

Silk's Origin: Gojoseon and the Seres' Role in Ancient Silk Production and the Silk Road

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Abstract

This research challenges the Sinocentric view of the origin of silk 'Geum brocade' by arguing that Gojoseon, the ancient Korea, played a crucial role in its development and expansion. Gojoseon used wild silkworms BingJam to produce high-quality BingGeum brocade. The study also identifies the Seres in BC 7th century, previously thought to be Chinese, as the Xiongnu Silla of Gojoseon, who traded extensively along the Silk Road. Advanced weaving cultures evidenced by archaeological finds and historical texts are highlighted, demonstrating Gojoseon's significant contribution to early silk production and its global impact.

Keywords: Geum, Seres Silla, Dong-Yi Gojoseon, Hongsban Culture, Jade Silkworms.

INTRODUCTION

In ancient Europe, because silk was abundant in East, silk was erroneously believed to have originated in China. Yet, the regions now known as North China or East China were not under the dominion of the China people, but Gojoseon(古朝鮮) people. The term 'silk' is believed to originate from the 'silk thread spool, 'Silkkury(실꾸리)' of Goguryeo dynasty, a descendant of Gojoseon (Cho, 2012). In ancient times, due to the limit of coin issuance and uncertainty of coin alloy, Silkkury, the winder of silk thread was used as an international currency (Kim & Na, 2023). As a producer and exporter of silk, the Gojoseon and Goguryeo people were very active on the Silk Road (Cho, 2012). Studies on the origin of the existing high-quality brocade 'Geum(錦)' fabrics and the exchange between East and West through the Silk Road had been mainly approached from a Chinese-centric perspective, but new perspectives has been presented to counter this (Good, 1995; Kim & Na, 2024).

In the West, thick silk fabrics were unraveled and thin silk or tapestry was woven anew (Whitfield, 2001). Geum(錦), Gyeom(縑), Ju(紬), and Shantung silk are relatively thick fabrics with a high thread density, which is quite different from thin fabrics such as China silk or Hwan(紬) (Kim et al., 2013). Geum, a medium-weight fabric woven by the method of 'dividing the section' (Sim, 1998), is distinguished by its vibrant patterns, which are created by the partial assembly of colored yarns, and its stiffly.

In ancient Western Europe, silk was referred to as "Sere" or "Seres". Seres is documented as exporting silk to the West as early as the 5th and 6th centuries BC (Nagasawa & Yokohari, 2001). True Silk Road is approximately 2,000 years earlier than the commonly recognized the Silk Road (1st century BC) (Hann, 2013). The geographical proximity, shared ethnicity, and cultural affinities between Gojoseon(古朝鮮), the Dong-Yi(東夷) countries, and Seres are well-documented (Kim & Na, 2023). The production of Geum in these regions was extensively chronicled, with Geum textiles serving as a distinctive emblem of Goguryeo, a northern power, through the stone wording of Goguryeo warrior (泉男生 墓誌銘) (Park, 2018). The weaving of Geum with colorful patterns, which could not be woven with simple oblique looms of the Han(漢) Dynasty, was a complex technique that requires specialized loom and expertise (Shin, 2012). The Dong-Yi(東夷) countries and the minority groups in middle Asia, employed a rectangular horizontal loom for this intricate Geum, a method that

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has been preserved and continues to be utilized by identity of ethnic minorities. The silks excavated from Takla-Makhan were wider than Chinese silks(Ding, 2012), proving that they were produced using independent techniques.

Recent scholarship has presented novel perspectives on the utilization of natural 5-colored wild silkworms by the Dong-Yi in the Gojoseon period (about BC 2,400) and their sophisticated weaving techniques (about BC 1,200) (Lee & Na, 2024). Unlike China, the production of silk fabrics in ancient Korea was characterized by the active use of wild-silkworm cocoons. The fibers obtained from major wild silkworms of the East, such as JakJam (*Antheraea pernyi*) and CheonJam (*Antheraea yamamai*), have various colors, (Peigler, 2020) which are combined with natural dyeing techniques to create silk fabrics with unique colors (Maruyama & Domei, 2012).

This natural dyeing technique is an important element that reflects the nature-friendly ideas and aesthetic sense of ancient Koreans. In particular, the colorful colored fabric of Goguryeo showed the development of this technique (Jang, 2006; Park, 2003) .

This novel perspective necessitates a multi-layered and complex understanding of ancient East Asian silk production that surpasses the prevailing Chinese-centric interpretation. A more precise reconstruction of the history of silk production can be achieved by incorporating social, cultural, and environmental factors, in addition to technological developments in the production of ancient silk fabrics.

The objective of this study is to ascertain the identity of the Seres, a silk production and trade group that is mentioned in ancient Western literature, and to reinterpret their role in relation to ancient Korea, Gojoseon. Contrary to the prevailing perspective that identifies the Seres with China (Nagasawa, 2005), this study examines the prospered Yuezhi, who had close ties with Gojoseon as silk origin, located in the northeast part of China. This study explores the Seres, who placed significant value on trade, by analyzing the geographical location, their international trade networks, and their cultural and technological connections. The research will undertake a reexamination of the roles of the Dong-Yi countries and Seres, where regions have heretofore been relatively overlooked in the context of the Gojoseon. This reexamination will be facilitated by a novel perspective on the Silk Road. Furthermore, the research will present a new perspective that will extend beyond the existing understanding of Gojoseon's internationality and the origin of silk production. A thoroughgoing analysis of the advanced weaving technology of Gojoseon and the relationship between Seres and Gojoseon will be conducted to illuminate the silk production in ancient East Asia.

RESEARCH METHODOLOGY

This study employs a multi-layered and integrated methodological approach, focusing on the 24th century BC and 7th century BC, to investigate the historical, cultural, and technological aspects related to the production of silk textiles in ancient Korea, Gojoseon, located in the northeastern region.

Firstly, a comprehensive review of the extensive historical literature related to the production of silk textiles in ancient East Asia was conducted, with a focus on records related to Gojoseon. The objective of this study is to identify the international context of Gojoseon's silk production and trade by comparing and analyzing records related to Seres in Chinese and Western literature and the Silk Road narrative. The analysis was enhanced by taking into account ancient language, figurative expressions, and ambiguities in the literature. The analysis was further enriched by referencing the latest academic research, which resolved the difficulties in interpretation, such as "繁體" (traditional writing skill in Chinese), "春秋筆法"(writing method of Spring and Autumn period) and "假借" (borrowing the sound).

Secondly, evidence pertaining to silk production was collected through the analysis of archaeological artifacts excavated in northern regions, with a particular focus on those associated with Gojoseon. These artifacts included silk fragments, tools and looms utilized in silk production, and trade-related artifacts that illustrate the Central Asian network. This multifaceted approach to research has yielded a comprehensive and broad-ranging perspective on an important aspect of ancient Northeast Asian history.

RESEARCH RESULTS

Geum-weaving culture and Economic Prosperity in Gojoseon

“There were natural five-colored silkworms called BingJam(冰蠶) in Won-Gyo Mountain that were harvested in the fall. Later generations followed this tradition, dyeing silk fibers with five colors and weaving” (Kim & Na, 2023). This passage describes the story of wild silkworms and the origin of gorgeous colored fabric. The wild-silkworms BingJam was five-colored, and later generations imitated it by dyeing five-colored silk, and weaved it into tabby or brocade Geum. This is also expressed in the same way in a Tang(唐) Dynasty poem, which says that Sea person(海人) of Dong-Yi, who seems Dangun(檀君) of Gojoseon (BC 2333), gifted this special product BingJam to the king Yao (堯), who regarded it as ceremonial cloth. The Chinese believed that Dong-Yi lived in the area around present-day Shandong Province, or in an area divided by several large inland lakes (Lee & Na, 2024). According to the BuDoJi(符都誌), it confirms that Won-Gyo Mountain was located in the current Shandong Province (Park, 1986).

Various wild silkworms inhabit the Northeast Asian region. The main wild silkworms are the JakJam (柞蠶 oak silkworm, *Antheraea pernyi*) and the CheonJam (天蠶 sky silkworm, *Antheraea yamamai*), which feed on oak trees and are harvested in autumn (Chu, 2017). Currently, JakJam fabrics are found in Liaoning(遼東) and Shandong provinces in northeastern China, and it is assumed that they were widely distributed in these areas in the past as well. CheonJam are mainly found in Japan, but what is noteworthy is that the distribution of these wild silkworms and mulberry trees is closely related to the territory of Gojoseon (Lee & Na, 2024). Wild silkworms were widely distributed in southern Siberia and the southern Mongolian desert in the second century BC (Good, 1995). The phrase 'Guol Bi Yom Sa' (厥篚檿絲, meaning 'mountain silk in a barbarian's basket') in the 'Sangseo Ugong(尚書 禹貢)' indicates that silk fabrics made from wild silkworms were a specialty of the Dong-Yi people. Similarly, 'Guol Gong Chil Sa' (厥貢漆絲, meaning 'lacquer and silk fibers as tribute') suggests that silk fiber and lacquer were specialties of Dong-Yi. And 'Guol Bi Jik Pae(厥匪織貝)', which means that barbarians and bandits weave the shells. And according to the 'ShiJing MoJjeon(詩經 毛傳)', 'Pae, Geum Mun Ya(貝, 錦文也)', which means 'shell is Geum pattern' by a three-part syllogism.

Large-scale mulberry leaf harvesting is essential to obtain silk thread. For example, 12,000 silkworms consume about 20 bags of mulberry leaves per day, and about 220 kg of mulberry leaves are needed to produce 1 kg of silk fiber. In the period of the QinHan(秦漢), the production of silk was so low in Jina (支那) that there was a law cutting mulberry trees was prohibited (St. Claire, 2018). In addition, silk was scarce in the Jina, and it was traded at a much higher price than in Dong-Yi or the north regions, and even if intellectuals wanted to write on thin silk in the time of the Spring and Autumn period, they could not use it at all. According to the 'Theory of Salt & Iron(鹽鐵論)' of the Han Dynasty, they could not wear silk clothes before the age of 60 or 70 (Min, 1998). This record means that the Jina did not have enough silk production and it was even more impossible to wear Geum of much more silk fibers in it (Lee & Na, 2024). Also, it is recorded that the upper class wore 'Yok-Su-Ra-Hwan(縹繡羅紈)' and the middle class wore 'So-Je-BingGeum(縹緋冰錦)'. The upper class of the Han Dynasty preferred thin silk fabrics with embroidery and thin silk, while the middle class wore 'So-Je(rough plain weave)' and multi-colored 'BingGeum'. This proves that stiff ice brocade BingGeum woven from natural colored BingJam was not preferred by the upper class of the Han Dynasty.

On the other hand, there said a 'huge' mulberry tree called Busang(扶桑樹) in Go-Joseon in the east, this is

suggesting that mulberry trees and silk were abundant in Go-Joseon. According to the 'Shānhǎi Jīng (山海經)', there was a country called Joseon in the corner of the North Sea and the East Sea, and it is described as a land of nurturing where people live near the water and take care of each other. The Dong-Yi's territory was very huge, and the center of it was the current Shandong since before the Zhou(周) (Hwang, 2012). According to the 'ShiJing(詩經)', 'ChangHai's Mulberry Fields(滄海桑田)' or 'SangJeon ByeokHae(桑田碧海)' means that the inland land, which is surrounded by blue water, has long been a mulberry field and has been engaged in sericulture for a long time. In other words, the origin of silk was current Shandong and current Liaodong, where shared a common seri-cultural culture.

In addition, the jade sculptures of silkworm found at the Hongshan(紅山) Culture site & Mongol (Fig.1), suggesting that the sericulture and silk production technology of Gojoseon can be traced back to around 4,500 BC, and they are a strong refutation of the existing Chinese-centric theory of silk production. The sculpture of the silkworm is evidence that sericulture had a religious and cultural significance at the time.

The silk fabric artifacts excavated from the 'Weiyingsi culture (魏營子)' site are important archaeological evidence supporting the use of Geum and the high-quality silk fabrics in the pick of Gojoseon period (Lee & Na, 2024). This is believed to be the first example of Geum brocade in the world the 13~11th century BC.

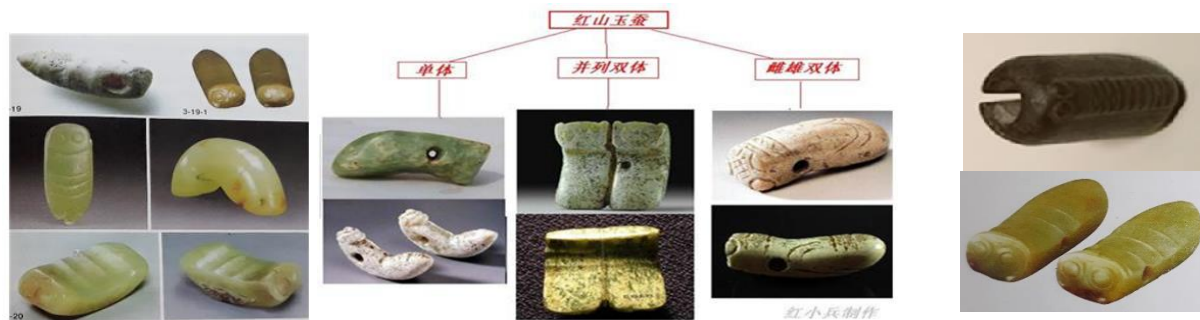


Figure 1. Jade Sculptures from Hongshan Culture Site & Mongol Nasatae Relics (Park, 2013; Lee & Na, 2024)

Hongshan culture (4,500 BC) and the Liao-He civilization (8,000 BC) beyond the Great Wall are 1,000-1,500 years older than the Yellow River civilization, and the Hongshan culture is called the 'flower' of civilizations as a beautiful 'jade' cultural site (Woo, 2012). Many beautiful jade artifacts have been excavated, and it had a splendid jade civilization with jade birds, jade combs, and cloud-shaped jades. Dong-Yi, who founded this culture, was ancestor of Gojoseon, and wore a topknot with jade hair ornaments and thick clothes with many decorative buttons. In particular, the large number of jade buttons found are thought to have been attached to clothes, and the thickness of the clothes must have been thick enough to bear the weight of the buttons. And silkworm made of jade, which proves that sericulture began around 4,500 BC (Woo, 2018). Since several jade silkworms including Mongol region have been excavated, it can be said that silk fabric production dates back to the Neolithic period (Park, 2012). The lower layers of the Hagajeon (2,500 BC) correspond to the beginning of Gojoseon (2,333 BC) (Shin, 2018; Woo, 2018), and there is no Chinese record of this region at that time (Park, 2011; Park, 2018).

Around 2,300 BC, 1st Dangun the Great of Gojoseon encouraged people to engage in sericulture and entrusted the task to his queen (Park, 2011). According to the 'SejongSilok Geography (世宗實錄 地理志)', Gojoseon was an ally of nine major countries: Joseon, Silla, Goguryeo, North/South Okjeo, North/East Buyeo(扶餘), and Ye and Maek (Min, 2000). Gojoseon was a confederation of nine large countries with a Bronze Age culture (Shim, 2014). Dong-Yi countries consisted of seven countries: Buyeo, Goguryeo, East Okjeo, Eburu, Ye(濊), Khan(韓), and Wae(倭), according to the 'Samgukji Wei Su Dong-Yi (三國志 魏書 東夷傳)' (Kim, 2007), thus,

the ally with same ancestor and culture, Dong-Yi had been composed of the common countries with Gojoseon. By the way, Khan(韓, 翰, 干, 汗) also meant a title or a king in the central and eastern Eurasian steppe.

The ancient Korean 'Buyeo' had woven BingGeum brocade with colored silk yarns. The people of Buyeo worshiped white and yet when go abroad, wore embroidery Su(繡), colorful silk brocade Geum, and patterned woolen brocade Gye(罽) garments, and additional furs such as fox, black monkey, and black and white mink, according to the record 'Samgukji Wei Su Dong-Yi (三國志 魏書 東夷傳)'. The Buyeo people of Gojoseon were Dong-Yi and also known as 'East-Tarari' (Covell, 1999).

Korean silkworms are different from Chinese silkworms in that they sleep three times, while Chinese silkworms sleep four times (Park, 2011). In addition, Chinese silkworms' cocoons are oval-shaped, while Korean silkworms' cocoons are shaped of peanuts, which is similar to the cocoons of the present-day Shandong Peninsula and the Asuka period(飛鳥) in Japan (Min, 2000). Nagano, Japan is believed to have been home to many Goguryeo immigrants (Lee, 2002), and the cocoons remaining in the local museum were definitely native cocoons in the shape of peanuts.

There are many ancient documents that prove the culture of clothing decorated with beautiful Geum from Gojoseon. It should be noted that the sources of all these references are books written by Chinese people. Dong-Yi were indigenous people of the East, according to the 'HuHanShu Dong-Yi Jeon(後漢書 東夷列傳)', the culture of the Dong-Yi, Buyeo, Sam Khan, Goguryeo, and Baekje was all recorded as being indigenous, who enjoyed drinking, singing, and dancing, and wore triangular hats and Geum clothes (東夷率皆土着喜飲酒歌舞 或冠弁衣錦) (Lee, 2016).

Dong-Yi and North people wove Geum. As above mentioned, Geum weaving was possible from an early stage 13~11th century BC, splendid Geum fabrics were exported to neighboring countries. Goguryeo BaekGeum(白錦), KHanGeum(韓錦), and JohaGeum(朝霞錦) were exported to Jina and Wae Asuka (Min, 1995). According to the 'HuHanShu Dong-Yi Jeon(後漢書 東夷列傳)', the people of Makhhan valued beads as a treasure and used them to decorate clothes, wear them around the neck or ears, but did not consider gold, silver, and brocade to be treasures (以瓔珠為財寶 或以綴衣為飾 或以縣頸 垂耳 不以金銀錦繡為珍). According to the 'GuTangShu' Dong-Yi Yeol Jeon Goguryeo (舊唐書 東夷列傳 高句麗)', the king of Goguryeo wore a five-colored Geum robe, a white "Ra" silk crown, and a white leather belt, decorated with gold (衣裳服飾,唯王五彩,以白羅為冠,白皮小帶,其冠及帶,或以金飾).

According to the 'Samgukji Owhan Seonbi Dong-Yi ByeonJin (三國志 烏桓 鮮卑 東夷 弁辰條)', it is recorded that the people of ByeonJin(弁辰) lived with the people of Jinkhan(辰韓) together and had produced thick Gyeom(縑) silk fabrics. Also they weaved 'Wide and Fine' cloth, knew how to plant mulberry trees, and raise silkworms (弁辰與辰韓雜居 亦有城郭 亦作廣幅細布). The fact that the people of ByeonJin weaved wide and fine cloths proves that their weaving technology was superior to that of the Jina people. Gyeom which ByeonJin produced was woven from two ply of silk thread which is good to prevent water leakage as for paper substitute. Gyeom was produced in the Sam Khan(三韓: Three Khans- Byeonkhan弁韓, Jinkhan辰韓 & Makhhan馬韓 - 三韓管境) and Silla (Oh & Kim, 2018). Gyeom was called 'Chum' in China and was used as a bribe or luxury item during the Han Dynasty (Cho, 2006). At that time, gold and silver would have been abundant in Gojoseon through trade between the east and west, this is because that every household could weave colorful Geum(錦), Gye (罽, wool brocade) and Gyeom(縑). Han Wu-Ti(漢武帝) also issued a ban on

wearing (Gojoseon's) silk clothing due to the economic downturn (Park, 2018).

Seres' role on the Silk Road

The identity of Seres, which is mentioned as a silk producing region in Western literature, including ancient Roman literature, has long been debated. Since before the Han dynasty, the protagonist of the unobstructed Silk Road of the grasslands was widely known in the Western world as "Ser or Seres." The Silk Road already existed in the deserts also occupied by the Yuezhi(月氏) and the Xiongnu(匈奴) before history period. And Beijing(北京) had already formed an international trade market in the 9th century BC (Béguin & Morel, 1996/1999). Beijing was originally called BukPyung(北平) and was the territory of GiJa Joseon in the 11th century BC (Régis, 1735/2018). This means that Beijing belonged to Gojoseon for more than a thousand years free from Chinese interference (Butin, 1982/2019). The Seres, a silk-producing and trading group that appears in ancient Western literature, is closely associated with Gojoseon. Recent research has shown that Seres was Xiongnu-based Silla as part of Gojoseon (ancient Korea) based on genealogical, geographical, and etymological evidence (Kim & Na, 2023).

The following is a summary of the knowledge of Seres in the time of Herodotos (Cheong, 2001): The orientalist Henry Yule (1820-1889) translated the following: "The region inhabited by the Seres people is a vast and densely populated area, bounded to the east by a great sea and to the west by the borders of Imaus and Bactria." The inhabitants were enlightened people with a mild and gentle disposition, so they avoided conflicts with neighboring countries and were reluctant to associate with close friends. However, they were not stingy in selling products such as silk fabrics, raw silk, furs, and high-quality iron.

One of the two views on the identity of Seres was that 'Seres' was told to mean ancient China, Jina, or Qin(秦), but this may not be the case (Malinowski et al., 2012). In the West, Jina was called 'Thinai' in Greek, 'Chin' in Persian, and 'Cina' in Sanskrit (Franke, 1962/1977), and these names are completely different from 'Seres'. Qin in China was not the Far East to Westerners (Malinowski et al., 2012). There are opinions also that 'Seres' means 'silk expert weavers in Qin Han period' (Franke, 1962/1977; Selbitschka, 2018). But because 'Serica' means the 'vast' land where they lived (Malinowski et al., 2012; Sarianidi, 1985/2016), 'Seres' meant 'Far East' peoples. 'Serica' is a Greek-Roman term for the Far East where the Seres people live, so it can be distinguished from ancient China, suggesting that Seres had a culture similar to that of the Xiongnu.

Seres was thought to be the Yuezhi around Dunhuang(敦煌) and Gansu(甘肅) (Lee, 2021; Odani, 2008). The etymology of 'Seres' can be found in the vocabulary of the Northern peoples who were the intermediaries of silk. Silk is called 'Sirghek' in Mongolian, the yellow color of silk fiber is called 'Sira', light yellow is called 'Siragha', and the color of straw is called 'Shirgek'(Nagasawa, 1983/1990), that these words were transmitted to the west by the Xiongnu or Da Wolji/Yuezhi(月氏, 月支). The large-scale export of silk woven by Seres created an awareness of the country at the eastern end of Asia (Nagasawa, 1983/1990).

'Serica' is a Greek-Roman term for the Far East where the Seres people live, so it can be distinguished from ancient China. Seres was widely and thickly distributed in northern China in the 7th century BC (Voevoda et al., 1998). On the map of the 7th century BC, Seres was distributed horizontally from Xinjiang(新疆) to Bukpyung. The History of 'Shiji(史記)' said that their customs were close to those of the Xiongnu from WuSon(烏孫) to Parthia. If the Xiongnu messenger had Xiongnu king(單于)'s letter, the countries on the way would prepare and deliver food and never interfere (Nagasawa, 1983/1990). This suggests that the Yuezhi of the Xiongnu lineage had occupied the Silk Road from the beginning, and that the Seres region occupied a much larger territory than the Chinese Qin.

The name of country follows the name of the name of the people in ancient times, and it was often used as a place name. After examining the sound of Seres of silk people, the 'Seres' were the Silla of Gojoseon (Kim &

Na, 2023). According to phonological research, the ancient sound value of 'Silla' is 'Sere', and its meaning is 'to spread light to the world' (Choi, 2013). Ancient Silla was called “Sira” and “Saro” and was recorded in several characters with the same pronunciation: Sira(斯羅), Saro(斯盧), Sara(斯羅), Seona(徐那), Seora(徐羅), Seoya(徐耶), Seobeol(徐我), Seoraebeol(徐羅我), Shinro(新盧), Saryak(四樂), Seolrak(說樂), Shinryang(新良), Jinryang(眞良), Gyerim(鷄林), and Gillyim(吉林) and Silla(新羅). They followed phonetic characters, and all pronunciations are similar to 'Seres'. The Wei(魏) called Silla “Sino,” and the Song Dynasty called the Silla Dynasty “Silla or Sara”. Recent studies have shown that the Silla people lived in the present-day Shandong and Liaodong (Lee, 2019). The Silla people had lived in the land of Nakrang during the Han period. They called the kings of the Silla as the leaders of the Shandong and Liaodong provinces also during the Tang period(Shim, 2021). These were called Yeonghae(瀛海), Yeonju(言州), Jecheong(制昌), Gyerim(鷄林), and Gyeongsin(慶信)(Lee, 2021), which suggests that Silla was located in Serica, not only in the Korean Peninsula but also in current Shandong and Liaodong.

The Han Dynasty took over the Hexi Corridor, which was the Silk Road, and collected taxes for decades, but it was the northern peoples whose trade was the basis of their livelihood that continued to revitalize the Silk Road (Komatsu et al., 2000/2015). Therefore, the Silk Road can be said to have been operated by the northern peoples of Goguryeo, Xiongnu, Silla, and Seres, starting from the Gojoseon period, which encouraged trade. Seres was called Yuezhi (Odani, 2008), and Yuezhi/Uzhi(目支) was the capital of Makhan (one of Samkhan). In addition, the ‘HuHanSu Makhan(後漢書 馬韓傳)’ records that the people of Makhan already raised silkworms and knew how to weave, suggesting that sericulture also existed in the Makhan region.

Herodotus mentioned in his history that the Seres people had red hair and blue eyes. However, since the Sam Khans(三韓) ruled by Dangun of Gojoseon were said to have been composed of 5 families and 64 tribes, the red-haired and blue-eyed Yuezhi Seres belonged to the Scythian lineage and also belonged to Makhan among the SamKhans (Oh, 2022).

Dangun ruled Gojoseon by dividing it into the Three KHans, of which there were three Saek(色族 索族) tribes: Baekbu(白部), Jeokbu(赤部), Rambu(藍部), and Hwangbu(黃部), and the Hwangbu people were said to have blue-black eyes, according to Dangun Segi(檀君世紀). The Jiang/Di(羌氏) tribe of Gansu and the Shanxi(山西) Province had the same culture and religion and were close to each other (Hwang, 2012). The Yuezhi of Jilin Mountain(祁連山/天山) was part of Makhan, so they interacted with the Dong-Yi of Byeonkhan and Jinkhan, and followed Dangun's ruling ideology and religious ideas.

The Mongol Noin-Ula carpet(1st century BC) shows the trade scenes and the colorful dresses of Goguryeo Okdori and Yuezhi Tochara murals are similar in style. The Deng-Ji Yuezhi on the YangJikGong drawings (梁職貢圖) and the Uyghur princes can be found as oriental(Na, et al, 2023), and the recent studies revealed the Scythians originated from Arzhan, the East-Mongol (Kwon, 2022).



Figure 2. Scythia Originated in East Mongolia Shows the Similar Culture with Xiongnu

(a) trade scene of Mongol Noin-Ula carpet (BC 120), (b) Okdo-ri Mural of Goguryeo (4th century) (Ko, 2011), (c) Tocharians of Kizil murals of red hair (7th century), (d) diplomat from Deng-Ji country of middle Asia (6th century) (Na, et al., 2023)

Main exporter of Geum, furs and Good-Quality Iron

Geum(錦) artifacts are the most complex textiles that require advanced weaving techniques, and therefore they also imply the development of other textiles. The Geum 'O-Seong-Chul-Dong-Bang(五星出東方 利中國 南羌四夷 服單于 降與天 無極)' is a protective arm guard excavated from the M8 tomb at the Niya site in Xinjiang Autonomous Region. The meaning of "Five Stars Rise in the East in a line" is that this cosmic phenomenon benefits all lands including center. This phrase originated from the founding philosophy of ancient Korea, 'Hongik Ingan(弘益人間)', which means 'benefiting all people'. Since there was no country called 'Center Country 中國' at the time, it refers to the center region. 'The Center Country' also had referred to India in Buddhism period (Seo, 2020). Central Asia, where this Geum relic was excavated, was ruled by the Yuezhi, Seres, or Xiongnu, and when Modu SeonU (Xiongnu's King) ascended the throne (3rd century BC), DongHo(東胡, Buyeo) & Yuezhi was powerful and bordered the Xiongnu, as recorded in Shiji(史記) of Sima Qian (Hwang, 2012). From an early stage of history, the kings of the Yuezhi and Xiongnu interfered the Qin and Han dynasties (Sarianidi, 2016).

Including five stars, two birds, two heavenly animals, old script characters(篆書), and cloud patterns show the high level of weaving technology, as well as the ancient Xiongnu's beliefs. The shape of the clouds expresses a sense of rhythm with wave patterns. These patterns can also be found in the mural paintings of Deokheung-ri and Okdo-ri in Goguryeo dynasty of ancient Korea, which represent the unique Zen(禪) philosophy in accordance with the cosmic order that was popular from the Gojoseon. 'Ride the wind and ride the clouds, ascend to the heavens and descend to the earth(乘風御雲 升天入地- 太白真訓)' was expressed in the form of the heavenly spiritual energy of cloud flow the wind.

The Geum objects found in Louran and Niya in Central Asia have a lot of animal patterns, which are the typical patterns of the North peoples. The pattern of a beast with an open mouth is a specific pattern of the northern peoples living with animals and believed in the idea of the heavenly grandson(天孫). The birds, hoofed animals, and ferocious animals depicted on numerous Gold objects are typical Scythian animal motifs (Perevodchikova, 1999), but the Chinese claim that they were created by the Han people. However, according to the records of the Han Dynasty, the cloud symbol in the form of a heard of animals and nomadic tent was considered a sign of an attack by the northern Buk-Yi (北夷), and the cloud symbol in the form of sail flag and ship was considered a sign of an attack by the southern Nam-Yi (南夷). 『Shiji CheonGwanSeo 史記 天官書』 (Butin, 2019) Therefore, the pattern of these Geum have not been created by the Han people who feared wild animals. It is also clear that the animal patterns with Asian characters were created by the Xiongnu, specially Silla and Goguryeo peoples, who used both ideographic and phonetic characters. Moreover, the site where the Geum was excavated was not the land of the centered Han at the time. Note that it was only after the Qing(清) Dynasty that the north was finally incorporated.

Gojoseon possessed outstanding technology not only in silk production but also in fur production and high-quality iron (Lee & Na, 2024). According to 'Guanzi(管子)', beautifully patterned fur from Cheok San(斥山), was a specialty of BalJoseon (Park, 2011). High-quality furs were produced in Mt. Cheok San, located next to Mt. Mundeung in present-day Shandong, and these were important commodities in east-west trade (Lee, 2021).

Gojoseon was very good at producing both furs and wool (Park, 2018).

In addition, the Dong-Yi people had excellent iron processing technology, and iron was produced in the land of JinKhan, and records in the 'HuHanSu Dong-Yi (後漢書 東夷傳)' state that Ye, Wae, and Makhhan purchased iron from Jinkhan (Oh & Kim, 2018). The iron technology of Gojoseon was particularly developed in the Jinkhan/Byeonkhan, and they also used iron as currency. The heyday of Gojoseon, which possessed the precise bronze technology of the DaNuSeMunKyung mirror, and high-quality iron can be seen as the 6th centuries BC (Lee, 2012), which is the same period when Geum was exported to Persia, Rome, and North Africa (Miyaji & Motamedi, 1979).

The peak period of Gojoseon with advanced astronomy science is considered to be the 9~4th centuries BC (Lee, 2012), when Geum silk and furs were exported with high-quality iron to Persia, Rome, and North Africa. Ancient Roman literature ranked the iron of Seres as the best in the world, and the iron of Parthia as second (Plinius, 2021). This shows that the iron production technology of Seres was at the highest level at the time.

According to the 'Samgukji Wei Su Dong-Yi (三國志 魏書 東夷傳)', the ancient Silla 'Saro' is recorded as having developed based on iron resources (Okauchi, 2008/2016).

When Modu SeonU (201 BC) of the Xiongnu was enthroned, Yuezhi and Dongho were powerful and between the two the Xiongnu located, according to the records of the 'Shiji (史記)' (Hwang, 2012). The Hexi Corridor belonged to the right-side king (右賢王, west side) of Xiongnu, and the land of the left-side king (左賢王, east side) near to Buyeo Gojoseon. Silla was deeply related to the Xiongnu, and according to the 'Shānhǎi Jīng (山海經)', there were similarities in many aspects, including the cultures of gold, bronze cauldrons, stone tomb, wooden coffins, and linguistics (Lee, 2021). Xiongnu and Gojoseon used a common language and maintained a strong bond for thousands of years (Robbeets et al., 2021). In this context, Gojoseon must have exported high-quality iron and furs to the West via the Silk Road, along with BingGeum, and international trade led to economic prosperity throughout society. It said that Buyeo is very wealthy and has never been defeated by anyone since the time of its ancestors (三國志 東夷傳 扶餘). And Khan (韓) and Ye (濊 Buyeo) became strong again during the period of Huan king and Ying king of later Han (桓靈之末 韓濊疆盛: 三國志 烏丸鮮卑 東夷). The economic prosperity of Gojoseon allies can be seen as the result of its unique cultural system of the same religious society, which was formed based on advanced technology and international trade, beyond simply material wealth.

CONCLUSION

Compelling counter-insist to the established Sinocentric perspective on the origins and spread of silk production, we present that ancient Korea, specifically Gojoseon, played a far more significant role than previously acknowledged. Challenges the conventional understanding by providing substantial evidence that Gojoseon, the allied Sam Khan was not merely a peripheral player but a pivotal force in the early stages of silk production and its subsequent dissemination across Eurasia.

As for the Gojoseon's advanced silk-weaving culture, particularly its production of high-quality BingGeum brocade using colorful wild silkworms, they showed the worship religion to the jade silkworms from the Neolithic period. The sophisticated weaving skill of Geum brocade, the special complex looms employed by Gojoseon allies, and the animal style of Scythian of Shamanism are indicative of a highly developed textile industry and trade system that extended beyond the Sinocentric perspectives on silk production.

Furthermore, we reinterpreted the Seres, a group frequently mentioned in ancient Western texts as a major source of silk. Challenging the conventional views of the Seres with China or silk weaver, we convincingly places them within a ally of Gojoseon, specifically identifying them as the Xiongnu Silla. This identification is supported by geographical proximity, shared cultural traits, and linguistic evidence. The Seres' extensive trade along the Silk Road is seen as a direct extension of Gojoseon's economic influence and their religious power

of Dangun.

Beyond its contribution to 'sil-kurry' fiber production, Gojoseon's multifaceted role as a major exporter of luxury goods, including Geum(brocade), patterned furs, and high-quality iron. This underscores the Far east Dong-Yi's high technology and Seres Yuezhi's advanced trade skill, and their relationship as a crucial node in the intricate network that characterized ancient Eurasia.

In conclusion, we offers a comprehensive understanding of the historical contents surrounding the origins and spread of silk. By highlighting the significant contributions of Gojoseon allies, it not only expands the understanding of ancient Northeast Asian silk history but also provides a much-needed corrective to a long-standing Sinocentric bias, enriching our knowledge of the intercultural exchange.

Acknowledgement: This work was supported by National Research Fund: RS2024-00333465

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