

## **Summary of SFNF Site Steward Educational Meeting April 12, 2006**

An evening educational meeting was held on Wednesday, April 12, 2006, at Dominic's in Santa Fe, New Mexico. Thirty-two site stewards and their guests attended.

Shelley Thompson introduced the guest speaker for the evening, Dr. Glenna Dean, New Mexico State Archaeologist, who presented "Cotton Pickin' on the Rio Grande," an overview of her research on the use of cotton in her study area in Rio Arriba County during the time period AD 1250-1500. The principal drainages in the ancestral Tewa area include the Rio Chama, the Rio del Ojo Caliente and Rio del Oso.

Dr. Dean specializes in archaeobotany, the study of people's interactions with plants as revealed in charred seeds, broken plant parts, pollen grains, basketry, sandals, and other textiles made of plant fibers. She accepted the position as state archaeologist in 1997.

She explained that, as a paleoethnobotanist, she examines soil samples from archaeological sites for evidence of pollen. Most frequently found pollen from domestic plants are corn, beans and squash, although native plant pollen is also found in prehistoric sites. Large sites along the Rio Chama and its tributaries were found to have rock-lined areas near large sites that were eventually identified as rock or gravel mulch gardens. Rocks bordering garden areas tend to retain summer and winter precipitation, and smaller rocks and gravels not only disperse raindrops but also tend to keep the soil warm during the cool nights. These garden areas were further identified by the presence of hoes shaped from river cobbles. These gardens apparently flourished at high altitudes until about AD 1500, when the Little Ice Age made agriculture inadequate to sustain the large populations at the towns, and the arrival of Spanish sheep.

Cotton pollen at these Rio Chama sites as well as fragments of cotton weavings dated to the early Pueblo period from dry rock shelters in Arizona posed an interesting research problem. Prehistoric cotton is a self-pollinating perennial that produced bolls that brown in sunshine. The nature of boll development precludes the presence of pollen within structures; cotton pollen is found only in fields. Cotton was grown prior to AD 1000 in Arizona as a perennial, and was transformed into an annual perhaps by the Hohokam. Hopi short staple cotton matures in 90 days, produces cotton that doesn't stick to its seed, and has short fibers.

Cotton weavings dated to AD 1300 have horizontal stripes in black, red and yellow. Modern-day colors are produced by various mineral and plant pigments, which may or may not have been used in prehistoric times. The ancient textiles are much like Navajo weavings of today, were produced on upright loom, and were dyed, painted on, and tie-dyed.

Experiments with various mordants and dyes bore interesting results. Reds and reddish hues can be produced by hematite, Hopi red dye corn (red tassels, silks, kernels and cobs), cochineal insects (now raised in Mexico on prickly pear pads for dyeing wool), and the pits, skin and leaves of avocado; yellow comes from dotter, which has no chlorophyll; and pink comes from New Mexico paintbrush. Yarn soaked in four different mineral waters at Ojo Caliente was probably used by the ancestral Tewas for different colors.

Cotton garments disappeared after the arrival of the Spanish and their flocks of sheep, although cotton mantas were sought by the early Spanish as tribute from the occupied Pueblo towns. The significance of cotton in prehistoric culture is not limited to weaving; cotton seeds have oil, cotton fibers were formed into string; and cotton has ceremonial meaning as ancestors and clouds.

Subsequent educational meeting topics will be: **May 10** – Overview of Jemez Sites and Archaeology., to be held at the education building at Museum Hill. Site stewards are reminded to contact Shelley Thompson with their preference for a potluck or brown bag.

**September 13** meeting will feature a presentation of the Caja del Rio Sites and Archaeology.

Respectfully submitted,

/s/ Nancy Cella