Traditional uses of freshwater mussels

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If you’ve taken a walk by a lake during the recent drought in Southeastern Oklahoma, you’ve probably come across some freshwater mussel shells, left high and dry by the receding water. Oklahoma’s freshwater mussels come in a variety of sizes and shapes, and all of them have shells with beautiful mother of pearl on the inside, often in brilliant shades of iridescent pink, purple, and green. These pretty shells have captured the attention of a lot of people through the years, including many Choctaws. In this month’s edition of Iti Fabvssa, we’re going to look at some of the ways that Choctaw people have traditionally used freshwater mussels and their shells.

Freshwater mussels, known as “oka fulush” in the Choctaw language, are more diverse in the southeastern United States than in any other place in the world (Fig. 1). Some of these species are only an inch across when fully-grown; others may be more than 1 foot long, and have a life span of up to 100 years! Mussels are filter feeders that help to clean the water, and they provide food for a variety of animals and people.

Fig. 1. Mussel shells from Lake Texoma.

In the Choctaw homeland today, massive piles of mussel shell can still be found on the banks of rivers, near villages where ancient people pulled the mussels out of the water, cooked and ate them. They mostly preferred to eat some of the smaller, less tough species of mussels, like the Southern Clubshell (Smith 1983:414).

The mussel shells themselves, “okfulush hakshup,” are made up of three different layers. The inside of the shell is lined with mother of pearl. The middle portion of the shell wall is composed of tough, prismatic calcium carbonate crystals. The outside, dark-colored part of the shell is called the periostacum, which seals the other shell layers. Choctaw people took advantage of the unique structure and chemistry of these shells in several ways.

Beginning around 1,000 years ago, ancestral Choctaw potters began mixing mussel shell into the clay that they used for making pottery. First, the shells were burned in a fire to around 650 degrees Fahrenheit. At this temperature, the prismatic calcium carbonate in the shell chemically changes into a plate-like form. Thereafter, what was once hard shell can be easily crushed with the fingers into thousands of tiny flakes (Fig. 2). When Choctaw ancestors added these burned shell flakes to their clay for pottery, they physically and chemically changed the clay body. Pots made from the burned shell / clay mixture were less likely to crack or warp during drying and firing. The addition of the shell allowed low-fired pottery to be strong. There is even some evidence to suggest that the corn-based food they cooked in these pots was made more nutritious through a chemical interaction with the calcium in the shell.

Fig. 2. Flakey, burned mussel shell.

Choctaws made several types of objects from raw mussel shells. The biggest, thickest shells were often used as tools. Sometimes shells were broken in half, or roughly chipped along one edge to make woodworking implements. The sharp edge of the shell can shape green wood as quickly as a pocketknife (see Iti Fabvssa 10/10). A serrated mussel shell edge can be used on wood much like a metal rasp. Shells were used to de-bark trees, and to chip out soft charcoal during some stages of canoe making.

Mussel shells were used to make the blades of digging tools for agricultural work. A hole would be bashed through the middle of the shell and used to attach the shell to a wooden handle. The shell would be used much like a modern hoe blade (Fig 3). Shells were also used as scraping tools for shaping pottery. Some Tribes, possibly including the Choctaw, used matching mussel shells to pluck out hair.

Fig. 3. Left: ancient mussel shell hoe (3 views) from Lubbub Creek archaeological site in Alabama; Right: mussel shell hoe in use.

“Oka falush ishtimpa,” or mussel shell spoons (Byington 1915:566) were commonly made from the shells of mussel species such as Elephant-ear, which were relatively thick and flat. To make a spoon, the edges of the shell were ground away and rounded off. The finished product somewhat resembled today’s torti-

Fig. 4. Left: ancient mussel shell spoon (3 views) from Lubbub Creek archaeological site; right: mussel shell spoon with bean stew.

lla chip scoop (Fig. 4). Sometimes teeth were filed into the edge of the shell spoon so that it could be used to saw cooked meat or other foods.

Jewelry was also made from some of the flat shells. The types included flat, disk-shaped beads as well as gorgets. Gorgets are large necklace pendants that were often decorated by engraving designs into the surface of the shell and then rubbing it with pigment. This was a highly developed artform in some ancestral communities. The techniques for making gorgets and beads will be the subject of next month's edition of Iti Fabvssa.

Today, American freshwater mussels are severely threatened by environmental degradation. These filter feeders, with complex developmental cycles and long lifespans require clean water and healthy stream systems. Although North America has more diversity of freshwater mussels than any other place on the planet, this diversity is declining at a scary rate. Of the original, 297 North American mussel species 35 are now extinct, 70 are endangered or threatened, and 180 are critically impaired (Augspurer et. al. 2007). This serious decline is occurring as a result of stream channelization, soil erosion, water pollution, and invasive species such as the zebra mussel and Asian clam that crowd out the native species. Sadly, in many places in the southeast it is now rare to find freshwater mussels. We in southeastern Oklahoma are fortunate because many of our rivers, such as the Kiamichi are still relatively healthy and support large communities of freshwater mussels. Thanks to the continued diligence of Choctaw leaders on water conservation and stream health, it is hopeful that our children and their children will be able to have first-hand experience with these amazing native creatures.

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*A form is also available to submit questions to the authors of Iti F*abvssa.