Ceramic Time-line

Redwares and Polychromes

Designs wear easily; not good for eating or cooking. Ceremonial?

Black-on-red

Polychrome

Whitewares

Used for eating & storage

ticks & dots

solids & hachures

more black than white

Graywares

Used for cooking

plain gray

neck banded

neck & zoned corrugations

indented corrugations

A.D. 700 900 1100 1300

Wupatki

National Monument
Department of the Interior

Coils That Bind

Ask a Pueblo potter how she learned her craft. Her reply reveals much about what it is to be Pueblo Indian. She learned by watching her mother and grandmother, then by trial and error. The ability, patience and designs emerge from within. Holding onto the clay is like holding onto the earth itself; she shapes pots to maintain this connection, and to thank the creator. Her clan history is pinched into every coil.

Pueblo potters draw on more than a thousand years of knowledge and experience. Yet, it requires a great deal of faith to continue to make pots the traditional way, with hands and no machines. Every perfectly shaped and decorated piece that survives firing is truly a miracle. Each piece recalls a cultural past of extraordinary innovation and beauty.

Ancestral Puebloan homes were centers for ceramic production; today these archeological sites are libraries for the modern Pueblo potter. A Hopi potter visiting the ancient village of Sikyatki found evidence his ancestors, too, were unable to make certain shapes. They, as he, had pushed the structural limits of clay. Across centuries of creative expression, age-old designs resurface time and time again, testimony to the value of tradition.

The religious and emotional nature of pottery making is evident when the potter speaks of asking Clay Woman for permission to take clay. A ritual held at the clay pit insures success during the crucial moments when fire transforms the clay. The resulting vessel that holds water possesses life. And while a potter clearly has artistic license, her work will reflect local tradition. It says I am Hopi, or Tewa, or Acoma. All that affects her, good and bad, may also come out in her work.

In the pot made 800 years ago the artist's fingerprints are visible. Her story is also contained within. She likely shaped clay with the same passion for creative expression, using the same techniques, and with similar cultural influences, as her descendants.

Coils That Bind

The Recipe of Pottery

Pottery may owe its origin to the cultivation of corn and beans. Try cooking beans with heated rocks placed into a clay-lined basket. Tough work, tough beans. Maybe one day the basket burned and the clay altered. Where, when, and how pottery came to be is debated, but as corn and bean farming spread throughout the southwest, during the 3rd and 4th centuries, so did pottery.

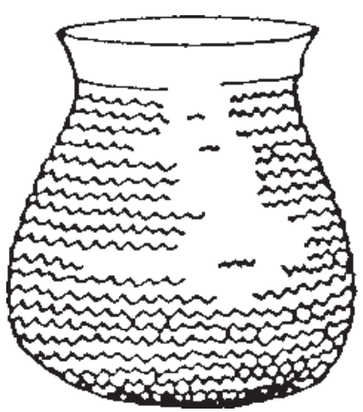
Pottery made sense. Food cooked faster and used less fuel. The cooking pot could serve for wet or dry storage; vermin-proof storage may have meant life or death for the farmer. Coiling a vessel took considerably less time than weaving a basket. Yet, the perfect cooking pot was 400 years in the making.

The first recipe was straightforward – gather clay from a wash, add water, shape, and bake in an open fire. The result: a crumbly earthenware unfit for the rigors of cooking. Cooks needed a pot capable of absorbing the tremendous stress created by a hot fire and relatively cool contents of the pot, something more than earthenware but less brittle than porcelain.

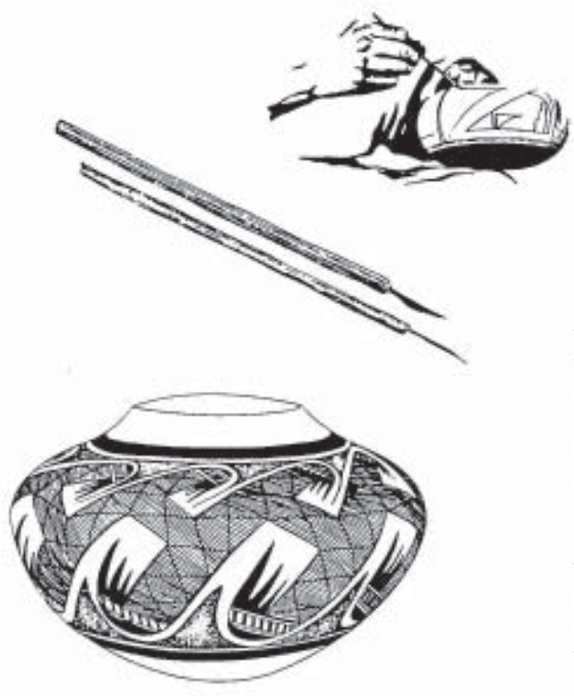
Clays swell and shrink differently on wetting and drying. Temper, non-clay material such as sand, can be added to reduce and control shrinkage. But too much temper weakens vessel walls, causing pots to crumble during firing; too little can cause pots to explode. The shape, size and type of temper also affect vessel strength. Finally, the properties of the finished pot depend on controlling the firing temperature for the particular day and temper combination. Disaster often occurs at this stage. Hours of work shattered and scattered on the dying coals.

To come up with the right formula for a good cooking pot required an extraordinary understanding of these intricacies of ceramic technology. Potters must have experimented constantly – 400 years of trial and error – to find the proper recipe.

The right clay came from shale outcrops rather than washes, and when combined with a coarse, relatively angular rock or sand temper, created a slightly porous yet strong pot. However, the pot had to be fired at a low temperature to achieve the forgiving, soft vessel wall needed for cooking. This recipe worked so well it remained unchanged for six centuries. From A.D. 700 to 1300, the gray utility pot would be present in every Pueblo household.



The forces that shaped the fabric of ancestral Pueblo life are recorded in the pottery and sherds found on a site like Wupatki. The economy of the household, who they traded with, when and how long they lived here, their cultural ties, are all documented by clay. Embedded in the clay is the clan history, thoughts and ingenuity of the potter. She had to be not only an artist, but also a scientist, engineer and entrepreneur. Even a tiny sherd speaks eloquently for her skill, aesthetic judgement, and creative decisions. Pueblo people say the clay remembers the hands that made it.



Hands still shape the clay without the use of a wheel; strokes from a yucca brush reveal ample sensitivity to designs of the ancients. While pueblo pottery has evolved in the last five centuries into distinct styles that distinguish one pueblo from another, many potters continue to borrow from their past, a recurrent thread in pueblo craftsmanship.

"Techniques may change,
content may evolve,
but the Pueblo-ness of
what the People make with
their hearts and hands remains,
built in with every coil,
stroke and stitch."

– Stephen Trimble

Sadly, the collective memory of ancient pottery is disintegrating because other people take from the past. Daily, potsherds are removed from public and private land, others are destroyed by careless feet. Pots are stolen and sold for individual profit. The library is being dismantled one page at a time.

Please, when visiting archeological sites, watch where you step and leave all artifacts in place. Report what you see; too often illegal acts and destructive behavior go undetected.

Tusayan White Ware Series

Cooking vessel mastered, serving bowls, ladles, mugs, and storage jars soon followed. Potters knew some clays used for gray utility pots turned white when fired hotter and longer. Unlike the graywares, “whitewares” were an inviting canvas. Black mineral or organic paint, derived from plant syrups, contrasted nicely. Decorated black-on-white pottery made its debut around A.D. 800. This exquisite pottery quickly permeated the Four Corners region.

For the next 500 years, potters applied their paint. With time designs generally became more complex, intricate, and heavily applied, creating a chronology used to date sites today. Like their descendants, potters clearly had options for paint, temper, and decoration, yet as wares evolved, designs and technology remained remarkably similar throughout the region. Furthermore, analysis indicates the clay in whitewares came from select areas. Food preparation must have required most households to have grayware potters; however, the decorated whiteware manufacture seems to have been in the hands of a few skilled artisans working in specialized production centers.

Kana-a Black-on-white
A.D. 800-1025
lines & solid elements with ticks

Black Mesa Black-on-white
A.D. 1025-1150
big solid elements, often triangles, connected with thinner lines, ticks become neat round dots

Dogoszhi Black-on-white
A.D. 1075-1200
hatching between framing lines, often used on big jars

Sosi Black-on-white
A.D. 1075-1200
lines with pendent triangles or barbs

Flagstaff Black-on-white
A.D. 1150-1225
frantic, busy
textile-like elements
lines & barbs, strong symmetry

Kayenta Black-on-white
A.D. 1275-1300
wide stripes that frame rectangles or triangles, panels with very fine hatching

Tusayan Black-on-white
A.D. 1225-1300
fine lines and coarse hatching, panels & scrolls, sawtooth opposite points that touch

Tsegi Orange Ware Series

Medicine Black-on-red
A.D. 1065-1125
no orange, all red, long parallel lines with black triangles

Tusayan Black-on-red
A.D. 1065-1200
heavy red slip, Dogoszhi design style

Citadel Polychrome
A.D. 1125-1200
red slip over entire exterior, interior partial red slip outlined in black on orange background

Tusayan A Polychrome
A.D. 1125-1250
same as Citadel only a narrow red slipped band on exterior

Tusayan B Polychrome
A.D. 1225-1300
colors like type A but design includes hatching

Kayenta Polychrome
A.D. 1225-1300
white is added as an outline to make red, black & white on orange background

Kiet Siel Polychrome
A.D. 1275-1300
red slip all over, no orange except on bottom or part of outside, white outline of black elements

A similar phenomenon was occurring in southeastern Utah with localized production of redwares. Here, potters discovered that clays which fired white or gray in a neutral atmosphere turned bright red or orange when strongly oxidized during firing. The red was intensified with slips of very high-iron clays. Painted with black or dark brown pigments, this handsome pottery also spread rapidly across the southwest through trade networks.

Redware production remained concentrated in southeastern Utah until 1050 when the technology and style shifted to northern Arizona, perhaps as skilled potters moved. Orangewares and the first polychrome styles resulted. Now, the palette consisted of orange, red, black and white. Complexity reached a new level. Potters applied red slip over the orange pot to define parts of the design which were then outlined in white and black.

Like whitewares, polychromes may have been produced in just a few communities and then widely distributed. Or maybe the technology was spread by itinerant potters. Polychromes could have resulted from widespread exchange of materials and knowledge. Regardless, they are a strong argument for specialized pottery-making.

Coils That Bind

Contents of a Pot

Pottery can tell us who, when and where. Whiteware clay comes from coalbearing beds, orange clay form the Chinle formation, both east of the Little Colorado River. Clays from the Flagstaff area are low in kaolin and fire brown. Wupatki residents could not have made orange, gray or whitewares unless they traveled a distance for clay. Their utility pottery was mostly brownware tempered with cinder primarily from Sunset Crater Volcano.

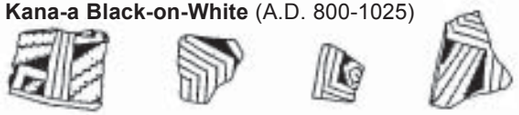
Designs communicate who and when. Pueblo people have taken the time to decorate their pottery for at least 1,200 years. Perhaps designs provided identity and created greater demand. At Wupatki a bewildering array of pottery, more than 50 different types, suggests people imported thousands of decorated pots. Broken vessels were commonly repaired by hand-reaming holes and lacing across the break. They were valuable enough to mend.

Pottery reveals information about the owner. Could a person guess your family size from your pots and pans? Ascertain how well you cook? Determine how often you grocery shop by the number of storage jars? Or distinguish the living room from the pantry by the type of containers? Archeologists can, and do, with ancient households. They can even determine whether the cook was right or left-handed from wear patterns on ladles. Vessels that once held food and water today hold precious life histories.

Key to Wupatki Pottery Styles

This key can help you type the black-on-white pottery found here, but you must examine sherds in place. Do not remove, relocate, or bring them in for identification. Instead, make notes and let us know what you've seen.

Kana-a Black-on-White (A.D. 800-1025)



Black Mesa or Holbrook A Black-on-white (1025-1150)

Dogoszhi or Padre Black-on-white (1075-1200)

Sosi or Holbrook B Black-on-white (1075-1200)

Flagstaff or Walnut Black-on-white (1150-1225)

Tusayan or Leupp Black-on-white (1225-1275)

Kayenta Black-on-white (1250-1300)

These pots were constructed by pinching together ropes of clay, building the coils to the desired height. At first, pots were scraped smooth obliterating the coils, making a strong weld. Later, after A.D. 900, the pinched coils were left unaltered giving the pot an attractive corrugated appearance, but presumably weaker coil weld. Did corrugations provide a better grip? Improve heat transfer or resistance to thermal shock? Or was it a stylistic expression? A corrugated pot may take less time to make.