

## Chinese Silk Cultivation

The Silk Road spanned the Asian continent and represented a form of global economy when the known world was smaller but more difficult to traverse than nowadays. A network of mostly land but also sea trading routes, the Silk Road stretched from China to Korea and Japan in the east, and connected China through Central Asia to India in the south and to Turkey and Italy in the west. The Silk Road system has existed for over 2,000 years, with specific routes changing over time. For millennia, highly valued silk, cotton, wool, glass, jade, lapis lazuli, gold, silver, salt, spices, tea, herbal medicines, foods, fruits, flowers, horses, musical instruments, and architectural, philosophical, and religious ideas traveled those routes. The roads themselves were generally in poor condition. Travelers in caravans had to brave bleak deserts, high mountains, extreme heat and cold. They had to face bandits and raiders, imprisonment, starvation, and other forms of deprivation. Those going by sea braved the uncertainties of weather, poorly constructed ships, and pirates. Yet because the goods and ideas were in great demand and commanded high prices, courtly rewards, or spiritual benefits, they were worth the trouble of transporting great distances.

Since the concept of "Seidenstrassen" or "Silk Roads" was first invented by the German geologist and explorer Baron Ferdinand von Richthofen in 1877, the "Silk Road" has been used as a metaphor of European and Asian cultural interchange. While largely commercial, the Silk Road provided the vehicle for all sorts of creative exchange between tremendously diverse peoples and cultures.

Silk cultivation and production is such an extraordinary process that it is easy to see why its invention was legendary and its discovery eluded many who sought its secrets. The original production of silk in China is often attributed to Fo Xi, the emperor who initiated the raising of silkworms and the cultivation of mulberry trees to feed them. Xi Lingshi, the wife of the Yellow Emperor whose reign is dated from 2677 to 2597 B.C.E., is regarded as the legendary Lady of the Silkworms for having developed the method for unraveling the cocoons and reeling the silk filament. Archaeological finds from this period include silk fabric from the southeast Zhejiang province dated to about 3000 B.C.E. and a silk cocoon from the Yellow River valley in northern China dated to about 2500 B.C.E. Yet silk cloth fragments and a cup carved with a silkworm design from the Yangtze Valley in southern China dated to about 5000-4000 B.C.E. suggest that sericulture, the process of making silk, may have an earlier origin than suggested by legend.

Many insects from all over the world — and spiders as well — produce silk. One of the native Chinese varieties of silkworm with the scientific name *Bombyx mori* is uniquely suited to the production of superbly high-quality silk. This silkworm, which is actually a caterpillar, takes adult form as a blind, flightless moth that immediately mates, lays about 400 eggs in a four- to six-day period, and then abruptly dies. The eggs must be kept at a warm temperature for them to hatch as silkworms or caterpillars. When they do hatch, they are stacked in layers of trays and given

chopped up leaves of the white mulberry to eat. They eat throughout the day for four or five weeks, growing to about 10,000 times their original weight. When large enough, a worm produces a liquid gel through its glands that dries into a threadlike filament, wrapping around the worm and forming a cocoon in the course of three or four days. The amazing feature of the *Bombyx mori* is that its filament, generally in the range of 300-1000 yards — and sometimes a mile — long, is very strong and can be unwrapped. To do this, the cocoon is first boiled. This kills the pupae inside and dissolves the gum resin or seracin that holds the cocoon together. Cocoons may then be soaked in warm water and unwound or be dried for storage, sale, and shipment. Several filaments are combined to form a silk thread and wound onto a reel. One ounce of eggs produces worms that require a ton of leaves to eat, and results in about 12 pounds of raw silk. The silk threads may be spun together, often with other yarn, dyed, and woven on looms to make all sorts of products. It takes about 2000-3000 cocoons to make a pound of silk needed for a dress; about 150 cocoons are needed for a necktie. The Chinese traditionally incubated the eggs during the spring, timing their hatching as the mulberry trees come to leaf. Sericulture in China traditionally involved taboos and rituals designed for the health and abundance of the silkworms. Typically, silk production was women's work. Currently, some 10 million Chinese are involved in making raw silk, producing an estimated 60,000 tons annually — about half of the world's output. Silk is still relatively rare, and therefore expensive; consider that silk constitutes only 0.2 percent of the world's textile fabric.

Early in Chinese history, silk was used to clothe the emperor, but eventually it was adopted widely through Chinese society. Silk proved to be valuable for fishing lines, for the making of paper, for musical instrument strings. Under the Han dynasty (206 B.C.E.-220 C.E.), silk became a great trade item, used for royal gifts and tribute. It also became a generalized medium of exchange, like gold or money. Chinese farmers paid their taxes in silk. Civil servants received their salary in silk.

## Trade along the Silk Road

Evidence of trade in ancient Chinese silk has been found in archaeological excavations in Central Asian Bactria (currently the region around Balkh and Mazar-i-Sharif, Afghanistan) dating to about 500 B.C.E. Strands of silk have been found in ancient Egypt from about 1000 B.C.E., but these may be of Indian rather than Chinese origin. Alexander the Great, who ruled much of the known world from the Mediterranean to India in the late 4th century B.C.E., wore robes of deep purple-dyed silk. The silk was probably from China, which the Greeks knew as Seres — the place where serikos or silk was made — and made optimum use of the rare and expensive purple dye that was produced by the Phoenicians of Tyre from the secretions of sea snails. Yet, in the West, knowledge of silk and its trade were relatively limited. So, too, in the Far East. Sericulture was carried to Korea by Chinese immigrants in about 200 B.C.E. Though silk was extant in Japan at the turn of the millennium, sericulture was not widely known there until about the 3rd century C.E.

Conventionally, historians refer to three periods of intense Silk Road trade: 1) from 206 B.C.E. to 220 C.E., between the ancient Chinese Han dynasty and Central Asia, extending to Rome; 2) from about 618 to 907 C.E., between Tang dynasty China and Central Asia, Byzantium, the Arab Umayyad and Abbasid empires, the Sasanian Persian Empire, and India, and coinciding with the expansion of Islam, Buddhism, Assyrian Christianity, Zoroastrianism, Manicheism, and Judaism into Central Asia; and 3) during the 13th and 14th centuries, between China, Central Asia, Persia, India, and early modern Europe, made possible by Mongol control of most of the Silk Road. Some would add a modern Silk Road period, beginning in the 19th century with the "Great Game" — the competition between Russian and British colonial powers for influence over Central Asia — and extending through today.

In 198 B.C.E., the Han dynasty concluded a treaty with a Central Asian people, the Xiongnu. The emperor agreed to give his daughter to the Xiongnu ruler and pay an annual gift in gold and silk. By the 1st century B.C.E. silk reached Rome, initiating the first "Silk Road." Pliny, writing about silk, thought it was made from the down of trees in Seres. It was very popular among the Romans. People wore rare strips of silk on their clothing and sought more; they spent increasing amounts of gold and silver, leading to a shortage in precious metals. Coinciding with the development of ruling elites and the beginnings of empire, silk was associated with wealth and power — Julius Caesar entered Rome in triumph under silk canopies. Over the next three centuries, silk imports increased, especially with the Pax Romana of the early emperors, which opened up trade routes in Asia Minor and the Middle East. As silk came westward, newly invented blown glass, asbestos, amber, and red coral moved eastward. Despite some warnings about the silk trade's deleterious consequences, it became a medium of exchange and tribute, and when in 408 C.E. Alaric the Visigoth besieged Rome, he demanded and received as ransom 5,000 pounds of gold and 4,000 tunics of silk.

Silk continued to be popular in the Mediterranean region even as Rome declined. In Byzantium, the eastern successor of the Roman state, silk purchases accounted for a large drain on the treasury. In 552 C.E., legend has it that two Assyrian Christian monks who visited China learned the secret of silk production and smuggled out silkworms and mulberry seeds in their walking sticks. They returned to Constantinople, the capital of the Byzantine Empire, and provided the impetus for the growth of a local silk industry. Under Emperor Justinian I, Constantinople's silks were used throughout Europe for religious vestments, rituals, and aristocratic dress. The Persians, too, acquired knowledge of silk production; and Damascus became a silk center under Arab rulers. By the time the second Silk Road developed under the Tang dynasty (618-907 C.E.) in China, Central Asians had also learned silk cultivation and developed their own technique of silk manufacturing. Chinese silks, though, were still in demand for their exceptionally high quality. The Tang rulers needed horses for their military. The best horses were in the west, held by the Turkic Uyghurs and the peoples of the Fergana Valley. The Tang traded silk for horses, 40 bolts for each pony in the 8th century.

The understanding of exchange along the Silk Road has broadened with new archaeological discoveries throughout the region. It is now clear that there has been trade between what is now defined as Europe and Asia for many millennia. Textiles, beads, and languages all moved across the region centuries before the Common Era. Traffic between India and Europe, including Russia, was always an integral part of the Silk Road and continued long after the collapse of the 13th-century Pax Mongolica that closed major land routes across Eurasia. Products and ideas have been continuously exchanged back and forth across the region, and that exchange continues today.

Paper, for example, was invented in China and remained a secret of the region for centuries; along with written language, writing materials were thought to possess magical qualities. Religious texts as well as commercial bills were written out and transported along a route that, through such communication, could more easily function.

Certain ceramics along the Silk Road became particularly sought after. Finely painted, pure porcelain from China was greatly desired by the Islamic elite and was traded from China east to Japan and west across Asia, and eventually on to Europe. Japanese and Turkish potters put their own stamp on this ceramic tradition. On the coattails of porcelain came tea, and with the passion for tea in the West came the fine teapots of China and Japan. Chinese, Japanese, and Turkish ceramics traditions all remain vital.

Cotton has a similarly long if less expensive history. From India cotton traveled to Central Asia and Europe, becoming the crop that almost ruined economies as varied as those of 20th-century Uzbekistan and the 19th-century American South. Cotton production became a symbol of India's independence in the 1930s and an ecological disaster in parts of Central Asia.

Carpets have a more nomadic history, which springs from the looms of sheep herders in ancient Iran and Central Asia. One of the extraordinary archaeological discoveries of the 20th century was the 4th-century B.C.E. Pazyryk carpet, found perfectly preserved on the Eurasian steppes west of Mongolia. This finely woven carpet connected the frozen steppe with Persian civilization and indicated that carpet weaving stretched back more than three millennia. The carpet has been an important decorative element of nomadic culture that has carried its motifs across the Silk Road region for thousands of years.

Workers in stone and metals also fashioned luxury goods for exchange. People all along the Silk Road sought jewelry and engraved metal containers that were easily transported. Glass and stone beads particularly were traded throughout history and are often found far from their source. Lapis lazuli from the Pamir Mountains, precious gems from India, and turquoise all found their way to Rome, Byzantium, China, and Japan. Glass, which like silk seemed magical to those who did not understand its origins, was traded from the Middle East to China. Unlike textiles and jewelry it did not travel well, and its exchange is more difficult to trace. Glass and metalwork, however, are two of the great Islamic decorative traditions that still survive. The Venetians, in turn, took glass art perhaps to its highest form.

## Religions along the Silk Road

### Buddhism

The Silk Road provided a network for the spread of the teachings of the Buddha, enabling Buddhism to become a world religion and to develop into a sophisticated and diverse system of belief and practice. One very significant tradition of Buddhism is that of Mahayana, which preached the continuity of the Buddha's compassionate nature through bodhisattvas — embodiments of love and teaching who became the bridge to local traditions, communities, and cultures. The tradition suggests that all bodhisattva Buddhist seekers are equal before the Buddha, have a Buddha-nature, and may aspire to reach Buddhahood through right ways of living.

In Central Asia, Buddhism is associated with the rise of the Kushan Empire, which lasted from the 1st to the 3rd century C.E. While Kushan rule marked a significant period in the growth of Buddhism, Kushan coins illustrate more than a narrow adherence to Buddhism. They show that along the Silk Road there were kings and rulers who sought to rise above certain groups, tribes, and religious traditions. Along with figures of their own kings such as Kanishka, Kushan coins depict Buddhist, Greek, and Iranian nobility. Statues made by the Gandharan school also feature a blend of Indian, Greek, and Iranian elements. The rulers built monasteries and temples along the Silk Road that were often used by the faithful of various religions. One such monastery is believed to have been in the famous city of Bukhara, which later became a major Central Asian cultural center of Islam. The oldest manuscript of an Indian Buddhist text, the Dharmapada, has been preserved in the Central Asian Kharosthi script. This combination of patronage, the founding of monasteries, and the rise of Buddhist scholarship produced favorable conditions for the general spread of Buddhism. Rulers, missionaries, monks, and traders all contributed to make Buddhism a very significant presence all over Central Asia.

The greatest success of Buddhism came with its spread to China, where it reinvigorated the existing philosophy, culture, and literature. It also reached Korea and Japan. Its encounter with Daoism and Confucianism helped establish deep roots among the peoples of East Asia. Here Buddhism became a religious and spiritual presence as well as the catalyst for greater links with Eurasia. Thus, during the first millennium of the Common Era, Buddhism was the strongest influence among the peoples of the Silk Road. Great Buddhist scholars always looked at the Silk Road as a connecting thread with what they regarded as the founding values of Buddhism. Among them was the pilgrim-monk, Xuanzang (595-664 C.E.), who undertook a challenging 16-year journey (629-45 C.E.) towards the West, crossing the Takla Makan and Gobi deserts, the high Pamir Mountains, and also visiting Buddhist monuments in Bukhara, Samarkand, and Herat. Xuanzang returned to China laden with 650 books on Buddhism and provided a colorful account of his journey and the history of Buddhism in the region. He contributed greatly to the survival and spread of Buddhism in East Asia.

## Christianity

Along with the growth of Buddhism, the Silk Road nurtured minority groups from other major faiths. Assyrian Christians, or more accurately the Church of the East, were one such group. Often mistakenly identified simply as Nestorianism, the Church was strongest in eastern Syria, where as part of the Persian Empire it gained recognition and subsequently flourished after the arrival of Islam. In Syria, this tradition is a visible presence to this day, attesting to the lasting influence of the Eastern Christian tradition in the region. The Assyrian Christians played a crucial role in the creation of an important intellectual center at Jundishapur, where study of philosophy, astronomy, medicine, and astrology directly influenced Muslim learning. Doctrinally, they shared with other Christian groups the belief in the foundational and redemptive role of Jesus Christ, but they also taught that Jesus Christ had two distinct natures, divine and human, a view that brought the then patriarch of Constantinople, Nestorius, into conflict with those who held to the doctrine of the inseparability of the two natures of Jesus. Subsequently, the followers of Nestorius were excommunicated and eventually became a separate church with its own distinctive hierarchy, liturgy, and theological tradition.

In Central Asia the Assyrian Christians influenced the Sogdians, who, due to their strategic location, had already become the commercial masters of the Silk Road and its cultural transmitters. Sogdian became the lingua franca of the Silk Road, spreading Christianity further east to China and north among the Turks. The Eastern Christians succeeded in three major mass conversions of Turks in Central Asia from the 7th to the 11th centuries. Despite being seen as a faith of foreign traveling merchants, Eastern Christianity gained acknowledgment as "the Brilliant Religion" (Foltz 2000: 72) in China, with Christian saints being referred to as Buddhas and their treatises as sutras.

From the all-knowing and all-accurate Wikipedia:

Two (possibly Nestorian) monks were preaching Christianity in India in the 6th century before they smuggled silkworm eggs from China to the Eastern Roman Empire. The first documentation of Christianity entering China was written on an 8th-century stone tablet known as the Nestorian Stele. It records that Christians reached the Tang dynasty capital Xi'an in 635 and were allowed to establish places of worship and to propagate their faith. The leader of the Christian travelers was Alopen.

In 845, at the height of the Great Anti-Buddhist Persecution, Emperor Wuzong decreed that Buddhism, Christianity, and Zoroastrianism be banned, and their very considerable assets forfeited to the state. In 986 a monk reported to the Patriarch of the East: "Christianity is extinct in China; the native Christians have perished in one way or another; the church has been destroyed and there is only one Christian left in the land." Karel Pieters noted that some Christian gravestones dated from the Song and Liao dynasties, implying that some Christians remained in China.