

ESSAY I

THE RISE OF AGRICULTURE & COMPLEX SOCIETIES

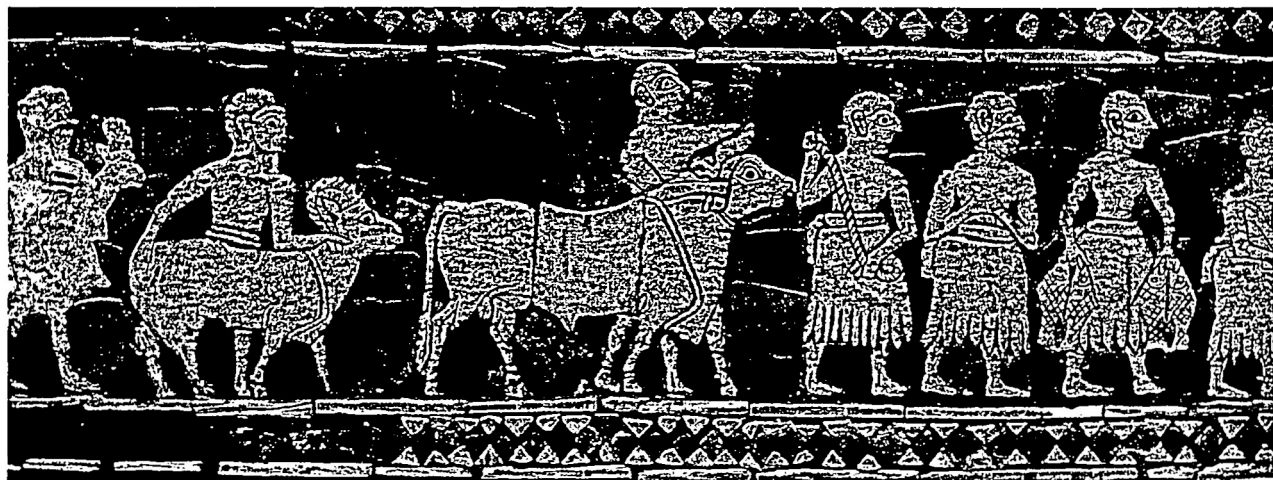
THE TRANSITION FROM HUNTING AND GATHERING TO FARMING, WHICH MAY HAVE begun around 10,000 B.C., was a great step forward for the human race. Ultimately, it allowed the emergence of civilization. Like all profound changes, however, adapting to farming was difficult for those used to a different way of life. Farming was harder than hunting and gathering, particularly when people first began to work the soil and lacked metal tools or draft animals to ease their labors.

Working the land was so taxing that some regarded it as a curse on humanity—as expressed in the biblical story of Adam and Eve. Cast out of the Garden of Eden for disobeying God, they were condemned to harvest the earth at great pains. “Cursed is the ground because of you,” God told Adam. “In toil you shall eat of it all the days of your life.” The curse also fell on Adam’s son, Cain. Cain “brought to the Lord an offering of the fruit of the ground,” while Abel, his brother and “a keeper of sheep,” offered “the firstlings of his flock and of their fat portions.” As recounted in the Book of Genesis, the Lord appreciated Abel’s offering, “but for Cain and his offering

he had no regard.” In jealousy, Cain killed Abel—thus committing the first crime of human against human—and went into exile.

Ferment in the Fertile Crescent

The rivalry between Cain and Abel reflects a human drama played out over thousands of years in the region that gave birth to the Bible. The ancient Israelites lived in the Fertile Crescent, an arc extending from Egypt’s Nile Valley to Mesopotamia, between the Tigris and Euphrates Rivers in modern-day Iraq. This region was not as dry in ancient times as it is today, and land unsuitable for farming could be used for grazing.



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Domestication of cattle, along with sheep and goats, has been documented as taking place 8,000 years ago. Humans had domesticated dogs, but the herding of sheep and goats was of greater consequence because, as plentiful sources of wool, milk, and meat, they provided much of what people needed for food and clothing. Over time, nomadic flock herders encountered people who had settled down as farmers: Ancient conflicts echoed in the biblical feud between Abel the shepherd and Cain the farmer.

Once communities in the Middle East practiced both skills, combining cultivation with the raising of animals, it marked the birth of agriculture. Domesticated animals like sheep and cattle eased work and provided food. Now people had to produce grain to support themselves and their livestock in times of scarcity. They lived in one place all year round.

Wild grains were domesticated according to each region's soil and climate. By 8000 B.C., strains of wheat and barley were being grown in the Middle East, rice and millet in China and Southeast Asia. Einkorn, a primitive form of wheat, was being grown in the Indus Valley of today's Pakistan. Maize, or corn, was domesticated in the Americas around 3000 B.C. By that time, people elsewhere were raising various crops and tending cattle, sheep, pigs, horses, and other livestock.

Agriculture spurred crafts. Farmers needed receptacles to store grain. The potter's wheel was invented,

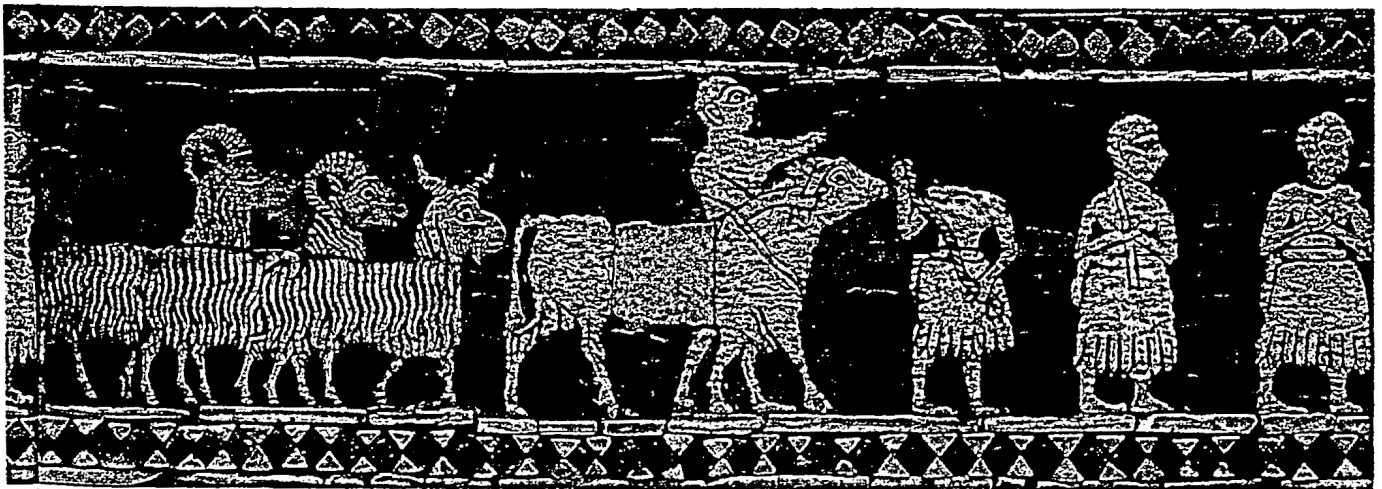
Sumerians herd goats, sheep, and cattle in a mosaic from the royal cemetery at Ur, one of the first cities of Mesopotamia. Agriculture laid the foundations of Mesopotamian civilization.

which led to wheeled vehicles. The first plows, made of wood and drawn by hand, barely scratched the soil. But by 3000 B.C., Mesopotamian farmers used cattle to pull plows whose bronze-tipped blades dug deeply, greatly increasing harvest productivity.

Feeding Complex Societies

Agriculture transformed human existence. Farmers produced more food than their families and livestock required. Potters, weavers, bakers, brewers, priests, and officials were able to pursue specialized work without starving. Specialization was crucial to the rise of cities and civilization (a term derived from the Latin word for "city"). People put down roots, acquired possessions, and had time and energy for activities other than mere subsistence. They built prodigious monuments like Stonehenge in Britain, dating from about 2000 B.C. Even more impressive structures arose in bountiful areas. In Egypt, for example, rulers with vast reserves of grain and manpower built pyramids.

Most early civilizations arose near rivers—the Nile, the Tigris and Euphrates, the Indus, and the Yellow River in China. Those rivers flooded regularly, depositing silt that enriched the soil and raised crop yields. Irrigation systems further increased production. It took strong leadership to manage irrigation projects and distribute surplus grain. Powerful rulers arose, first presiding over city-states and ultimately over kingdoms and empires. Kings and emperors reaped the fruits of civilization, but it was humble tillers of the soil like the accursed Cain who planted the seeds. ■



Essay 2

THE EVOLUTION OF WRITING

A LONG WITH CITIES AND RULERS, WRITING DISTINGUISHED THE EARLIEST CIVILIZATIONS. Writing was a skill originally confined to an elite group of officials, priests, and scribes. "Writing for him who knows it is better than all other professions," declared an ancient Egyptian text, composed by a writing teacher to be copied out by scribes in training. "It pleases more than bread and beer, more than clothing and ointment. It is worth more than an inheritance in Egypt, more than a tomb in the west."

Writing pupils dutifully copied these sentiments on papyrus—no easy task considering that their written language comprised some 700 hieroglyphs that could be combined in countless ways. Scribes also studied mathematics and astronomy, and the best of them pursued careers as administrators or royal advisers. To make students apply themselves, the teacher compared the sufferings of illiterate Egyptians, forced to work hard as soldiers or peasants, with the life of relative ease promised a scribe. Learn writing, the teacher urged his pupils, "and you will be protected from all kinds of toil. You will become a worthy official."

Symbolic Complexity

In Egypt as in other early civilizations, writing was not simply a path to individual advancement. It was the means by which whole societies advanced to higher levels of complexity and achievement. Writing began as pictographs representing objects or concepts. As cultures grew more complex, writing evolved into a more symbolic record of thoughts and actions, with versatile signs or characters that could be combined to convey various meanings. In the Sumerian language, for example, the sign for mouth combined with the sign for a bowl of food meant "to eat."

Signs became phonetic indicators. The sign for a word like "cat," for instance, could represent either the animal itself or the sound "cat" in an unrelated word like "catalogue." This process of making one sign serve different purposes allowed scribes to represent their spoken languages in writing with a finite set

of characters, numbering anywhere from several hundred, as in Egyptian, to several thousand, as in Chinese. It could take years to master all those characters and combinations. The task was simplified over time as characters inscribed on stone, clay, or papyrus became less pictorial, more abstract, and easier to form.

The development of writing enabled rulers to govern vast areas more effectively. Concerned about the fate of their troops abroad or the state of their treasury at home, kings requested reports from commanders or tax collectors. Written reports improved on oral reports, easily distorted by the speaker's memory lapses or misstatements. People subject to the decrees of rulers benefited as well when the laws of the land were written down. When King Hammurabi of Babylon formulated his great code of laws, he had the code inscribed on a monument, including these words: "Let the oppressed man who has a cause come into the presence of my statue and read carefully." Hammurabi's code prescribed harsh penalties for some offenses. "If the wife of a man is caught lying with another man," it decreed, "they shall bind the two and cast them into the water." With laws expressed in writing, the Babylonian people had some assurance that they would not face arbitrary punishment from authorities making up rules as they went along.

Since most Babylonians could not read, they relied on scribes or officials to interpret the laws for them. As long as written languages contained hundreds or

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thousands of characters, they were well-kept secrets, known only by a privileged few whose parents or patrons could afford to pay for schooling. This remained the case for thousands of years in China, where mastery of the many intricate characters of its language was confined to the wealthy and to a few gifted commoners who advanced by merit to serve China's rulers as scribes and civil servants.

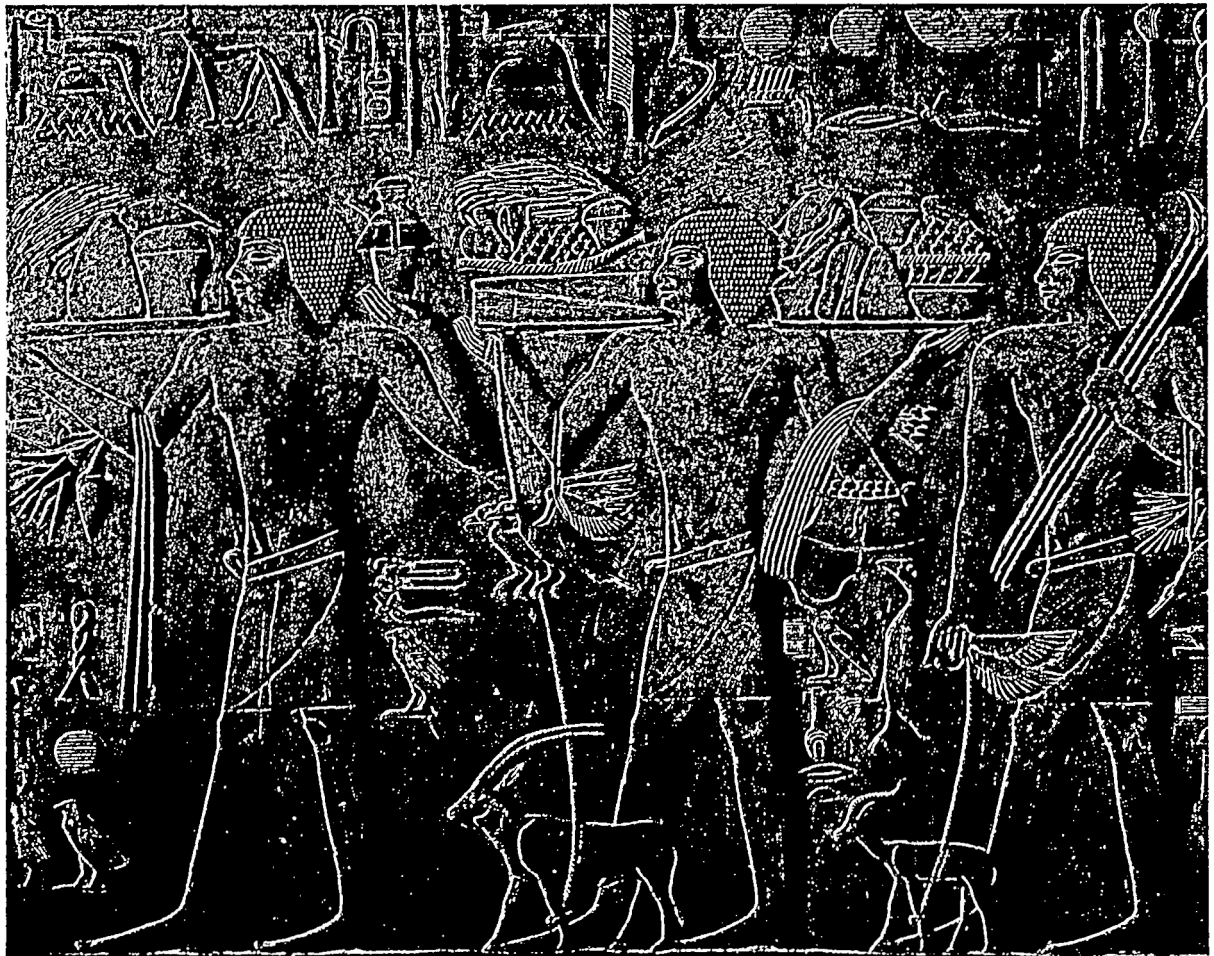
Spreading the Word

In the Mediterranean world, by contrast—thanks to the emergence of phonetic alphabets, with characters representing the sounds of the spoken language—reading and writing became accessible to large segments

Egyptian hieroglyphs, such as these on the tomb of Ptahhorep, some 4,400 years old, were both a means of communication and an art form perfected by scribes who spent years mastering their craft.

of the population. The very word “alphabet” is derived from the first two Greek letters, alpha and beta. The Greeks adapted their phonetic alphabet from the Phoenicians and bequeathed it to the Romans. That Latin alphabet has been passed along in modified form to many modern languages, including English.

The phonetic alphabet had far-reaching consequences for Western civilization. The Greek and Latin alphabets included just two dozen or so consonants and vowels. Students of phonetic alphabets had far fewer characters to master, and they quickly learned to relate those characters to the spoken word. Literacy increased among groups who had been largely illiterate in the past, including women and artisans. By 500 B.C., the spread of literacy and learning around the Mediterranean had set the stage for the towering intellectual achievements of the classical era. ■



Essay 3

THE CLASSICAL TRADITION

THE INFLUENCE OF ANCIENT GREECE AND ROME ON WESTERN CULTURE IS UNMATCHED by any other. The very words “classic” and “classical,” which literally refer to these ancient states, have also come to mean “the standard” or “the best.” Classicism—the reverence for Greek and Roman culture, especially literature, art, and architecture—is marked by a dedication to reason, restraint, elegance, harmony, and clarity, and has been a defining characteristic of Western culture throughout its history.

After the Roman Empire fell to nomads in the early Middle Ages, few Europeans had the education or inclination to pursue the ancient wisdom of the Greeks and Romans. Their work was never lost—manuscripts had been stored in medieval libraries and monasteries—but Renaissance thinkers acted as if they had discovered the classics. In Italy, the birthplace of the Renaissance, scholars looked first to their Roman ancestors: Livy, Ovid, Horace, Seneca, Pliny, and others. The writings of Cicero, the Roman statesman, became a model for Renaissance Italian prose. Virgil, too, with his sonorous verse, became a literary hero. When Florentine poet Francesco Petrarca became poet laureate in 1341, he gave a speech on Virgil in Latin.

Renaissance architects, led by 15th-century thinker Leon Battista Alberti, looked to the classical age for inspiration. Alberti studied ancient buildings in Rome before writing his influential *Ten Books on Architecture*, which stressed proportion and harmony. In art, similar classical ideals—harmony, balance, the glorification of the human form—inspired the sculptures of Michelangelo, the paintings of Raphael, and the work of many others.

In the 15th century, Byzantine Greeks left Constantinople for Italy, bringing a knowledge of classic Greek texts. The Florentine banker Cosimo de' Medici founded a Platonic academy, where scholar Marsilio Ficino translated hundreds of Greek works into the more familiar Latin. Plato and Socrates came to rival the Christian saints in Renaissance thought.

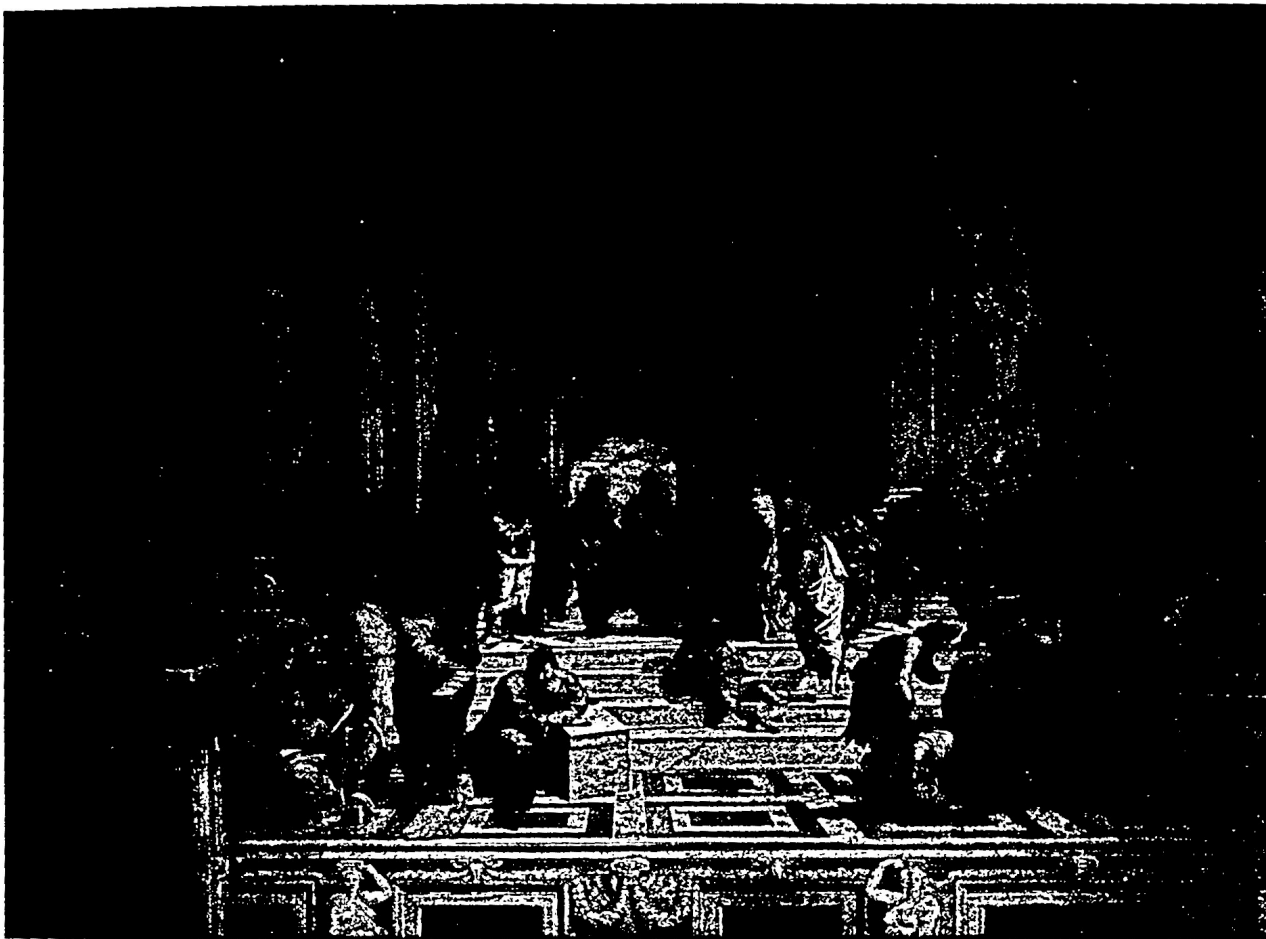
France and England

When the Reformation swept Europe, the fervor for classical learning abated, although Greek and Roman texts were by then firmly regarded as basic to education. Advances in astronomy, physics, and medicine in the 1500s and 1600s knocked ancient scientists down a peg, but classicism revived in 17th-century France as poets François de Malherbe, Nicolas Boileau-Despréaux, and Jean de La Fontaine wrote cool, reasoned verse. La Fontaine also wrote his famous *Fables*, drawn primarily from the Greek stories of Aesop. Dramatists Pierre Corneille and Jean Racine took style and content from the Greek classics. In Corneille's *Médée*, *Horace*, and *Polyeucte*, tragic heroes and heroines subdue their emotions to duty. To Corneille's dismay, his works were upstaged by Racine's, such as *Andromaque* and *Phèdre*, which also explored tragic characters from Greek myth. This reverence for ancient forms was bound to cause a backlash. In 1687 the poet Charles Perrault (today most famous for his fairy tales) declared that modern writers were superior to the ancients. French writers debated this “quarrel of ancients and moderns” for seven years, and some of their arguments presage Enlightenment attitudes.

In England, classicism often took the form of satire, particularly during the early 1700s, called the Augustan Age since writers emulated the ideals of Augustan Rome. Jonathan Swift wrote *Gulliver's Travels* and Alexander Pope wrote his epic poems, *The Dunciad* and *An Essay on Man*, in the 1720s and 1730s.

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Classical in content and composition, Renaissance painter Raphael's "School of Athens" depicts Plato and Aristotle at center, surrounded by sages including Socrates, Euclid, and Raphael himself, second from far right.

Classical Music

In Germany, classicism took the form of music. With the death of Bach and Handel, the complex polyphony of the baroque and rococo styles gave way to simplicity, balance, and restraint. Mozart, Haydn, Gluck, and Beethoven (in his early works) wrote music that emphasized a melodic line over a supporting harmony, with a wider range of dynamics. The piano was introduced during this era, as was the modern symphony orchestra and the standardized sonata form. So influential was the music of this period that the generic term for formal concert music today is "classical music."

In late 18th-century America, classical enthusiasts paid particular attention to architecture. Stimulated by archaeological finds at Pompeii and Herculaneum

in Italy and others in Greece, American architects began to use Greco-Roman forms for their buildings. Thomas Jefferson's University of Virginia, Benjamin Latrobe's Bank of Pennsylvania, and other public and private institutions built in this period were graced by columns and domes reminiscent of ancient Greece and Rome.

In the late 18th century, the pendulum swung toward Romanticism, and Western artists took up the ideals of passion, imagination, freedom, and rebellion rather than restraint and moderation. Greek and Roman language and learning still remained the bedrock of higher education into the 20th century, though. As Harvard scholar Charles Eliot Norton wrote in 1885, "I think that a knowledge of Greek thought and life, and of the arts in which the Greeks expressed their thought and sentiment, is essential to high culture. A man may know everything else, but without this knowledge he remains ignorant of the best intellectual and moral achievements of his own race." ■

Essay 4 THE SILK ROAD & THE EAST-WEST CONNECTION

IN ABOUT 138 B.C. HAN WU TI, THE EMPEROR OF CHINA, FACED A PROBLEM THAT would ultimately plague China throughout much of its history: Nomadic people, the Xiongnu, were raiding the borders of his country from the north and west. To the west of the Xiongnu, however, were the Yuezhi, with whom the emperor might make a profitable alliance. He learned that the Yuezhi disliked the Xiongnu, in part because the nomads had killed the Yuezhi king and used his skull as a drinking vessel.

Han Wu Ti sent Zhang Chien, a palace attendant, westward as an envoy to the Yuezhi. Captured while crossing nomad territory, Zhang Chien stayed in comfortable captivity for ten years. He finally escaped and made his way to Bactria, northwest of India. There he met disappointment, though, for the Yuezhi king was not, after all, so disturbed about the murder of his father that he wanted to go to war.

Back to China trudged Zhang Chien. He had failed to win an alliance, but he had succeeded in gathering valuable information about the lands and customs west of China. For instance, spotting Chinese goods for sale in Bactria, he had learned that they had traveled there via Bengal. Clearly, overland trade with the West was possible. Emperor Han Wu Ti used this new

knowledge to set up routes for long-distance trade. Over time, those routes grew into the immense network of east-west overland caravan passages known as the Silk Road.

The Routes

Immensely important in the development of Eurasian culture, the Silk Road linked trading cities from China to Europe. Originating in the east at the Han capital of Ch'ang-an, the main route cut west through Mongolia. Two branches split to skirt the desolate Taklimakan Desert, north and south, then rejoined at Kashgar. From there, the road traversed Bactria, where another branch split off, south into India. The main route continued to the Caspian Sea and on to the Mediterranean, with a southern branch to the Persian Gulf. Few traders traveled the entire length of the route: They sold their wares to middlemen along the way. Silk Road trade was busiest from approximately 200 B.C. to A.D. 200, during China's Han dynasty, then again about one thousand years later.

Far more than silk traveled the Silk Road, but the precious fabric was an important Chinese commodity. The Chinese guarded the secret of its manufacture until the sixth century, when, according to the historian Procopius, two Byzantine monks smuggled silkworm eggs out of China inside hollow walking sticks. East Asian traders brought spices such as cinnamon, cloves,



A small wooden door found along Silk Road routes in present-day Xinjiang depicts animals both real and legendary.

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nutmeg, and ginger to Europeans, who used them as flavorings, drugs, perfumes, and aphrodisiacs. India traded pepper, pearls, sesame oil, textiles, coral, and ivory. Central Asian nations sent horses and jade back to China, while Mediterranean merchants traded wools, gold, silver, gems, glassware, olive oil, and wine.

More than Silk

Buddhism, Hinduism, and Christianity also traveled these routes. Many Indian merchants were Buddhists, and they spread their religion to the cities they visited—Samarkand, Kashgar, Bukhara, and others—and on into China by the fifth century. Chinese Buddhists visited India and brought back valuable knowledge about the subcontinent. Christian missionaries spread the gospel through the Near East and North Africa.

Diseases started in the vast farming areas of China and spread along the road: Smallpox, measles, and bubonic plague were among the worst. Both Han China and Augustan Rome were stricken by epidemics in the second and third centuries. Smallpox, carried along the Silk Road, killed millions of Romans during the Plague of Antoninus in A.D. 165–180. The infamous Black Plague of the 1300s also moved by trade routes from China to Europe.

With the decline of the Han empire, trade along the unguarded Silk Road diminished until the Mongols swept through Asia in the 13th and 14th centuries and established the *pax mongolica*, which provided safe passage. Merchants and craftsmen again plied the road—among them, the Venetian traders Niccoló, Maffeo, and Marco Polo. European rulers also sent envoys east in search of allies against Islam. Some were remarkably intrepid. In 1245, Giovanni da Pian del Carpine, a Franciscan monk, carried a letter over 3,000 miles, across Bohemia, Poland, the Ukraine, and the steppes of Russia, from the Pope to the Mongol Khan, Güyük. Güyük, however, declined the Pope's invitation to



Deerskin boots like those worn by this modern-day horseman have been found in ancient graves, suggesting that travelers along the Silk Road have worn such footwear for centuries.

become a Christian. It wasn't until 1247 that the monk made it back to Rome with Güyük's reply. In 1253–55, William of Rubrouck made the difficult journey from Constantinople to the Crimea and on to the Great Khan's court, eating raw meat and drinking fermented mare's milk to survive. The new Khan, Mangu, was no more interested in converting than his predecessor. Just as God had created different fingers on one hand, he told Rubrouck, so he created different beliefs for different peoples.

By the 15th century, sea routes across the Indian Ocean began to supplant the more dangerous overland passage, and trade along the Silk Road declined. Not until the 19th and 20th centuries did these routes see much international traffic again, as European soldiers and archaeologists followed the road. German archaeologist Albert von le Coq, for instance, found Buddhist cave paintings along the routes, chiseled them out, and sent them to Berlin, explaining that he was saving them from future vandalism.

The future of the Silk Road may lie not in spices but instead in oil and gas. Discoveries of these fuels in Mongolia, Azerbaijan, Kazakhstan, and other Eastern locales may bring new trade to the region, and trucks may one day roll along the ancient routes of camel caravans. ■

Essay 5

PLAGUES & PEOPLES

CORTÉS AND HIS 600 SOLDIERS CONQUERED THE MIGHTY AZTECS, NOT JUST BECAUSE the Spaniards had guns, or horses, or literacy—although those things surely helped—but because they had germs. More lethal than any firearms, viruses and bacteria have accompanied soldiers and traders around the world, and the epidemics they caused have changed the course of history. A few infectious diseases—smallpox, bubonic plague, and AIDS—have ravaged populations throughout history.

These diseases caused epidemics, or rapidly spreading massive outbreaks of contagious illness. Natives of the Americas were hit particularly hard by European germs. Why didn't it happen in reverse: Why didn't Europeans contract unfamiliar diseases in the New World and carry them back home?

Animal Origins

The answer lies in the origins of these plagues. The diseases probably evolved from animal pathogens, or so scientists assume from studying closely related germs. Measles, smallpox, and tuberculosis may have evolved from cattle diseases. The flu and pertussis probably began in pigs, ducks, and dogs. Bubonic plague thrives in rodents. AIDS probably began in monkeys.

Diseases evolve among high concentrations of animals and people. As Old World agriculture evolved, farmers came into close daily contact with animals. Relatively few animals were domesticated in the Americas, though, and never in large concentrations. New World populations were isolated and lacked the web of trade routes that marked the Old World. With the exception of the Aztecs and Incas, populations did not concentrate densely. Thus few epidemic diseases originated in the Americas.

Smallpox infected Egypt as early as 1150 B.C. Soldiers returning from Mesopotamia brought it to the Roman Empire in A.D. 165. By A.D. 250, it had struck China. It swept Western Europe in the 1300s, possibly carried by returning crusaders, and hit France again in the 1400s. It was a serious threat

until late in the 18th century, when English surgeon Edward Jenner discovered a vaccine.

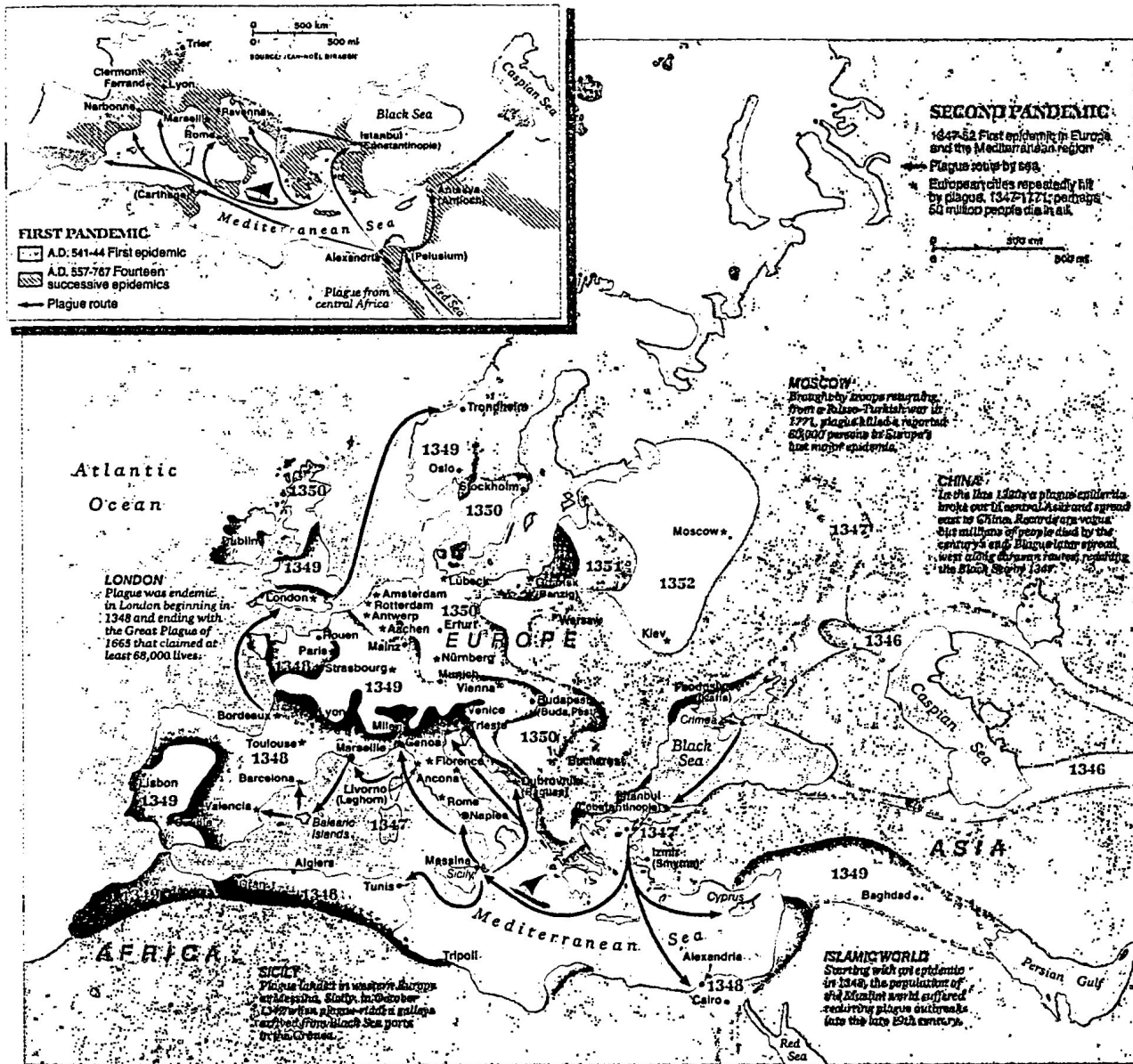
The Black Death

The first recorded outbreak of the bubonic plague began in the 1300s, when the disease swept through China, halving the Chinese population. From there, rats with infected fleas traveled through the Middle East and by ship to Sicily in 1347. By 1348, the Black Death had spread through Italy into France and Germany. By 1349 it had reached England and Ireland. Victims died within days. Their lymph nodes swelled with characteristic "buboes" and their skin turned black. Entire villages were wiped out, bodies were piled in the streets, and farm animals wandered untended. By 1351 about 24 million people, possibly one-third of Europe's population, had died of the bubonic plague. Further outbreaks in the 1500s and in London's Great Plague of 1665 killed tens of thousands more.

The New World

In sheer killing power, the plagues of Europe and Asia cannot equal the impact of European diseases—smallpox, measles, influenza, typhus, and others—on New World natives. Within 40 years of Columbus's arrival on Hispaniola, the island's 8 million inhabitants had died, most from disease. The Mesoamerican population dropped from 20 million to about 1.6 million a century after Cortés. By the late 1600s, Indians of the Mississippi Valley died similarly. Most of these deaths were unplanned, but not all. In 1763, British

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Beginning in Asia and central Africa and traveling along trade routes, the bubonic plague, also called the "Black Death," spread through Europe and struck repeatedly from the early Middle Ages until the 1700s.

commander Sir Jeffrey Amherst ordered blankets and handkerchiefs from smallpox victims to be distributed to Indians, "to extirpate this execrable race." Up to 95 percent of all Native Americans may have died from European disease. Disease struck Pacific Islanders, as well. Epidemics of syphilis, gonorrhea, tuberculosis, influenza, and smallpox reduced Hawaii's population from about 500,000 in 1779 to 74,000 in 1853.

Twentieth-century public health programs, with inoculations, vaccinations, and eventually antibiotics, helped control epidemics. Modern medicine virtually eradicated smallpox by 1979. Mutating viruses still remain a potent threat, however. The devastating 1918 influenza epidemic struck around the world, from Eskimos to Samoans. In the late 1950s, viruses from African monkeys made their way to humans. Since then, millions of people have died of AIDS. In a crowded world where people interact constantly, conditions for spawning epidemics have never been better. ■