Association, a mutual support network for indigenous farmers. This active association is constantly developing solutions to problems that are common to indigenous, traditional farmers. These include engaging the interest of youth in their cultural traditions, finding profitable strategies to market agricultural goods, and creating effective ways to share equipment and knowledge. In 1996, fiscal sponsorship for the Traditional Native American Farmers Association was transferred to the Seventh Generation Fund, a Native American organization specializing in bringing other Native American groups to nonprofit status.

In 1991, NS/S initiated the Arizona RegisTree program, which is designed to recognize and protect outstanding heirloom perennial plants. Heirloom trees and other perennials in nearly 100 locations around the state are now registered through the program. Registrations include fruit trees, olives, and historically important native plants such as yucca, pinon, agave, and mesquite. The program is now operated by Prescott College.

Native Seeds/SEARCH has grown to 4,400 members and a catalog mailing list of 13,000 families. Membership is open to all with minimum annual dues of $25. Native Americans of the Southwest may join free. Since our inception we have distributed seeds to Native American and home gardeners by mail order. In 1997, we opened a retail outlet in Tucson and established a web site. In 2000, we distributed more than 20,000 seed packets, a quarter of which were distributed free to southwestern Native Americans. We are grateful for the generous support of members, donors, and foundations which makes this work possible.

Todd Horst is the Operations Coordinator for Native Seeds/SEARCH. *He appreciates and acknowledges the numerous Native Seeds/SEARCH staff who provided assistance with this overview of Native Seeds/SEARCH's history and programs.*

For more information on Native Seeds/SEARCH or to request a copy of our Seedlisting catalog, please visit our web site <www.nativeseeds.org>; email us at <info@nativeseeds.org>, or contact us at Native Seeds/SEARCH, 526 N. Fourth Avenue,Tucson, AZ 85705.

Barbara Corson

How to Bring a Cow into the Kitchen

Imagine trying to learn about the history of food if you had never used an open-hearth fire, smelled wood smoke, or felt the textures of stoneware, cast-iron, and pewter? We may "know" that people cooked over fires in the past, but this knowledge assumes importance only if we are able to relate to it through a personal point of reference. In addition, learning about animal-related history is more difficult—and less fun—without benefit of some kind of first-hand experience.

We are obviously aware that direct contact with animals was a fundamental part of food production in the past. Domestic animals were essential for power, food, and many other products in the days before electricity, plastics, and gasoline engines. Until the early 20th century, working with animals was both a necessary technology and a meaningful component of everyday life for the average person. However, as our society becomes more urban, it is increasingly difficult for people to identify with this significant aspect of our history, just as the typical museum visitor relates less and less to historic agriculture when small farms continue to disappear from the contemporary landscape and are replaced by large-scale agribusinesses.

Learning about animals and traditional agriculture requires conscious effort for most of us, but the effort is worthwhile. I would like to encourage historians and museum interpreters to explore the interesting range and diversity of functions that domestic animals played in America's food history. As an example, this paper provides an overview of some of the roles played in food production by *Bos taurus* and offers some ideas of how museum staff can figuratively "bring the cow into the kitchen."

Ruby, two weeks old. Photo by the author.

Cattle were domesticated around 4000 B.C. and have been an important part of food production on every continent except Antarctica. Although we tend to think of cows in association with meat and milk, the most significant contribution of cattle to food production has been arguably as a source of agricultural power. By pulling the first plows, cattle transformed human societies from "digging stick" cultures to agricultural communities capable of raising crops like cereal grains, fiber plants, and vegetables. Subsistence food production is possible without draft animals. However, when only human power is available, the crop production is so limited that hunting must remain a primary source of food and other necessities. The first task of early settlers (as opposed to traders and trappers) in North America was to hack fields and pastures out of the native forests, and in this work cattle were of fundamental importance.

Cattle used for draft purposes are commonly called oxen. In Europe and North America, oxen are usually castrated males since bulls are too unpredictable and cows have other important things to do with their energy, e.g., making milk and calves. To produce oxen, male calves not needed for breeding are castrated and trained to respond to voice commands. Because of their conformation, oxen are stronger than horses for their size and because of their temperament, they provide a slow, steady power which is well-suited for tough jobs like plowing ground full of rocks and tree roots. Without oxen to do the initial heaviest work, it is unlikely that wheat would have become a significant crop in North America by the second half of the 18th century. In addition to preparing a seedbed for cereal grains and other crops, oxen often provided power to transport the crops to mills or markets. Oxen also occasionally provided the muscle power for threshing, milling, or other food processing, e.g., crushing sorghum for syrup. In the late 18th century, the fertilizing power of manure was recognized. Applications of cow manure and limestone were credited with increasing wheat yields from 8 to over 30 bushels per acre in some areas. As a given area became more settled, horses gradually replaced oxen as the primary source of agricultural power. However, it is important to note that, worldwide, cattle still provide more power than tractors or any other animal. In this country, oxen are, for the most part, the great unsung heroes of the past, and deserve to be better remembered.

A museum doesn't need 40 acres of ground and a skilled team to demonstrate the role of oxen in food production. With even a few square feet of dirt and a shovel a historic site can illustrate several activities effectively, including turning the soil—which is important if you're going to plant seeds. It is valuable for the visitor to recognize that turning over even a little dirt is a hard task, especially if the ground has never been previously worked and is full of rocks and tree roots. If you compare digging in a rock pile to digging mellow garden soil, you will appreciate why the patient endurance of the ox was a historic advantage in plowing the rocky hills of New England.

If a house museum is fortunate to possess adequate acreage, having an ox on site—either as a permanent resident or a visitor for a plowing demonstration—is a tremendous opportunity for interpreting this part of historic food production. (And it helps us all remember that wheat doesn't grow in cereal boxes!) Training a team and working with oxen takes time and patience, but is not as expensive or dangerous as working with horses.

One of the more obvious signs of the domestic cow in the historic kitchen is the presence of milk, cream, butter, and cheese. Until the late 19th century, the average woman's summer workday revolved around dairy products. She started her day by milking a cow, spent part of the day processing the milk and caring for the animals, and ended her day by milking again. For our grandmothers and great-great-grandmothers, the skills needed to produce wholesome food with the help of a family cow were an essential component of running a well-fed household. Although the cow is recognized as a symbol of the "country life," most 21st-century Americans

get no closer to cows than the picture on a milk carton or cheese wrapper (or the pattern on a computer box). Since relatively little archival material about the "hands on" day-to-day dairying experience exists, it is unfortunately easy to ignore the cow when studying historic foodways. Luckily, animal biology is one of the few things that hasn't changed drastically in the past 300 years. Although great-great-great grandmother may not have written much in her journal about what it was like to get up early to milk the cow in 1790, museum staff and visitors can still experience what it was like by milking a cow (by hand, of course) today!

Learning about cow biology in general is an excellent way to bring *Bos taurus* into museum-related interpretations of historic foodways. Understanding that a cow has a calf every year in order to produce milk, that her gestation lasts nine months, and that cows were bred to bear their calves in the spring should affect the way farm and family journals, inventories, and receipts are interpreted. Of course, actually keeping a milking cow is a big commitment of time and energy—and not everyone will find the investment worthwhile. However, having a live-in cow is not the only way to teach about historic dairying techniques. With some searching, it may be possible to find a local dairy farmer willing (with the cow's gracious cooperation) to participate in a workshop for selected attendees or in a program, even if only as a "visual aide." With a creative approach, there are dozens of ways to remember the cow in the kitchen.

Butchering

The process of turning a living animal into edible meat and other useful products is clearly an interpretative area that many people today would find unpleasant. There is reason to believe that our ancestors found it equally unpleasant, but they lacked the option of distancing themselves from their meals by buying meat neatly wrapped in Styrofoam and plastic. Butchering animals was part of day-to-day life in the past. Obviously, it continues in this century, albeit unseen by most of us.

Historians and museum professionals have a unique and important educational role to play in this regard. The field of animal agriculture faces many important issues today. And though it's a cliché, our understanding of the past (or lack thereof) determines our future. If we can encourage people to examine the history of animal agriculture, there is hope that as a society we can more clearly understand our present situation and participate in a better future. The challenge is to encourage examination of these issues, while avoiding confrontation.

Demonstrations or workshops on butchering techniques may be appropriate for selected audiences such as a group of museum interpreters with experience in animal husbandry. But questions of ethics, aesthetics, and sheer logistics render the actual process of turning a 2,000 pound ox into 800 pounds of meat, 200 pounds of tallow, 500 pounds of viscera, 200 pounds of blood, and 300 pounds of hide, horns and hooves as an "educational program" open to the public an inappropriate option for most historic sites. Yet, this is not a reason to ignore the subject of butchering entirely. Less dramatic demonstrations, such as using sides or quarters of beef from local butcher shops or even illustrative drawings that relate cuts of meat to animal anatomy, might be considered. Here again, a knowledge of animal biology will help interpreters keep to the rational, moderate path—exploring an important aspect of food history while at the same time respecting the differing sensitivities and cultural perspectives that a diverse museum audience represents.

Responsible animal husbandry requires providing domestic animals with what they need to thrive, which presupposes an understanding of animal physiology and behavior. Naturally, first-hand knowledge of animal husbandry and biology will also assist interpreters in examining their own feelings on butchering and domestication. It is difficult to educate the public about using animals for food if staff are not comfortable with the concept.

Everyone who works with animals in public view can relate experiences, sometimes humorous, which illustrate the ignorance of the general populace on the subjects of animal physiology and behavior. Because animals are so profoundly important in our cultural heritage, learning more about these creatures and sharing that knowledge with others can help us understand and "experience" the past—and the present—in new ways. This, I think, is what "Living History" is all about.

Barbara Corson is a veterinary pathologist and amateur historian. She lives on a small historic farm in southeastern Pennsylvania, which she shares with a large variety of friends, both feathered and furry. Through her freelance interpretation service Hoofprints, she offers workshops and presentations on the skills required to work with cattle, horses, sheep, poultry, and other domestic animals.