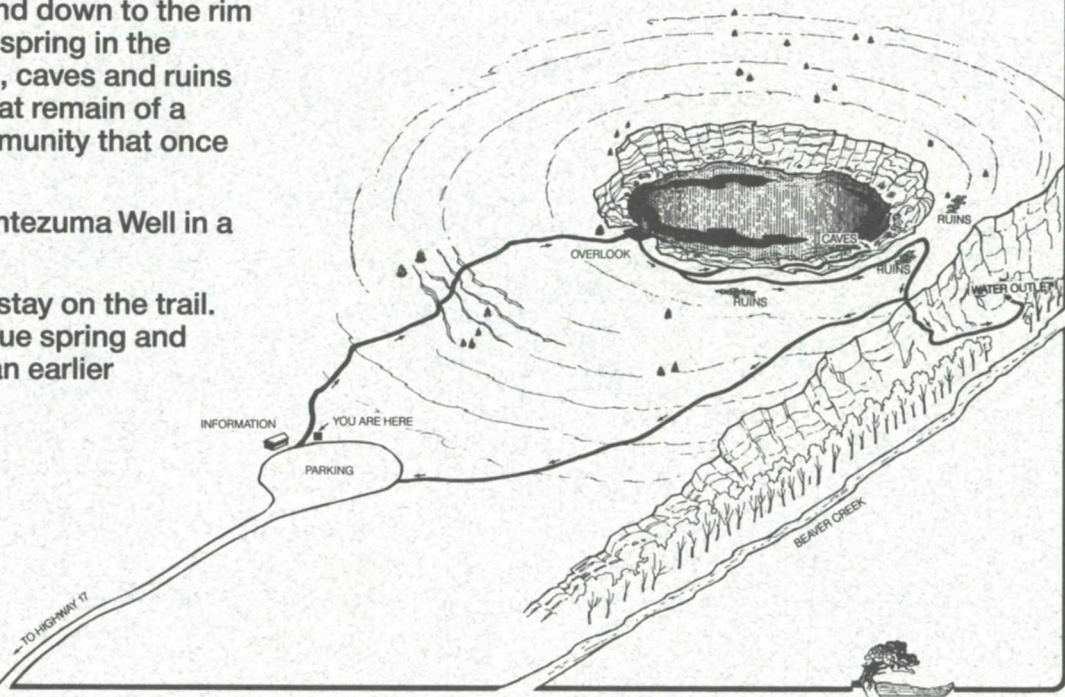


Welcome To **Montezuma Well**

The $\frac{1}{3}$ -mile, paved and signed trail ahead of you leads up a short hill and down to the rim of this naturally occurring spring in the desert. Empty cliff houses, caves and ruins of stone pueblos are all that remain of a 14th-century farming community that once flourished here.

We invite you to enjoy Montezuma Well in a safe and leisurely manner.

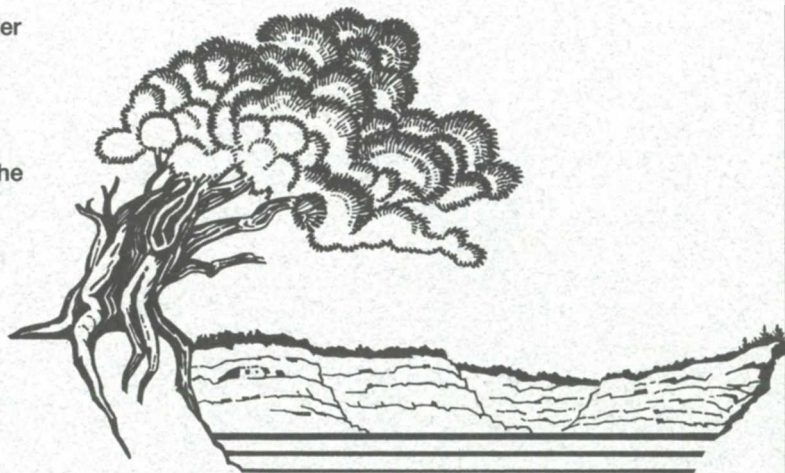
Please walk carefully and stay on the trail. Help us preserve this unique spring and surrounding remnants of an earlier civilization.



A Sacred Place

Prehistoric man, in his constant search for water, might have regarded the natural well at the top of this hill as a hallowed place—a seemingly inexhaustible supply of warm water flowing in the midst of the Upper Sonoran Desert.

From about AD 900 to AD 1400, a group of southern Sinagua Indians built a thriving agricultural community here by channeling the well water to irrigate their food and cotton crops.



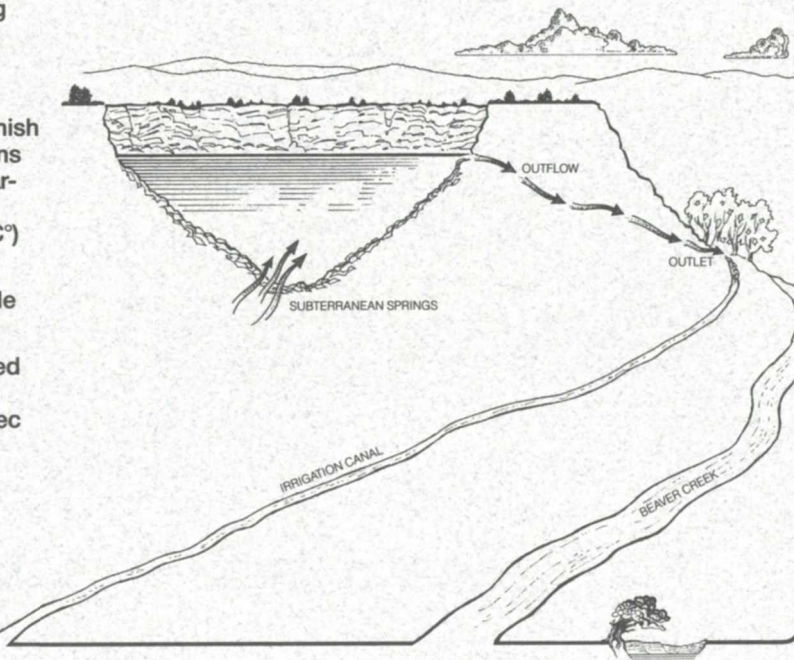
Montezuma Well

A funnel-shaped, limestone sink containing a pool of water 55 feet deep and 368 feet across, Montezuma Well is all that remains of an ancient cavern.

Subterranean springs of warm water replenish the well with over a million and a half gallons of water a day: an amount unvarying, apparently, since prehistoric times. The water maintains an even temperature of 76° (25°C) year around.

Water from the well flows out through a side cave in the limestone cliffs to your right.

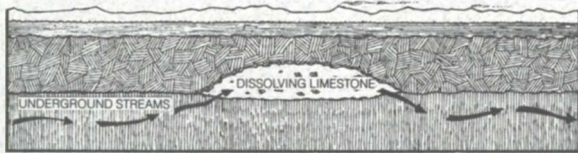
We do not know what the first settlers called this place, but early soldiers attributed the deep pool of water in the desert to the Aztec emperor who lived 2,000 miles south and several hundred years earlier.



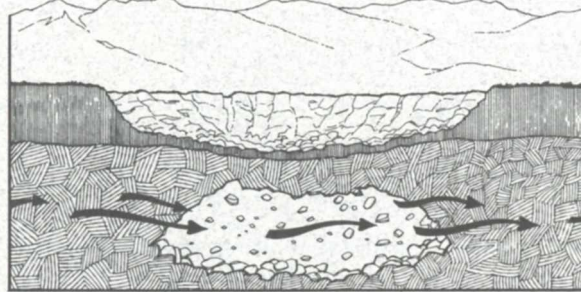
The Forming of Montezuma Well



Scientists speculate that about twelve million years ago, this part of the Verde Valley was covered by a large, shallow lake full of small floating plants. The plants caused dissolved limestone to form minute crystals which slowly sank to the bottom and, eventually, produced thick layers of soft limestone rock.



About two million years ago, the lake began drying. Underground streams started dissolving some of the softer limestone under the ground and a cavern began to take shape.



The constantly moving water carved the underground cave even larger until, probably about 11,000 years ago, the roof gradually crumbled—forming Montezuma Well. Continued erosion formed the outlet in a side cave.

When the water enters the well through the bottom vents, limestone falls out of solution and carbon dioxide (CO_2) is released as a dissolved gas into the water.



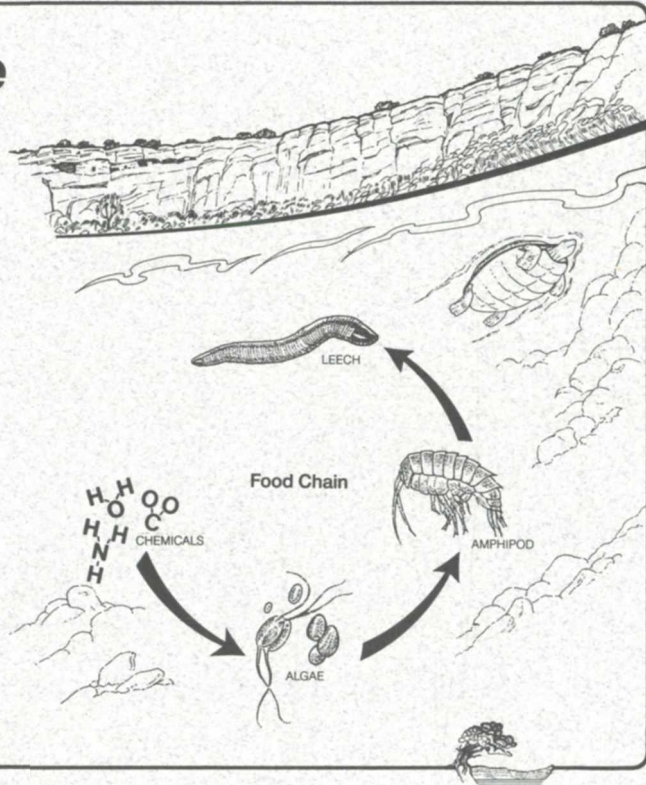
Underwater Chain of Life

Since water in Montezuma Well is charged with carbon dioxide (CO_2), gill-breathing fish can not survive: instead, an aquatic community of several unique species—each dependent on the other—has evolved.

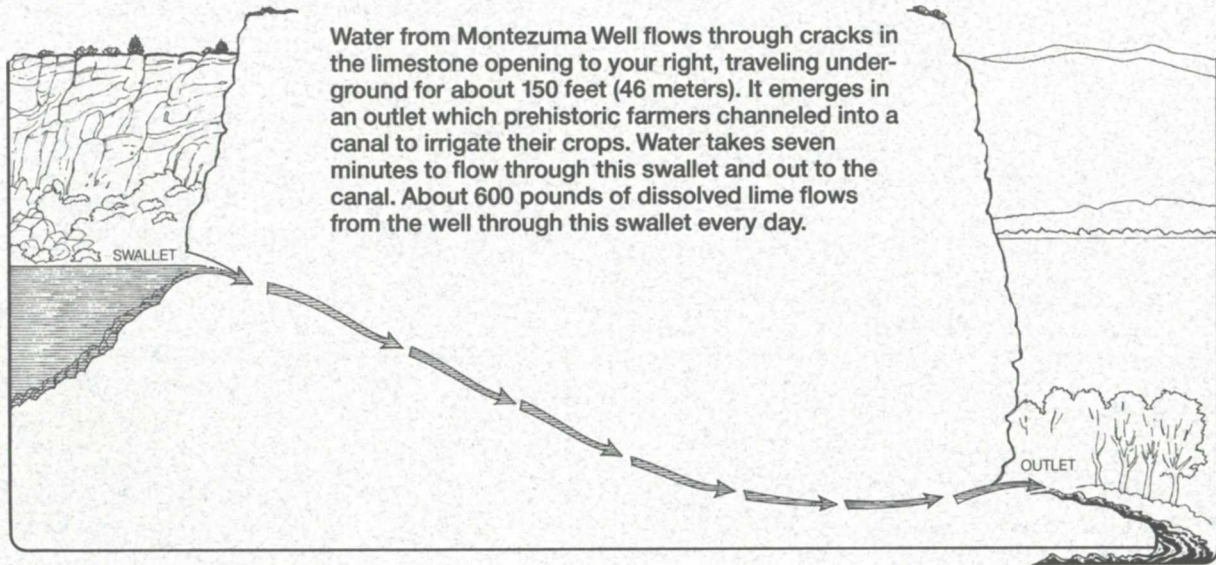
By day, small floating plants—algae—manufacture food from light energy and the rich supply of carbon dioxide. Tiny, shrimplike animals—amphipods—feed by combing algae cells through appendages below their mouths.

Leeches, living by day in the bottom of the well, rise at night and, searching with the sensory hairs of their bodies, gulp large quantities of the small amphipods. Night-swimming water scorpions also make evening meals of the shrimplike creatures.

More familiar turtles and muskrats live around the well, and at dawn and dusk you might see squirrels, foxes, skunks, raccoons and snakes coming to feed. In winter, look for black-headed Canadian geese, green-winged teals and mallards.



Swallet... *The opening through which a stream disappears underground*

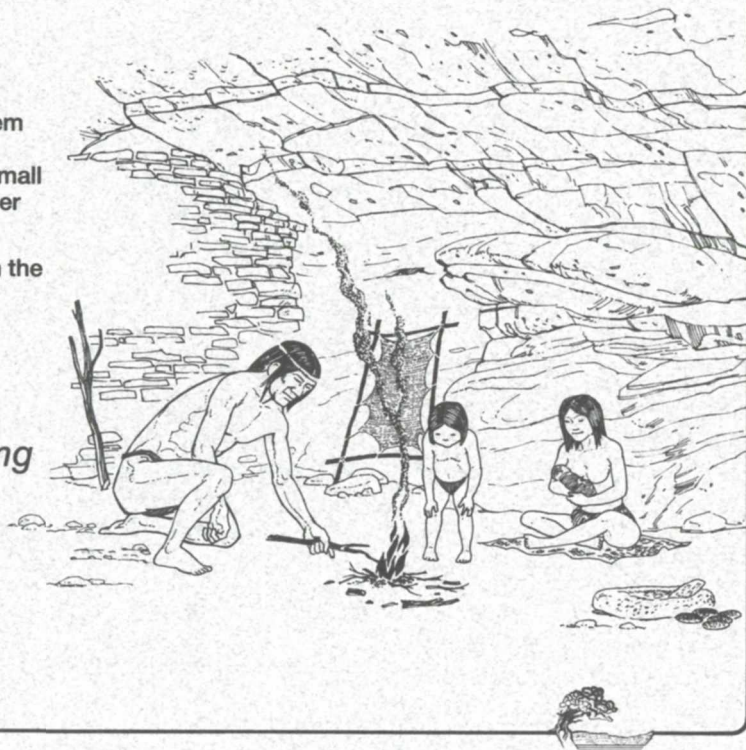


Cave Homes

Early inhabitants of Montezuma Well took advantage of these overhanging cliffs to use them for the ceilings and walls of their homes. They covered the stones with mud plaster and built small doorways for protection and shelter from summer sun and winter's cold winds.

Notice the overhang above you, blackened from the cooking and warming fires.

*Fragile
800-Year-Old Ruin
Please Do Not Go Beyond Railing*

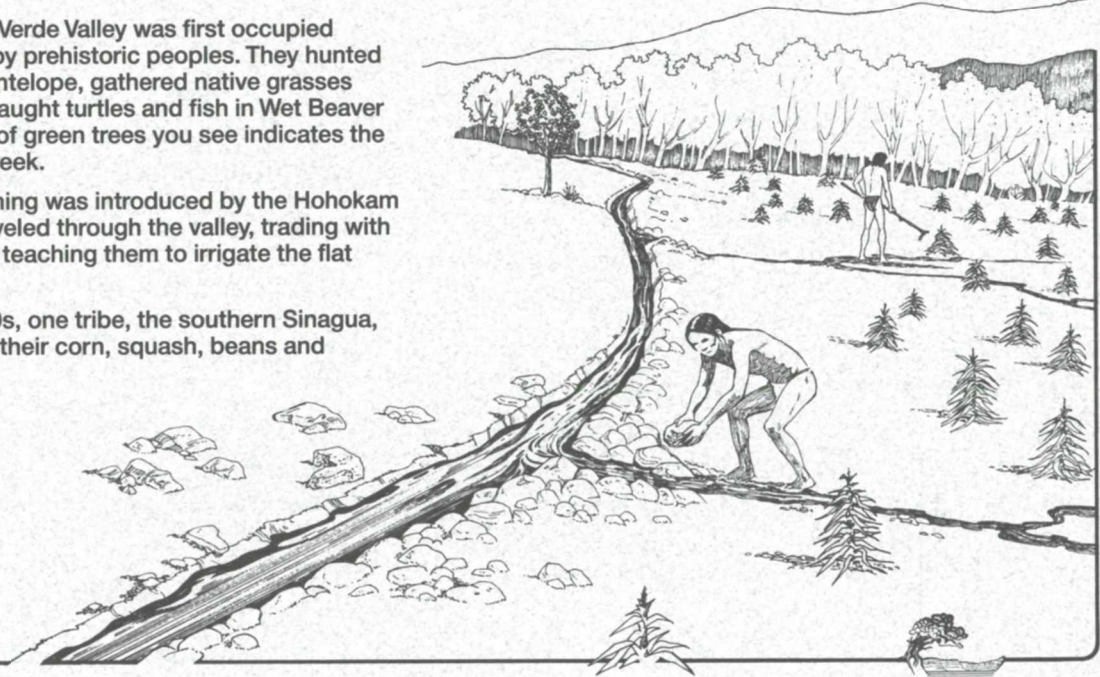


The Beginning of Agriculture

This part of the Verde Valley was first occupied around AD 700 by prehistoric peoples. They hunted wild deer and antelope, gathered native grasses and nuts, and caught turtles and fish in Wet Beaver Creek. The line of green trees you see indicates the course of the creek.

Most likely, farming was introduced by the Hohokam people who traveled through the valley, trading with local tribes and teaching them to irrigate the flat lands.

By the late 1300s, one tribe, the southern Sinagua, prospered with their corn, squash, beans and cotton crops.

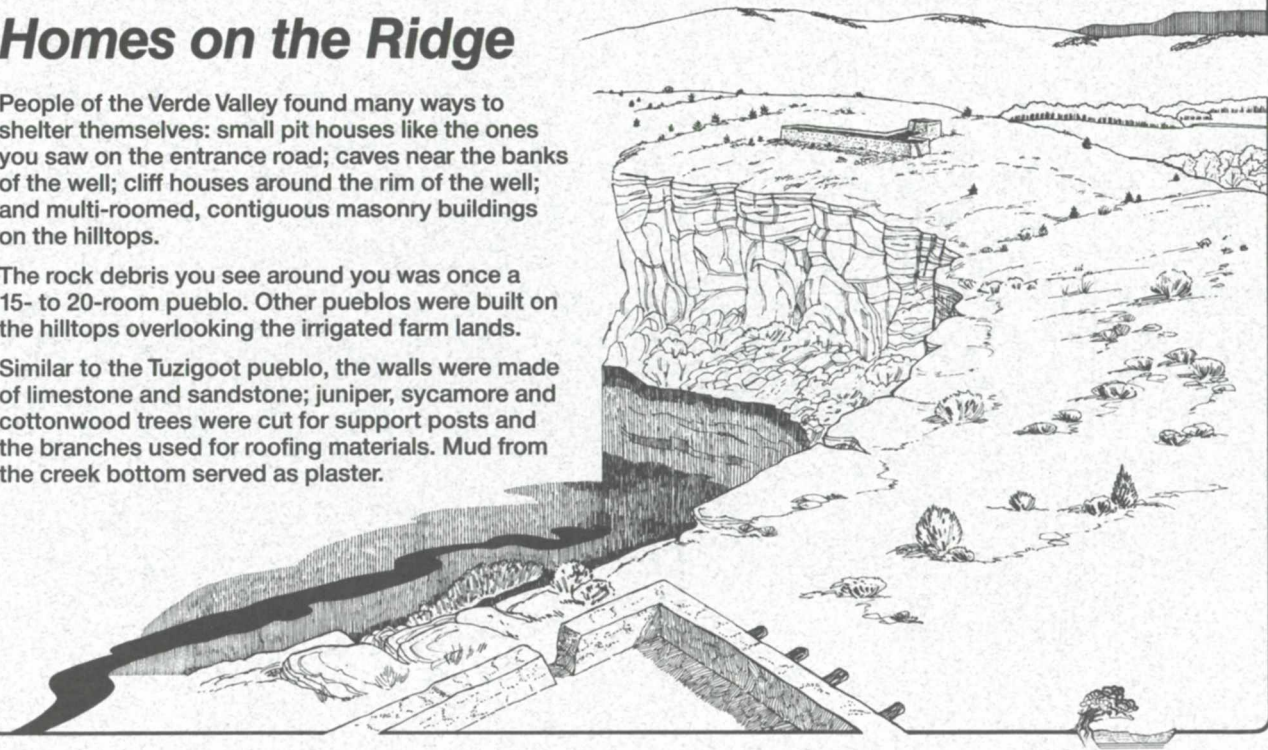


Homes on the Ridge

People of the Verde Valley found many ways to shelter themselves: small pit houses like the ones you saw on the entrance road; caves near the banks of the well; cliff houses around the rim of the well; and multi-roomed, contiguous masonry buildings on the hilltops.

The rock debris you see around you was once a 15- to 20-room pueblo. Other pueblos were built on the hilltops overlooking the irrigated farm lands.

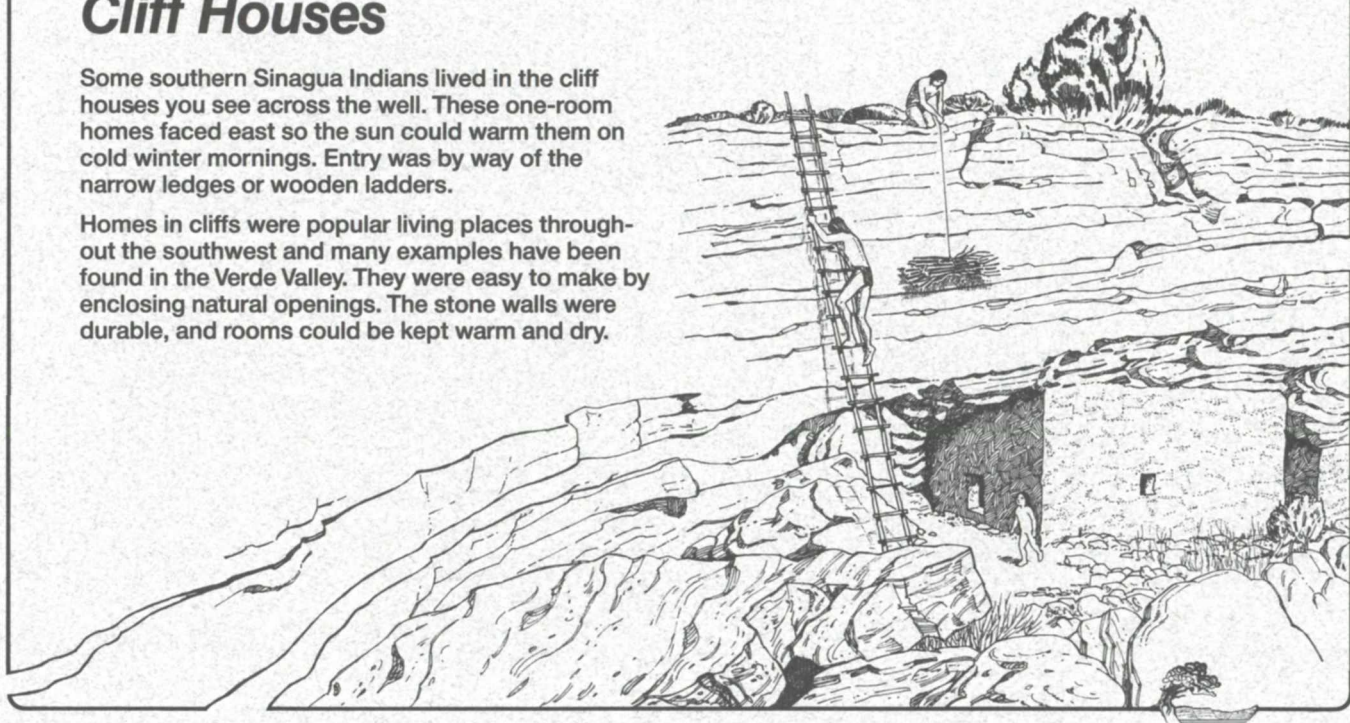
Similar to the Tuzigoot pueblo, the walls were made of limestone and sandstone; juniper, sycamore and cottonwood trees were cut for support posts and the branches used for roofing materials. Mud from the creek bottom served as plaster.



Cliff Houses

Some southern Sinagua Indians lived in the cliff houses you see across the well. These one-room homes faced east so the sun could warm them on cold winter mornings. Entry was by way of the narrow ledges or wooden ladders.

Homes in cliffs were popular living places throughout the southwest and many examples have been found in the Verde Valley. They were easy to make by enclosing natural openings. The stone walls were durable, and rooms could be kept warm and dry.



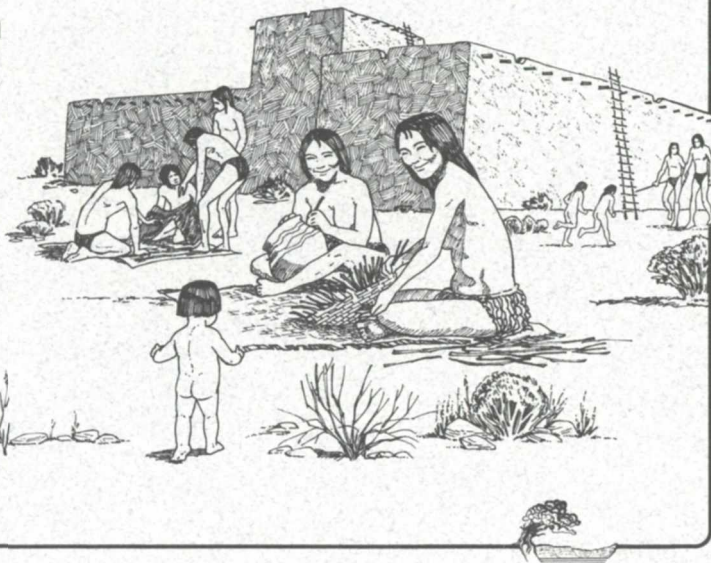
Pueblo Living

A busy 20- to 30-room pueblo once stood here, overlooking the irrigated fields. It was built, probably, in the late 1300s during the final phase of settlement at the well.

Pueblo rooms were small—about 12 by 8 feet—and used by families for sleeping and eating with most activities taking place outdoors.

Daily chores would have included farming the nearby fields; building and repairing the limestone pueblos; drying corn and seeds for winter use; weaving baskets and sandals from yucca plants; and forming and firing pottery storage vessels.

Generally, a level area near the pueblos was set aside as a plaza where neighboring villagers could trade goods and exchange news. Festivals and religious ceremonies might have taken place here, too.



Wild Riches

Even with new food crops, Sinagua farmers continued eating the wild grasses found around the well and using them for medicinal purposes. Lamb's-quarter, a plant with arrow-shaped leaves, was boiled with saltbush leaves and roasted cholla buds to make a sort of vegetable stew. The four-winged saltbush, pounded or chewed to a pulp, could ease ant or bee stings and pinyon pitch salved sore muscles.

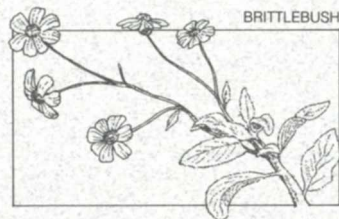
Agaves, or century plants, were harvested in the spring with new stalks eaten immediately and the trimmed plant then baked in a pit lined with hot stones. Seeds from amaranth were dried and stored for winter use.

Chewing gum was made from milkweed and white brittlebush, and a hard candy from ocotillo blossom nectar.

Some plants had more than one use, such as the Spanish dagger: its fat, bananalike fruits were good to eat and a lather formed from the roots was used for soap and treating heartburn.



LAMB'S-QUARTERS



BRITTLEBUSH



SALTBUSH



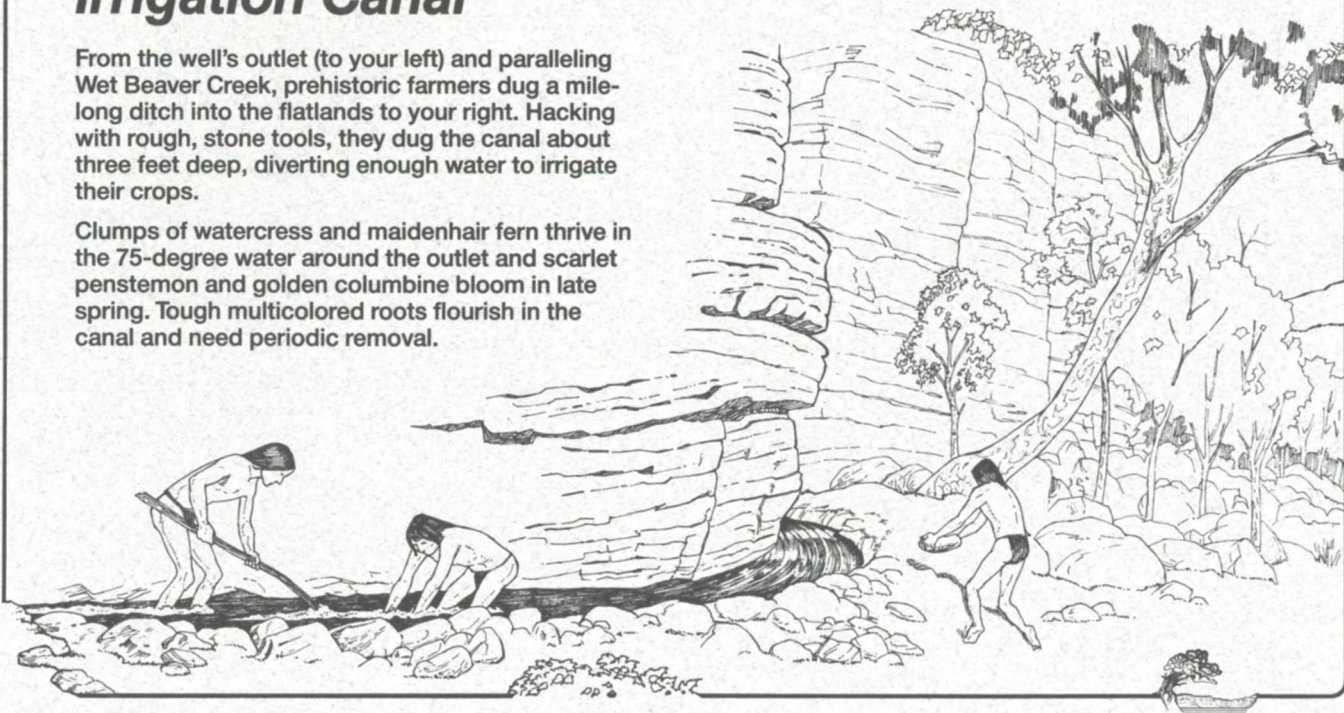
SPANISH DAGGER



Irrigation Canal

From the well's outlet (to your left) and paralleling Wet Beaver Creek, prehistoric farmers dug a mile-long ditch into the flatlands to your right. Hacking with rough, stone tools, they dug the canal about three feet deep, diverting enough water to irrigate their crops.

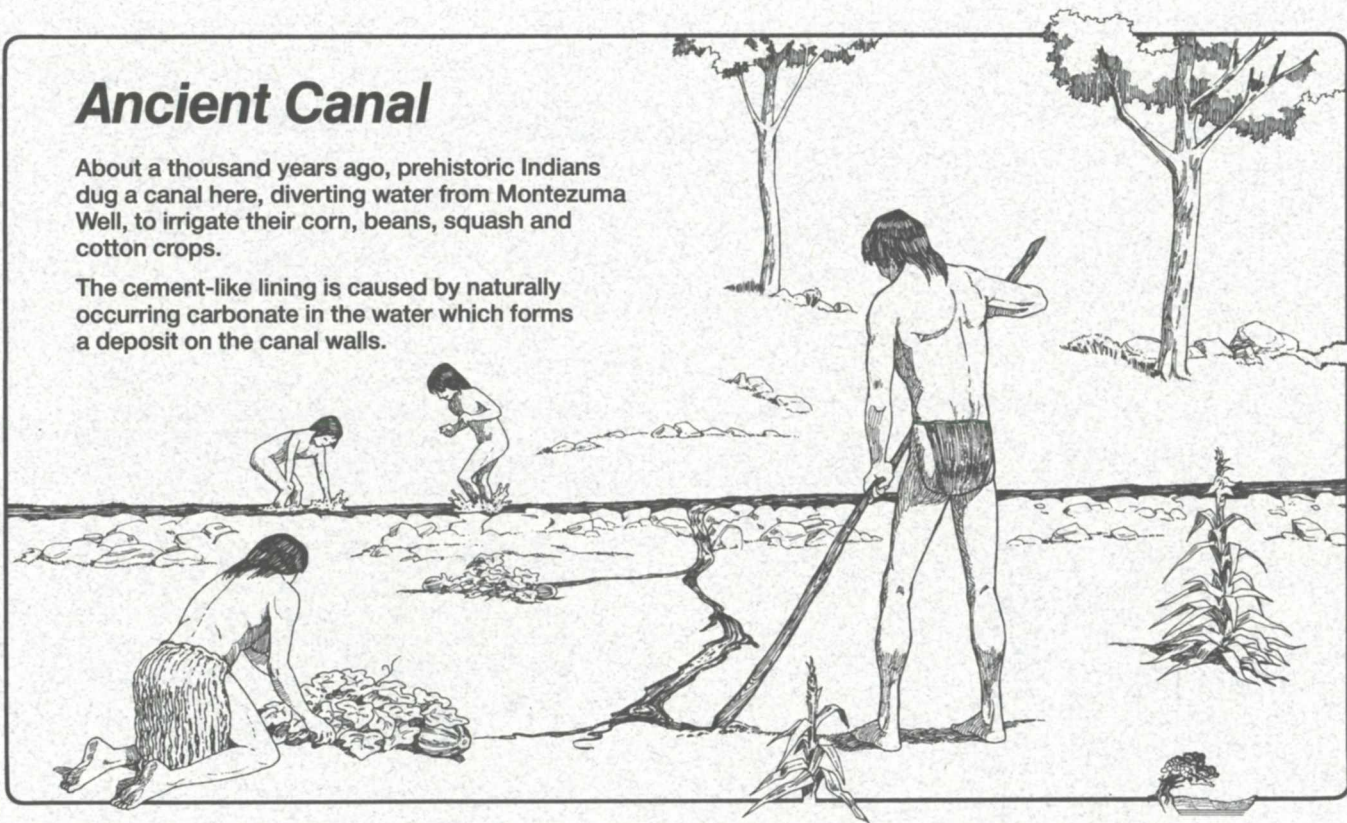
Clumps of watercress and maidenhair fern thrive in the 75-degree water around the outlet and scarlet penstemon and golden columbine bloom in late spring. Tough multicolored roots flourish in the canal and need periodic removal.



Ancient Canal

About a thousand years ago, prehistoric Indians dug a canal here, diverting water from Montezuma Well, to irrigate their corn, beans, squash and cotton crops.

The cement-like lining is caused by naturally occurring carbonate in the water which forms a deposit on the canal walls.

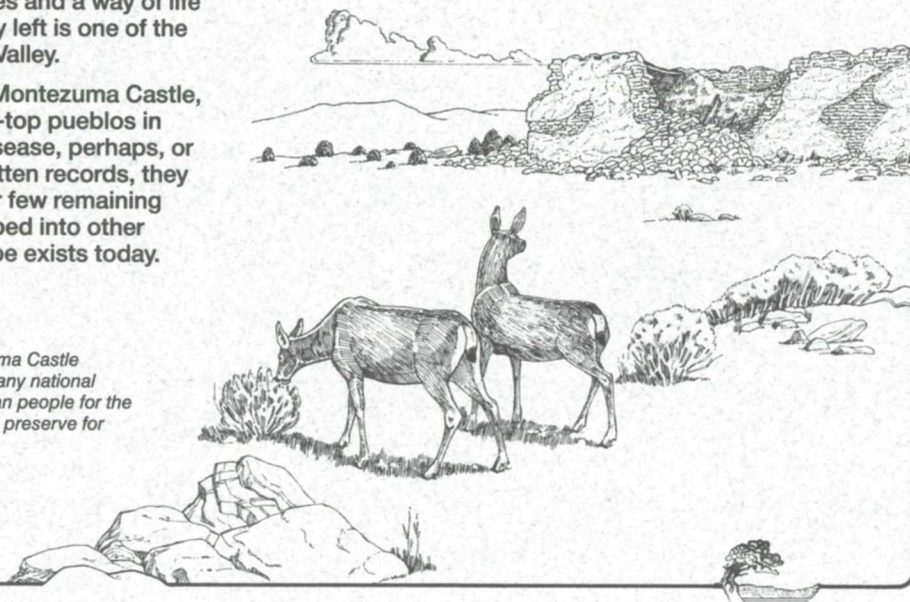


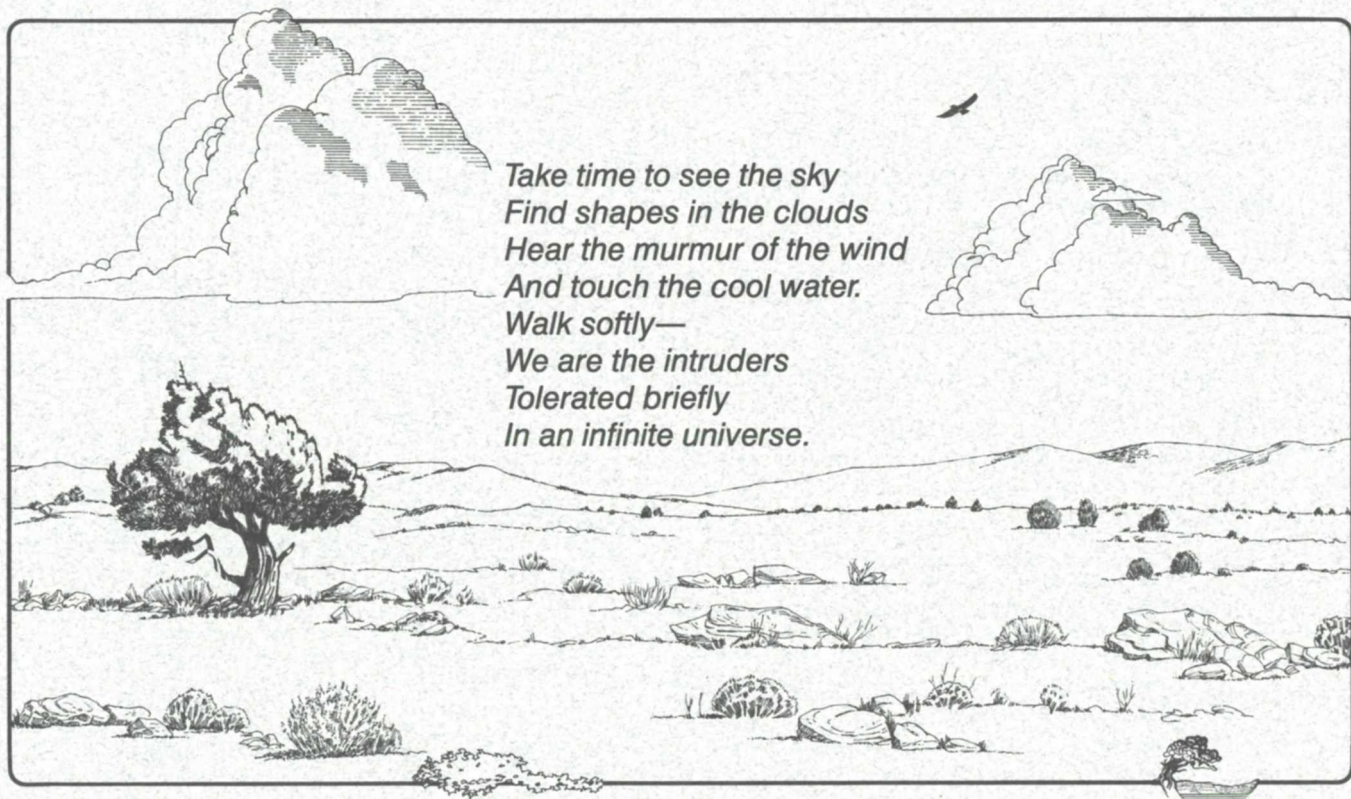
Abandonment

In the early 1400s, the southern Sinagua left their homes, farms, prosperous trading connections, abundant food and water supplies and a way of life evolved over 400 years. Why they left is one of the enduring mysteries of the Verde Valley.

They vacated Montezuma Well, Montezuma Castle, Tuzigoot and more than 50 ridge-top pueblos in the Verde Valley, driven out by disease, perhaps, or internal conflicts. Leaving no written records, they took their secret with them. Their few remaining members were eventually absorbed into other groups. No separate Sinagua tribe exists today.

Montezuma Well is a part of Montezuma Castle National Monument and one of the many national historic sites set aside by the American people for the National Park Service to manage and preserve for future generations.





*Take time to see the sky
Find shapes in the clouds
Hear the murmur of the wind
And touch the cool water.
Walk softly—
We are the intruders
Tolerated briefly
In an infinite universe.*