

## Earl's Diary - Thursday - March 6, 2014 (Part 2)

Dear Loyal Readers, One and All, wherever you may be:

This is part 2 of my travels for March 6. Earlier today I visited Montezuma Castle National Monument. A little farther up the road, around a few bends, through the town of Rimrock, and two and a half miles farther on top of a mesa, is Montezuma Well National Monument. As you may remember, I visited these sites 60 years ago and am refreshing old memories.



Montezuma Well has all the surprise of a lake and lush vegetation in the midst of desert. It is a limestone sink formed long ago, still fed by continuously flowing springs.



The Well is a place like no other. It shows the power of water to affect land, life, and people. It is an oasis in a harsh desert, home to species found nowhere else.

How could water be the most important player in a story about the desert? In an entire year, Montezuma Well receives less than 13 inches of rainfall -- barely 1/3 of the national average for the United States. Yet the Well contains over 15 million gallons of water.

Until 2011 the answer to that question was a mystery. Now the answer has been discovered. More than 10,000 years ago, the Well's water fell as rain and snow atop the Mogollon Rim, visible to the north. Over millennia, it has percolated slowly through hundreds of yards of rock, draining drop by drop through the path of least resistance.

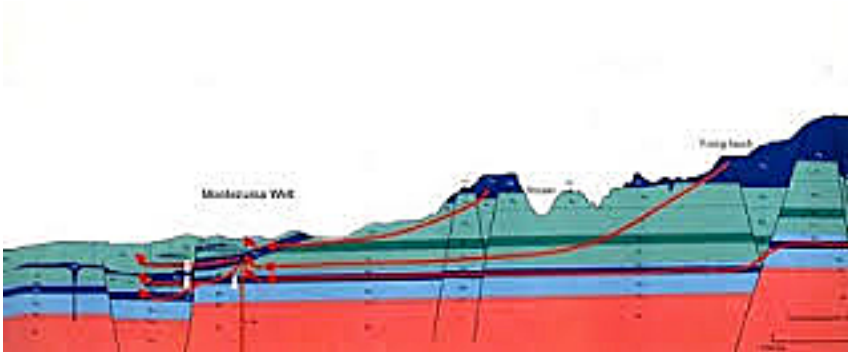
But here, at the Well, the water encounters an obstacle much

harder than the others through which it has flowed. Beneath the

Well, a vertical wall of volcanic basalt acts like a dam, forcing the water back toward the surface. In its long trip toward daylight, it eroded an underground cavern

until its

roof collapsed and created the sinkhole you see today.





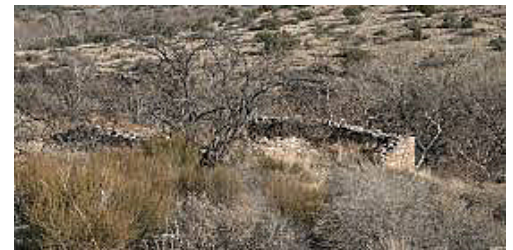
Evidence of human life at the Well



When you see photographs of Montezuma Well, this is the most common sight - - -



- - - however, there are other evidences of habitation inside, and outside the rim.



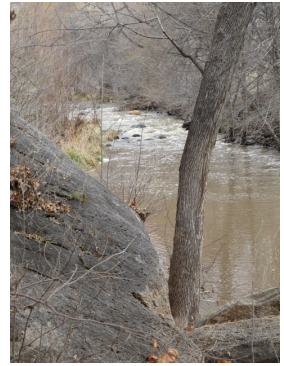




Like other living things, people have long found Montezuma Well to be an attractive refuge on this dry landscape.

One of the cultures to build homes here were probably the Hohokam, here from the Salt River Valley in southern Arizona. The pit house, dated to around 1050 CE, is exemplary of their architecture.

Where the water leaves the Well and flows out of the narrow cave, these early farmers channeled it a thousand years ago into a canal that ran for miles and irrigated acres of corn, beans, and squash. The monument and its neighbors still use that same canal today



Excavation of pit house remains. Two large holes in center where large roof supports were located.

The Hohokam likely lived alongside another culture who had been in the Verde Valley even longer. By the 1100s the people of the Sinagua culture began building small dwellings in the cliffs around the Well. Over time, they built more than 30 rooms along the rim.

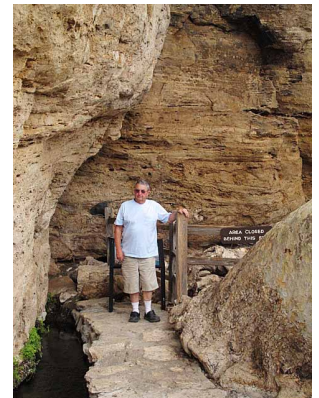
Cliff dwellings and collapsed pueblos line the Well's rims, overlooking the ancient lake on one side and the shady, riparian paradise of Wet Beaver Creek on the other.



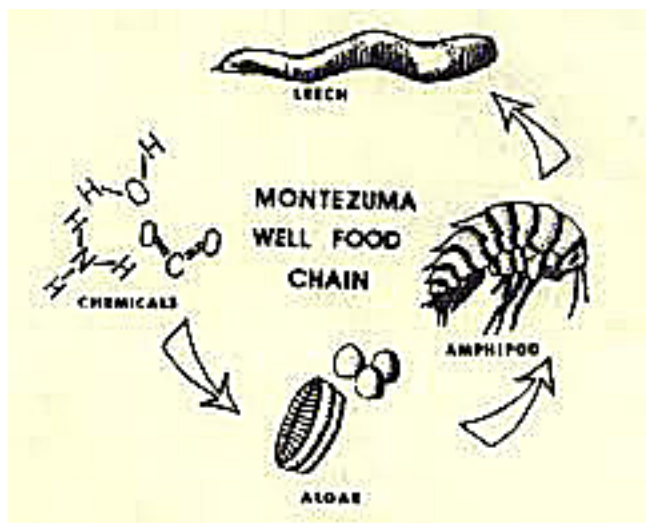
The water still flows. Every day, the Well is replenished with 1.5 million gallons of new water. Like a bowl with a crack in its side, the water overflows through a long, narrow cave in the east rim to reappear on the other side at the outlet.



Two side trails lead down 45-100 stairs from the main loop to cool, shaded benches at each end of this subterranean waterway.







If water sculpts the land at Montezuma Well, it has also influenced life itself. All the layers of rock penetrated and eroded by this water has left a chemical signature in it. The water contains arsenic, and high amounts of carbon dioxide which means no fish can live here, as they simply cannot breathe. In the absence of fish, five species have evolved that exist nowhere else on the planet - a water scorpion, an amphipod, a leech, a snail, and a diatom.



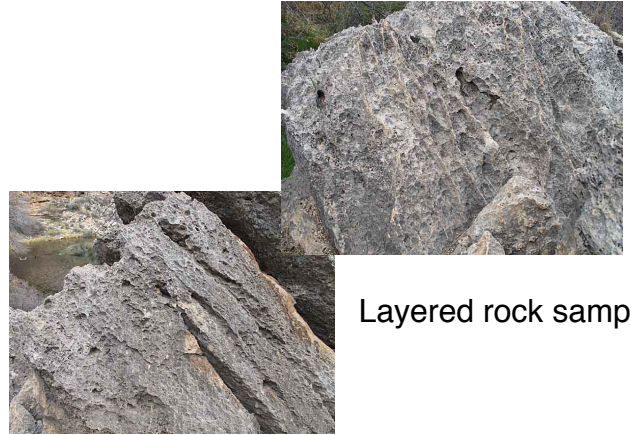
Montezuma Well contains enough water to fill 20 Olympic-sized swimming pools. It is more than 55 feet from the surface to the false bottom -- and unknown distance from there to the real bottom.

The walls are still collapsing by evidence of this jumble of rocks





Looking over the landscape outside the Well



Layered rock samples

Well dear readers, this ends my return trip to Sinagua country. It has been most educational and interesting to return to these sites after 60 years.

Later in the afternoon I returned to Dead Horse Ranch State Park to begin packing for the homeward trip. This day was also my final day of sightseeing in Arizona. Tomorrow morning I will be leaving for the return trip to California. I have seen many sights and taken lots of pictures. I am certainly glad that you all were able to come along with me.

I have several other shorter trips planned for later this year. I hope you can join me. Until then, thanks for traveling along with me. Bye for now - - Earl

