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Desert Farmers

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The Assignment: Students were assigned to write a paper based on their learning about the Native American pre-history.

Many years ago, having migrated over time far from their original lands, a group of people settled in the Sonoran Desert in southern Arizona, and became desert farmers. They had with them only the very basic tools and other items necessary to surviving and thriving in the desert. They first had to clear mesquite trees and uproot sagebrush in order to mark out their fields and plant their first crops. Then they turned to constructing more permanent living quarters, cutting pillars from mesquite logs for the framing of their house. These people knew that to survive as farmers in the desert, they must irrigate, and they brought the knowledge of irrigation with them.

Centuries earlier another group of people had also moved into the Sonoran Desert, and over time settled down to farm. They too had the most basic of tools. They, too, used mesquite trees for framing their houses, and cleared sagebrush from fields. They, too, knew how to irrigate. They were the Hohokam Indians and they began farming the Sonoran sometime shortly after the time of Christ.

Those who came much later, in 1919 A.D., were members of the Herman and Laura Wolf family. In spite of the differences between their eras, both groups of people lived very parallel lives in many ways.

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The Sonoran Desert of south-central Arizona and northern Mexico is one of the richest deserts in the world in terms of density and diversity of native plants and animals. It rains both in winter and summer; temperatures vary from below freezing in the winter to above 120 degrees in the summer. Rivers flow from the nearby mountains into the hard desert soils. More than 3,500 species of plants grow in the Sonoran Desert and hundreds of animal species live there.[1]

The first group of people to put down roots was most likely the peaceful descendants of earlier peoples who had migrated north from what is now Mexico. They had no written language, so we don't know what they called themselves. But today they are called the Hohokam, a name given to them by later Native Americans, which means "those who have gone" or "all used up." [2] The geographic center of their settlement was between present-day Phoenix and Tucson, Arizona. And they established numerous farming settlements along the Salt, Gila and Santa Cruz Rivers.[3]

The latter group to arrive was also a peaceful people. They were descendants of Mennonites who had immigrated to this country from Bavaria about 1760 A.D., settling first in Pennsylvania, then Ohio, Indiana, Illinois, Kansas, and finally in the Sonoran Desert of Arizona.[4] Unbeknownst to them at the time, they chose their farmland very near the center of the earlier Hohokam sites.

The Hohokam arrived in the Sonoran with a very special knowledge -- that of canal building, and they knew it was the key to their survival. Initially, they built small irrigation ditches. As they gained experience, they expanded with larger and larger ditches and eventually constructed canals that connected the desert rivers to their fields. In fact, they built the most complex irrigation system ever constructed in aboriginal North America.[5] The desert floor sloped upwards toward hills and nearby mountains, so when the Hohokam built their canals, gravity pulled the water to the fields where crops had been planted.

When the Wolf family settled in the Sonoran, there was an existing canal marking the northern boundary of their property. Farmers on the north side of this canal irrigated using the gradient method. But, being uphill on the south side of the canal, the Wolfs had to dig an irrigation well and install a huge pump to move the water.[6]

In the Phoenix area today, archaeologists have discovered that many of the modern irrigation

canals are located in the same place as the prehistoric Hohokam canals.[7] Betty Jane Wolf Pace, who along with her sister Ada Lou Wolf Ford, is a daughter of Herman and Laura Wolf, recalls that "there was a man-made reservoir with earth levees…to the southeast of our farm. Both the reservoir and the (northern boundary) canal were there when we moved there. I am (now) convinced that the Hohokam probably built them."[8]

Making use of water generated by storms, the Hohokam collected it in broad shallow channels on alluvial plains and then deflected it easily onto fields at the sides.[9] They probably also dug short irrigation ditches, to direct water to crops grown on the floodplain.[10]

The Wolfs practiced floodwater farming as well. "Sometimes flood waters flowed across the desert from the mountains in the east," states Ada Lou Wolf Ford. "Daddy made ditches in the desert, strategically positioned to channel the flood waters into his ditch" in order to use this additional water.

Both the Hohokam and the Wolfs became successful farmers who obtained most of their food due to irrigation. Among the crops they both grew were maize (corn) and cotton. Maize was the mainstay of the Hohokam diet. They ate roasted corn on the cob during harvest season, but they ground most of their corn into flour. Cotton was used for both food and clothing. The cottonseeds were parched, ground, and formed into cakes. Cotton was also spun into yarn and then woven into clothing and belts.[11] The Hohokam also exported some of their cotton, as they traded with other groups.[12] For the Wolfs, cotton was one of their primary crops. And Herman Wolf also planted corn, some of which the family canned.[13] The Wolfs baled and sold their cotton. The seeds were used, in part, to feed the livestock.[14]

The Hohokam's fields were, or course, near their homes. And in the fields they built small field houses that served as temporary residences for field workers who lived there at various times while they worked in the fields.[15] Over time the Wolfs built two small cabins away from their larger home, that were used by field workers when they came in to harvest the cotton. Herman Wolf recruited Pima Indians from a nearby reservation to harvest his cotton.[16]

Desert shrubs provided seeds and fruit for both groups. In June, July and August the Hohokam gathered the fruit of the saguaro, cholla, prickly pear and barrel cactus. They dried and cooked these plants.[17] The Wolfs ate a broad-leaf succulent plant that they called parsley, and which grew in their yard. They put the leaves in vinegar with salt and pepper, and ate it with buttered bread. Laura Wolf, Herman's wife, also made cactus candy from barrel cactus, using the pulp.18 The Hohokam ate mesquite beans.[19] The Wolfs' horses ate mesquite beans, chewing them directly off the trees.[20]

The Hohokam hunted desert animals including birds, jackrabbits, cottontail rabbits and mule deer. In fact, deer and rabbit were their most important meat sources.[21] Herman Wolf loved to go deer hunting in season, and often brought home a mule deer. He also shot jackrabbits, cottontail rabbits, quail, and doves.[22]

For shelter, the Hohokam built simple brush- and dirt-covered pit houses. First, with great difficulty in the hard desert soil, a one to two foot deep pit was dug. This depth allowed the house to stay cool in summer and warm in winter. Postholes were dug to support a framework using cottonwood, mesquite, and/or willow for the support. After the framework was installed, the roof was built and covered with cactus ribs and brush from creosote bushes. All of this was then covered with mud plaster and dirt so that the completed house looked from the outside like a small earthen mound.[23]

The Wolfs built their house in the desert using pillars cut from mesquite logs.[24] A small cellar was dug under part of the house into the hard dirt, and was a cool spot, below the ground, for storing food. A wooden frame covered with brush cuttings was built on the west side of the house to protect it from the afternoon sun. The family cut young cottonwood branches from trees on the Gila River, and planted them on their property. They grew into large shade trees.[25]

From the clay and sand found in the soil, the Hohokam made pottery. A base was molded, and then layer after layer of coils was added. Then the coils were smoothed together and the pot more definitely shaped. Some pots were left plain; others were decorated in red paint made from crushed iron pigments, with geometric designs or pictures of animals and humans[26]. The pottery had many uses including cooking, serving and storage.[27] The Wolfs acquired a piece of pottery that is reminiscent of these red-painted pots. It's a deep red color and is decorated around the rim with black geometric designs.

How it entered the family is currently unknown.[28]

When lightweight yet durable containers were needed, the Hohokam made baskets. Leaves of yucca, cattail and beargrass were woven into various shapes. After soaking the fibers in water and splitting them into thin strips, a weaver coiled strips around each other, stitching them together with a separate leaf strip. Coiled jars were used for gathering and storing foods.[29] One of the Pima Indian women who was living in a field house on the Wolf property during cotton picking time, made a woven basket, which she traded to the Wolfs for a chicken.[30]

The Hohokam were skywatchers. They developed a vast knowledge of the sun and the moon, and their paths. Crops were planted and harvested, ceremonies were held, the calendar was determined, and even the four directions were discerned based on the "patterns of recurrence" the sun and moon displayed.[31] In the mid-1300s the Hohokam built an astronomical observatory that today is called the "Casa Grande", or "Big House", approximately halfway between what is now Phoenix and Tucson, just south of the Gila River, and about thirteen miles from where the Wolfs lived. This 60 x 40 foot, four-story adobe structure was made out of layers of caliche mud, the walls of which are 4.5 feet thick at the base. It contains several circular holes in its walls aligned with certain astronomical events such as solstices and equinoxes. The entire building is surrounded by a wall. The Hohokam built several of these vitally important ceremonial Big Houses, but today the only one left standing is the Casa Grande Ruins.[32]

On occasion the Wolf family took outings to the site and the children climbed over the Big House ruins, played on the grounds and explored the building.[33] In 1926, the local community decided to hold what was to become the first of four annual pageants at the site, reenacting the history of the area. Wooden structures were erected on top of the ruins and painted to resemble an adobe pueblo. Singers and dancers were included, as well as a cast of 300 people. 13,000 people attended, and two of the Wolf children participated in the pageant.[34]

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Sometime around 1450 A.D., for reasons we're not sure of today, the Hohokam disappeared, and when the Spanish arrived in the 16th century, they found only their descendants, the Pima and the Tohono O'odham (formerly called the Papago). These were the same people the Wolfs found when they went to the desert in 1919 A.D.

As this paper has depicted, both the Hohokam and the Wolf family, who followed their example in the desert, were inventive, resourceful, and tied closely to the land on which they lived. The Hohokam lived in a natural environment that was essentially the same as it is today and that is why the Wolf family lived a pattern of life that in many ways was similar to the way the Hohokam thrived in the desert.

Endnotes

[1] Andrews, John P. and Bostwick, Todd W., Desert Farmers at the River's Edge, Chapter 3, p. 1, 15 May, 2003, http://www.ci/phoenix.az.us/pueblo/dfindex.html.
[2] Andrews and Bostwick; Chapter 2, p. 1.
[3] Noble, David Grant, The Hohokam: Ancient People of the Desert (School of American Research Press, Santa Fe, 1991) 4.
[4] Interview with Betty Jane Wolf Pace.
[5] Noble 4.
[6] Pace, Betty Jane Wolf.
[7] Andrews and Bostwick, Chapter 5, p. 2.
[8] Pace, Betty Jane Wolf
[9] Noble 24.
[10] Gregonis, Linda M. and Reinhard, Karl J., Hohokam Indians of the Tucson Basin (The University of Arizona Press, Tucson) Chapter 2, p. 2, 15 May, 2003, http://www.uapress.arizona.eduk/online.bks/hohokam/titlhoho.htm.
[11] Gregonis and Reinhard, Chapter 2, p. 2.
[12] Noble 8.
[13] Interview with Ada Lou Wolf Ford.
[14] Pace, Betty Jane Wolf

[15] Andrews and Bostwick, Chapter 6, p. 1.
[16] Pace, Betty Jane Wolf.
[17] Gregonis and Reinhard, Chapter 2, p. 3.
[18] Ford, Ada Lou Wolf.
[19] Noble 22.
[20] Pace, Betty Jane Wolf.
[21] Gregonis and Reinhard, Chapter 2, p. 3.
[22] Pace, Betty Jane Wolf.
[23] Gregonis and Reinhard, Chapter 2, p. 7.
[24] Pace, Betty Jane Wolf.
[25] Ford, Ada Lou Wolf.
[26] Andrews and Bostwick, Chapter 9, p. 1.
[27] Gregonis and Reinhard, Chapter 2, p. 5.
[28] Pace, Betty Jane Wolf.
[29] Gregonis and Reinhard, Chapter 2, p. 6.
[30] Pace, Betty Jane Wolf.
[31] _____, Skywatchers, p. 1, 15 May, 2003, http://www.utep.edu/region19modules/natast05/html/natast20.htm.
[32] Andrews and Bostwick, Chapter 7, p. 5.
[33] Pace, Betty Jane Wolf.
[34] Ford, Ada Lou Wolf.