

First sample chapter.

## Chapter Six

Prairie Wind enjoyed her World History class, in part because the professor did not march the students through a briar patch of terminology and dates, but instead told them a story. She was especially intrigued, early in the semester, by the story of an industrious group of people who made an enormous amount of progress in a number of fields, and who thus launched humanity into the early stages of the modern world.

This vibrant period, lasting several thousand years, occurred when the Fertile Crescent became the Cradle of Civilization.

Three million years ago, our human ancestors walked upright on the plains of eastern Africa, where they made tools from stones and mastered the uses of fire. Eventually, they migrated north into what is now the Middle East, and thence west into Europe and east into Asia. Our ancestors steadily evolved—the fossil skulls which we find today show an increase in the size of their brains—and thus they turned their attention from hunting and gathering what food they could find . . . to growing an unprecedented range of food themselves. The hunters became farmers.

In one particular region, where two major rivers, the Tigris and the Euphrates—fed by the snow and ice in the Taurus Mountains of what is now Turkey—flowed down onto a broad plain, our ancestors developed irrigation. They diverted water from the two rivers into a growing network of canals, then channeled the water to a growing patchwork of gardens. The farmers domesticated both plants and animals, and thus grew a surplus of food.

This process began at least seven thousand years ago, when the Sumerian people established villages and small cities along the southern stretches of the two rivers. Even today, we can visit the ancient ruins of the city of Ur, a coastal seaport founded over five thousand years ago where the Euphrates River poured into the Persian Gulf. (Ur is now in southern Iraq.)

The reliable abundance of food enabled the Sumerian people to turn their attention to other things beyond mere survival.

Because they stored increasing quantities of domesticated wheat—the large seeds could be kept in baskets during dry periods, then planted when the rains

returned—the farmers needed a system of writing to keep track of annual harvests. The first writers in human history were not poets, nor historians, but *accountants* who kept track of wheat, barley, flax, peas and lentils, as well as cows, goats, sheep and pigs. This bookkeeping was done with cuneiform script, signs etched into a tablet of wet clay with a stylus. When the clay dried, the record became permanent.

The Sumerians also developed the first wheel, for transporting food in carts, and the first sail boat, for transporting food on the waterways.

With their sexagesimal system of counting, based on the number 60, developed by the Sumerians during the third millennium BC, these increasingly clever people measured time with 60-second minutes and 60-minute hours. They established the 12-hour day and 12-hour night, and even determined the specific times when work would begin in the morning and finish in the evening. They measured the angles in a geometric figure according to multiples of 60: a circle had 360 degrees, and a triangle had a total of 180 degrees. The Sumerians passed their system of counting on to the Babylonians, who in turn passed it on . . . to us, as you can see today by checking the time on your watch.

These developments (and many others) reached north up the two rivers, and eventually spread into neighboring regions, primarily west along the shores of the Mediterranean Sea, and south along the Nile River. (The professor showed a map on a large screen.) This semi-circular collection of terrains and cultures, which we call the Fertile Crescent, encompassed the now modern states of Egypt, Palestine, Israel, Jordan, Cyprus (a nearby island in the Mediterranean Sea), Lebanon, Syria, and Iraq, along with parts of southern Turkey and western Iran. Blessed with rivers fed by snow and ice in the mountains, blessed with abundant sunshine, and blessed with people who used their rapidly developing intelligence in a dozen different fields, the Fertile Crescent became the Cradle of Civilization.

These vibrant people did not stop with agricultural abundance and accurate bookkeeping. They built cities of increasing size and complexity. They developed writing, and even established the world's first libraries. They developed a code of law to keep the growing populations under control. They traded with other people who arrived in caravans from the west (Europe) and from the east (Asia). And they developed systems of mathematics which not only helped them with their business transactions . . . but enabled them to track the movements of the sun and the moon and the planets and the stars.

It seems that the more they did, the more they could do. *Progress* became a driving concept in their daily lives.

After at least a million years as nomadic hunters, with little sense of invention beyond the making of stone tools, this extraordinary collection of peoples—who spoke different languages, worshiped different deities, and lived under the authority of different leaders—suddenly took huge steps forward during a brief period of roughly five thousand years.

Here the professor paused, then he told the students, “Pay close attention to what I am about to tell you. Because it has direct importance in our world today.”

Prairie Wind sat with her pen poised over the notebook page.

The people who lived in the Fertile Crescent, with their ever-evolving cultures, were aided by the stable climate of the Holocene, a geological epoch which began roughly twelve thousand years ago, at the end of the last ice age. The great sheets of ice which had covered the northern regions of Europe, Asia and North America had melted, leaving vestiges of ice high in the mountains. The Holocene was a period of stable temperatures: the world was still cold enough that snow could replenish this mountain ice, winter after winter . . . and yet the world was warm enough that the ice could melt, summer after summer, feeding the great rivers that flowed down to the plains. The ice melted and the rivers flowed, enabling the farmers to divert the water into irrigation canals so they could water their crops.

However, we now in our modern world threaten to bring to an end, after twelve thousand years of fairly stable temperatures, the benevolent Holocene epoch. We have wrapped a blanket of carbon pollution around our planet, a blanket which holds in the heat from the sun. The warming atmosphere is now melting the precious, fragile ice high in the mountains. As the glaciers melt, they become a diminishing source of water for the streams and rivers down in the valleys. In addition, as the atmosphere warms, the snow which once replenished the glaciers is now beginning to fall as rain. The rain runs down the mountain slopes during the winter, and leaves no water for the spring and summer.

The great rivers of the world, which have watered civilizations for centuries, for millennia, may soon become troughs of mud.

Prairie Wind felt it again, deep inside, the gnawing fear, the anxiety, the dread, that every teenager felt . . . growing up in a world which threatened them with a future of unprecedented catastrophe.

Every kid on the planet was losing the Holocene.

The slaughter of the buffalo was just the beginning.

“Now,” said her professor, “let’s get back to the Fertile Crescent.”

Domesticated plants and animals from the Cradle of Civilization made their way into Europe and Asia. Writing and mathematics and codes of law were adopted in other parts of the world. The fruits of a Golden Age—marred by unrelenting wars—became the foundation of our modern world today. The torch was passed from Babylon, a port city on the Euphrates River, to the peoples of the 21<sup>st</sup> century, who grow their wheat on vast farms, and shear their many strains of sheep, and hire accountants to keep electronic business records, and argue cases based on complex codes of law, and point their rockets toward the stars. The early flute, made from a reed, and the early drums, made from animal skins stretched over a gourd, have become a symphony orchestra. The early letters made with a sharp stick on the damp surface of a tablet of clay . . . have become the great libraries of the world, and the infinite treasury of the internet.

What have we inherited from those early Sumerian people?

Progress.

Progress is as much a part of our daily lives as our morning cup of coffee.

The professor made a show of pushing up his sleeve and looking at his watch. “It seems that we have used all sixty seconds of all sixty minutes in our allotted hour. I’ll see you on Wednesday at ten o’clock.”

Prairie Wind pushed up her sleeve and looked at her watch, born thousands of years ago, ticking away the final minutes and hours and days and who knew how many more years of her post-Holocene future?

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