformation of teosinte into corn resulted in a tremendous increase in grain size and number, leading to enormous gains in food production for farmers who adopted it. As a result, corn was highly valued and moved rapidly across the major trade routes dissecting the Americas. It moved south into Peru, where it became a staple of the Inca Empire, and north through Mexico and into the Southwest and the Mississippi Valley of what would become the United States. In each of these areas, complex civilizations developed that depended on the cultivation of corn.

Archeologists now date corn's first appearance in New York

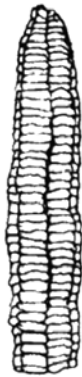
to 100 BCE where it became an increasingly important source of food for Native communities over several hundred years. In other areas of the Eastern Woodlands, corn replaced other domesticated plants used by the region's earliest farmers, such as *Chenopodium berlandieri* (a close relative of common lambsquarters or goosefoot), *Iva annua* (sumpweed), and *Helianthis annuus* (sunflower). But no evidence of these earlier domesticates has been found in New York. By the middle of the fourteenth century, a sophisticated polycultural cropping system that used corn, bean, and squash provided the economic foundation for Iroquois communities (see figure 4). These three crop plants were widely cultivated across the Northeast by the time the Confederacy was established, as described in the Great Law.

## Corn at Contact

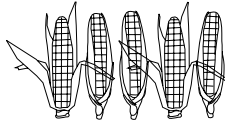
By the time Europeans arrived in North America, corn was the staple food crop, cultivated in extensive holdings from Québec to Florida. In the Northeast during the sixteenth through eighteenth centuries, as European explorers and military conquerors moved inland from the New England coast, they described in their journal entries the widespread production of corn by Native peoples. Much of what would become New York State's prime farmland was first used by Iroquois farmers to grow vast acreages of corn and other crops.

Reports by Jacques Cartier, Henry Hudson, and the French general, Marquis de Denonville, described the vast and productive cropland that was planted, cared for, and controlled by Native women. Denonville claimed that during his military strike against the Senecas at Ganondagan in 1687, his troops destroyed more than 1.2 million bushels of stored grain corn in a five-day period. Colonial travelers in the seventeenth century reported getting lost in the enormous cornfields outside the Onondaga villages. Mary Jemison, a European woman who was captured by the Shawnee in 1758 and later adopted by the Seneca, described in her biography how Seneca women planted, tended, and harvested large acreages of corn in the decades preceding the Revolutionary War.

During the Revolutionary War, soldiers in General John Sullivan's Expedition provided detailed descriptions of Iroquois agriculture in their journals and diaries. As they pillaged and razed Indian villages in central and western New York, soldiers reported

**Pop****Flint****Dent****Sweet****Soft or Flour****Pod or  
"Grandfather"****Figure 6**

*Corn Types or Races.* Credit: Marcia Eames-Sheavly. *The Three Sisters: Exploring an Iroquois Garden.* Ithaca, NY: Cornell University Cooperative Extension, 1993. Reprinted with permission of Marcia Eames-Sheavly.



## Botany of Corn

*“The vast majority of corn grown in the United States today is hybrid dent corn... People all over the world prize flint, flour, and dent corns, in a range of colors...”*

19

### Corn Types

**A**gronomists recognize five main types of corn, based on the characteristics of the endosperm (starch) within the kernel. The color of the corn kernel is relatively unimportant in identifying corn varieties or types. Corn endosperm can range from soft and floury to very hard or corneous. *Flour* corns have predominantly soft endosperm, and when ground they produce smooth flour. In contrast, *flint* corns have hard endosperm, while *dent* corns exhibit a mixture of soft and hard endosperm. Among these three types of corn, the hardness of the endosperm varies across a continuum, so that sharp delineations between them can be difficult. *Popcorns* have an extremely hard, corneous endosperm that traps water until it is heated and the erupting steam breaks open the endosperm. *Sweet* corns, with a shrunken endosperm, are composed primarily of sugars rather than starch (see figure 6).

The vast majority of corn grown in the United States today is hybrid dent corn, of which approximately 75 percent is used to feed animals. Still, industrial and food products made from corn represent an important use of corn. In the United States, tortillas, corn chips, cereal products, sweeteners, and alcohol now comprise an increasing portion of corn production. And in much of the developing world, corn serves as a major cereal grain for human consumption. People all over the world prize flint, flour, and dent corns, in a range of colors, for their food value, as well as their unique flavors, textures, and cooking characteristics.

is applicable to all open-pollinated varieties. A growing community of people across the United States and Canada are producing open-pollinated corn. You can find information in the References section on how to connect with them.

## Field Selection

**Y**our first task as a corn grower is to find the right place to plant. Corn grows best on level or gently sloping fields with moderate to good drainage and a soil pH of 5.8 or higher. For home gardens, select sites that receive at least six hours of full sun every day and that do not have wet or boggy areas. In order to minimize rootworm problems, do not plant corn following corn. Plant another crop in the field for at least one year before you plant corn there again. If you want to avoid mixing with other corn varieties, you should plant corn on a site that is isolated from fields of hybrid corn or other open-pollinated corn varieties. In general, corn should be planted at least 600 to 1000 feet from other cornfields to prevent pollination with those plants. If you are going to save your own seed, you may want to increase that distance. More information on this is provided below.

29

## Fertility Management

**S**oil samples should be taken from the field or garden and analyzed prior to planting. Your Cooperative Extension office can provide instructions on how to take and submit soil samples and can assist in interpreting the results. Liming and fertilization recommendations can then be developed, depending on whether you will be using organic, chemical, or a combination of these fertilization practices. Fertility recommendations will usually be lower for Iroquois corn than for hybrid field corn grown on the same soil because of the lower yield potential of Iroquois and other open-pollinated varieties. However, they may have similar fertility recommendations as sweet corn.

You can use green manures, cover crops, animal manures, compost, organic amendments such as bloodmeal, and/or inorganic fertilizers to provide nutrients for the corn. Many farmers supply the corn's nitrogen requirement by side-dressing before the last hoeing or cultivation. Cover crops are particularly ben-

percent moisture as it hangs in storage.

Ears of corn can also be stored in cribs where they will gradually continue drying to 13–15 percent grain moisture (see figure 12). Grain moisture must be below 25 percent at harvest in order to store corn safely in cribs. With the Northeast’s humid climate, a crib should be no more than four and a half feet wide. Because the ears complete drying during storage, the crib needs good exposure to the prevailing wind. Minimize husks, silks, fine particles, and other debris that impede air flow through the cribbed corn. It is also important to protect cribbed corn from rodent damage. Ear corn can also be artificially dried, but it is better to select varieties that will mature and dry in the field to moisture levels that are safe for crib storage. See the References section for information on building a corncrib.

Combining corn in the field is not recommended because of the difficulty caused by ear molds, described below. But corn ears can be shelled mechanically or by hand after they have dried to 12–15 percent moisture in cribs or on braids. Then they should be stored in airtight bins. Homebuilt granaries or barn floors can



**Figure 12**

Daniel Winnie’s Family, Six Nations Indian Reserve, ON. Photo: Canadian Museum of Civilization, F. W. Waugh, 1912, 17145. This photo depicts an example of a corncrib.

## Processing and Preparing Corn

Regardless of how the corn is prepared, cooks must vigilantly discard any discolored kernels before they begin preparing the corn because these kernels may be infected with mycotoxins, which can be highly poisonous.

Iroquois people are renowned for creating a multitude of savory dishes using corn (see figures 17 and 18). Many traditional dishes are made from immature or “green” corn, which is picked when the kernels are still milky. Arthur Parker’s and F. W. Waugh’s monographs provide information on these dishes. Once the kernels are hard and dry, cooks have many additional options. The corn can be ground and used immediately in breads or porridges. Traditionally, Iroquois people used a mortar and pestle to grind the corn, but a hand grain mill can also be used (see sidebar 3, pages 46-47, and figures 19 and 20, page 48). Grinding corn decreases cooking time, and adding spices, beans, dried

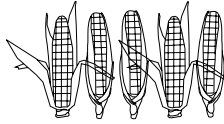
*continued on page 48*

45



**Figure 18**

[Woman Preparing Corn], painting by Ernest Smith. From the collections of the Rochester Museum & Science Center, Rochester, NY.



## References & Sources of Information

### Beginnings of Corn: A Haudenosaunee Perspective

Much of the information in this section comes from the translation and written expression of oral texts that are central to Haudenosaunee history. Sources that I used include:

Barnes, Barbara. *Traditional Teachings*. Cornwall Island, ONT: North American Indian Travelling College, 1984. This book provides translations and transcriptions of the Creation Story, the Peacemaker and the Great Law by chiefs, faithkeepers, and elders of the Six Nations.

Gibson, John Arthur. *Concerning the League: The Iroquois League Tradition as Dictated by John Arthur Gibson in Onondaga*. Memoir 9. 1912. Translated and edited by Hanni Woodbury. Winnipeg, MB: Algonquian and Iroquoian Linguistics, 1992. In addition to a summary of the formation of the League by Woodbury based on Gibson's text, this book provides a line by line translation of Chief Gibson's recitation of the Great Law, originally transcribed in Onondaga.

Mann, Barbara. *Iroquoian Women: The Gantowisas*. New York: Peter Lang Publishing, 2000. Mann, a Seneca scholar, brings together in one place many of the sources regarding the role of Jigonsaseh and the corn growers in the Haudenosaunee history.

Parker, Arthur. "How the World Began." Chap. 1 in *Seneca Myths and Folktales*. Buffalo, NY: Buffalo Historical Society, 1923. This book contains oral stories collected and summarized by Arthur Parker, a Seneca ethnologist working in the early part of the twentieth century. This version of the Creation Story