

THE FARMER IN THE TELL

DOMESTICATION OF PLANTS AND ANIMALS

“ HUMAN BONES AND
TEETH IN SYRIA

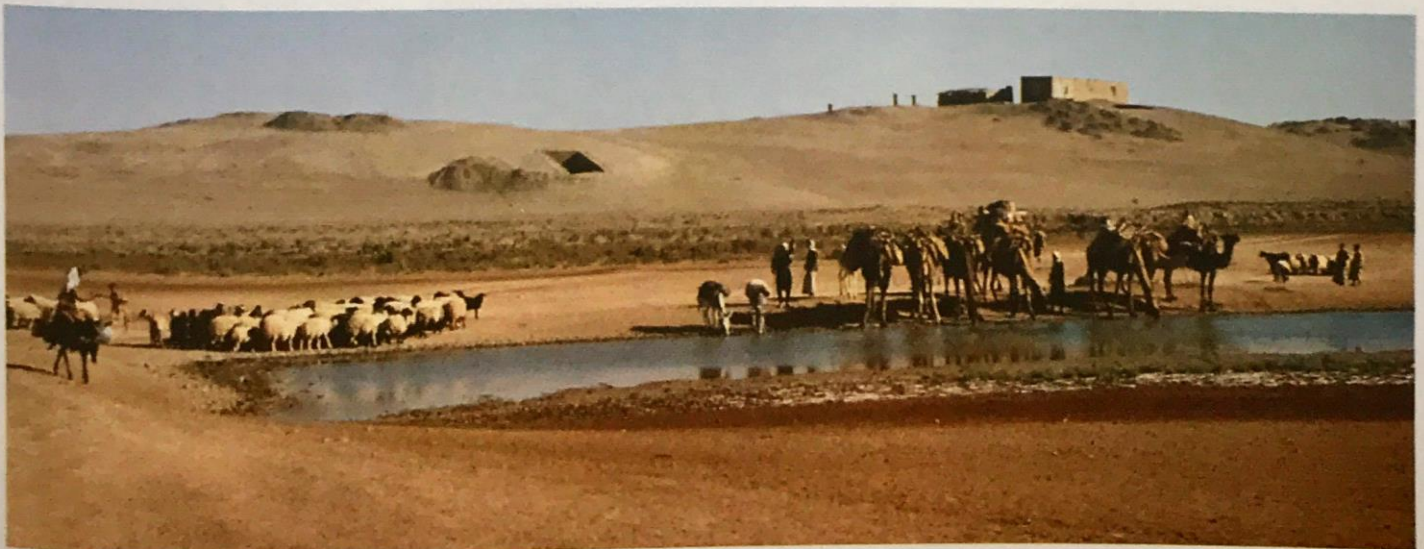
It was a race against the clock. Syrian engineers were building a dam across the Euphrates River. Soon the **tell** at Abu Hureyra would be under Lake Assad. Clues to what life was like in a 10,000-year-old village soon would disappear into a watery grave. Archaeologists had to recover whatever they could before the dam flooded the area.

They dug trenches—seven of them—some more than two stories deep. They dug on days when it was so hot that the skin on the backs of their necks blistered. They dug on days when it was so cold that they could barely move their frozen fingers. Israel and Syria went to war. And still they dug. The engineers raced to finish building the dam. The scientists raced to finish excavating the tell. They worked through the heat and the cold and the danger.

Why this particular tell? What made it so important? Archaeologists had a question and they hoped the answer was buried at Abu Hureyra. People began living at Abu

Tell is an Arabic word that means mound left by human occupation.

People tend camels and sheep in front of Tell Abu Hureyra. Scientists study this mound, or tell, to try to better understand when, why, and how humans stopped hunting and gathering and started farming.



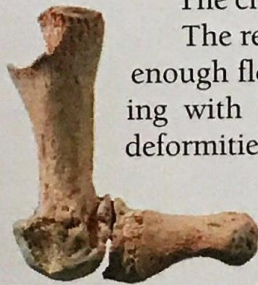
Hureyra when they were hunter-gatherers—when they ate wild plants and hunted wild animals. And they still lived there again after they had turned into farmers—when they tended gardens and herded animals. Why did people change? Could archaeologists find out from the evidence at Abu Hureyra? Could they dig up enough clues before the water washed them all away?

Sherlock Holmes studied dead bodies. The famous fictional detective dazzled readers with his deductions. The murderer must be left handed and shorter than five-foot-five, he would announce after examining the dead body—after all, the skull had been crushed from the left side and slightly below by a blow from behind only a short, left-handed person could make. **Paleopathologists**, detectives who study *ancient* dead bodies, make Sherlock Holmes look like an amateur. From tiny pieces of bone, they can reconstruct whole lifestyles. Here are just a few of *their* dazzling deductions from Abu Hureyra:

paleo + *pathos* + *logia* =
“ancient” + “suffering” +
“study”

Paleopathologists solve puzzles from the past by telling us a great deal about ancient life from studying the dead.

☞ *Homo sapiens sapiens* toe bones, Abu Hureyra, Syria, 9,000 years ago



The clue: wear on the big toe bones of women
The reasoning: It takes several hours to grind enough flour for one meal. Long hours of kneeling with the toes curled under can cause the deformities paleopathologists were finding.

The deductions: Women spent long hours on their knees grinding grain. Women did most of the food preparation.

☞ *Homo sapiens sapiens* neck bone, Abu Hureyra, Syria, 9,000 years ago



The clue: big neck bones

The reasoning: Neck bones grow unusually large when they have to keep the neck from wobbling under heavy loads.

The deduction: Villagers carried grain, game, and building materials in baskets on their heads.



☞ *Homo sapiens sapiens* arm bones, Abu Hureyra, Syria, 9,300 years ago

The clue: bulges in the upper arm bones

The reasoning: Villagers developed big muscles from lifting something heavy over and over, like weight lifters. The bone got bigger to support the bigger muscles.

The deduction: Villagers pounded the grain with mortars and pestles, the first step in turning the tough seeds into flour.

The clue: grooves in the teeth

The reasoning: How many times has your mother warned you not to use your teeth as a tool? No one warned the basket weavers at Abu Hureyra. They used their teeth to hold cane, freeing up their hands to weave. After a while the cane wore grooves in their teeth. People with this particular damage to their teeth were only found in one area. Some of the people's teeth found in this area were worn right down to the root. These people also had big jaw joints. Could they have been chewing plant fiber to make string? Paleopathologists think so.

The deductions: Some of the villagers were specialists—basket weavers and string makers. These craftspeople lived in one area of the village.



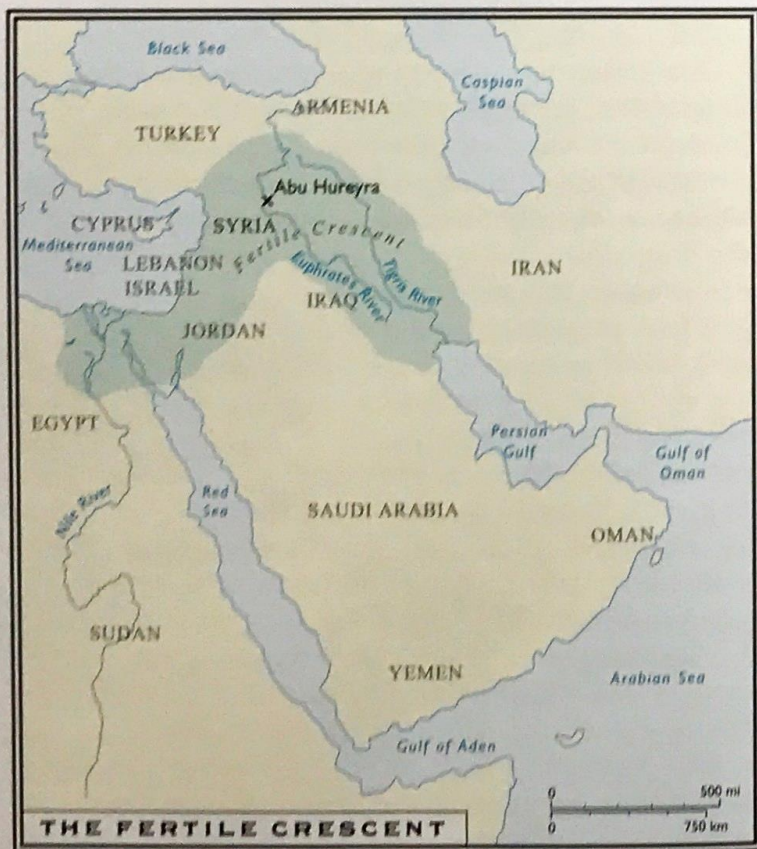
☞ *Homo sapiens sapiens* teeth, Abu Hureyra, Syria, 9,300 years ago

The clue: pitted eye sockets

The reasoning: Pitting in the eye sockets comes from parasites eating away at the bone. People catch things more easily when they are crammed together. Animals carry parasites.

The deduction: People at Abu Hureyra lived close together and near their animals.

Of course it's not just bones that show us what village life was like at Abu Hureyra. Archaeologists uncovered the houses. From what was left of the mud-brick walls, we get an idea of what the village looked like. The villagers built their homes close to their neighbors' houses, with only a very narrow alleyway between them. Some had small courtyards. Their houses were windowless rectangles with several small rooms. They used mud to plaster their floors black and their walls white. Although they kept the insides of their



The earliest farming villages began in southwest Asia in an area called the Fertile Crescent, which looks like a giant clown's frown. It was home to a wide variety of wild plants and animals, ancestors to the domestic plants and animals found at Abu Hureyra.

homes tidy, the villagers threw their trash out the nearest door and used the alleyways for toilets.

The picture of life at Abu Hureyra was filling in, but there was one puzzle archaeologists were anxious to solve. People had lived at Abu Hureyra for 3,000 years. How long does it take to make a farmer? How do you begin? There were no other farmers to copy. No monthly magazine to tell them which plants made good crops and when to plant. Was the first garden an accident? Did gatherers drop wild seeds along the paths when they brought home plants they had found? Did that give someone the idea to plant seeds?

And why plant at all? It certainly wasn't a better life. Hunter-gatherers have far more free time. Farmers work much harder and many more hours. It wasn't a healthier life. A diet that covers that long list of nutrients in your multivitamin comes from eating many different things. Farmers grew a limited number of things. They ate a limited number of things. They didn't get all the nutrients on that long list. You can have a full belly and still suffer from malnutrition if you don't eat a variety of foods. Hunter-gatherers ate many different plants and animals. They were far more likely than farmers to get close to the recommended daily allowances.

You would think one benefit of farming would be independence. At the very least if you farmed you could count on where your next meal was coming from. Wrong. Just ask any farmer. Whole crops get wiped out in a single storm. Hunter-gatherers just look around for something else to eat.

So why farm? There has to be at least one good reason. Why did agriculture pop up in so many different regions around the world? Did people begin to farm because they had to or because they could? And if they had to farm, what could possibly force them to do it?

Farming does feed more people. It takes 10 square miles of wild land to feed one hunter-gatherer. Farm that same land and you can feed at least 100 people. Were there more people? Scientists who study ancient population sizes have found that when hunter-gatherers began to stay in one place like Abu Hureyra, their numbers grew. The need to

TIPS FOR TAMING

Why did the villagers tame sheep and goats instead of gazelles? Some animals are easier to tame than others. Gazelles panic. If you pen a gazelle, it will kill itself trying to get out. If you want to pick the right animal to tame, here are some helpful hints:

Herbivores are cheaper to feed than carnivores.

Pick an animal that grows quickly.

Make sure it will breed in captivity.

The animal should be easy to handle. A rhinoceros may have lots of meat, but no one would want to get in the pen with it.

Animals that follow a leader, such as herders, are easier to manage and move about.

feed more people was probably one of the major reasons people started farming.

Of course, once they completely gave up traveling their numbers increased even more. If you are on the move, you need to carry your children from place to place until they can keep up. Having a child about once every four years is all a woman in a wandering band could handle. Farmers, however, could have children every two years.

The more people clump together, the more problems develop—especially when people dump human waste just outside the door. Disease spreads. With all the problems that crop up with farming, it makes you wonder why hunter-gatherers gave up the good life. Of course, they couldn't know what problems lay ahead, because no one had farmed before. They were just doing the best they could at the time to keep everybody fed.

Farming isn't only about taming wild plants. It's about taming wild animals, too. At Abu Hureyra the villagers began by hunting gazelles. The hunters chased the gazelles into an area surrounded by boulders. Once trapped, the gazelles were easier to kill. Archaeologists aren't sure whether the villagers killed off most of the gazelles or not. What they are sure of is that bones from gazelles were disappearing from village hearths, and in their place they were finding bones from sheep and goats.

Sheep, goats, pigs, cattle, wheat, and barley all existed in the wild around Abu Hureyra. Now they were being raised in the hands of humans. What nature once directed, now humans controlled. People decided which plant flourished, what animal multiplied. Changes were encouraged, as the English naturalist Charles Darwin pointed out in the first chapter of his *Origin of Species*, "not indeed to the animal's or plant's own good, but to man's use or fancy."

Abu Hureyra lies under Lake Assad now, but for years to come scientists will be studying what the archaeologists managed to save before the dam was complete—and making dazzling deductions about the life of the farmer in the tell.