

Granulation and the Tree of Life: How Goldsmithing Techniques and Religious Beliefs Connect the Far East with the West*

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Introduction

The tree of life is a myth that exists in a huge variety of regions, serving as a symbol for the annual decline in nature and the resurrection of vegetation in spring. It symbolizes the cycles of nature, rebirth and therefore life itself. Also, it is thought of as an *axis mundi* that connects this world with the underworld and the sky.¹

Crowns depicting trees and antlers are present in the archaeological record of both Korea and Japan. A lot of research has been carried out on crowns and jewellery in Japan, Korea and other regions of Eurasia, whereas only very few attempts have been made to do a comparative study of jewellery encompassing finds from the whole of Eurasia. Sarah Laursen's recently published study about Murong Xianbei 慕容鮮卑 head ornaments² dealt only very briefly with finds from Korea and Japan.

Especially studies that include not only a detailed morphological and iconographical analysis but also an analysis of production techniques have been rare, even though such an analysis provides an excellent tool to show interregional relations and exchange. Specifically, for regions with a scarcity of finds, or when a time gap exists between comparable finds from different regions, the analysis of production techniques is a possibility to close these gaps.

With a strong focus on crowns, earrings and other jewellery from Kofun 古墳 period Japan and from the Three Kingdoms (Samguk 三國) period on the Korean peninsula,³ this paper examines the distribution of such objects to

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1 James 1966, 245-246.

2 Laursen 2011.

3 Kofun period: 250–600 CE, Three Kingdoms period: 300–668 CE.

determine what links existed between Europe, Central and East Asia. A comparison of iconographical similarities will show that certain motifs like the tree of life – together with birds and deer – can be found throughout Eurasia. The analysis of production techniques will elucidate further the complex interaction and exchange network in Eurasia.

The Tree of life in Eurasia



Fig. 1 Seventeenth century depiction of a Tungusic Shaman⁴

In Eurasia, the image of the tree of life being flanked by two animals exists from the Near East to East Asia. The animals flanking the tree vary between goats, ibexes, deer and horses. In Siberia and Central Asia, the tree of life is a common myth shared by various cultures from prehistoric times to the present. In the branches of the tree reside the souls of the deceased in form of birds, waiting to be reborn.⁵ One characteristic of the Siberian worship is the close connection to the image of the antlers of deer which follow a similar cycle as the tree: being grown in spring and lost in autumn. In North Asian petroglyphs, they are often depicted as being overly large and thus resembling much more a tree with branches than real antlers.⁶ As early as in the eighteenth and nineteenth century, ethnologists and travellers observed crown-like headdresses of shamans from

4 Source: Witsen 1785, 663.

5 Brentjes and Vasilievsky 1989, 38-40.

6 Martynov 1988, 13-16.

the Tungusic people, the Yeniseian people and the Buryats which had antlers (sometimes made of iron) attached to them (Fig. 1). Such crowns were also found in graves and confirm a long tradition of these kinds of headdresses, just as engravings on mirrors do, depicting humans with various headdresses, some of which resemble a tree or antlers.⁷ Drums of shamans from the Altai region often show the tree of life as well.⁸ Of particular interest are the myths about this tree in regions that are close to the Korean peninsula. Depictions of the tree of life by the Nanai people from the middle Amur region show it flanked by horses, with birds perched on its branches.⁹

Tree-shaped crowns from the Korean peninsula

Crowns depicting trees and antlers appeared on the Korean peninsula during the Three Kingdoms period. They can be roughly divided into three groups: wing-shaped crown ornaments (Kor. *joik hyöng kwansik* 鳥翼形冠飾), tree-shaped crowns with a slim headband (Kor. *taegwan* 帶冠) and caps (Kor. *mogwan* 帽冠). Most of the tree-shaped crowns from the Korean peninsula have been found in the south, the former kingdoms of Paekche 百濟, Silla 新羅 and Kaya 伽耶.¹⁰ No tree-shaped crowns are known from Koguryö 高句麗 at this time.¹¹ The crowns are made of sheet metal (gold, gilt bronze or copper) and consist of a slim headband to which vertical tree-shaped projections (Kor. *suji hyöng ipsik* 樹枝形立飾) in the shape of the Chinese character 山 are attached. They are decorated with round or leaf-shaped spangles which are attached to both the headband and the projections by a thin twisted wire. Examples from Kaya like the crown from Pokch'öngdong 福泉洞 tomb 22 and early examples from Silla are simpler and have three upright projections in the shape of a tree with branches.¹²

7 Harva 1938, 514-518; Brentjes and Vasilevsky 1989, 116-117.

8 Harva 1938, 70 and 530-531.

9 Martynov 1988, 25-26; Toporov 1991, 330-336.

10 Koguryö: 37 BCE–668 CE, Paekche: 18 BCE–660 CE, Silla: 57 BCE–935 CE, Kaya: 42–562 CE. According to the *Samguk Sagi* 三國史記, the founding of these kingdoms dates back to the first century BCE (first century CE for Kaya). While that may be true for Koguryö, archaeologically the existence of the other kingdoms cannot be proven until much later. It is furthermore still debated whether Kaya reached statehood or not.

11 Joo 2013a, 260.

12 Ham 2013, 45-53; Azuma 1997, 455-461; Saotome 1982, 4-9.



Fig. 2 Crown from Kyodong¹³

Later, Silla crowns became more heavily ornamented with curved beads made jade called *kogok* 曲玉 (*magatama* 勾玉 in Japanese) and pendants, which closely resemble the earrings of the same period. The number of branches increases with time. The tree-shaped ornament of the crown from Kyodong 校洞 (Fig. 2) only has one pair of branches while later crowns have three or four pairs.

With the number of branches the number of vertical projections increases as well. Two antler-shaped projections (Kor. *nokkak hyöng ipsik* 鹿角形立飾) are further added to the three trees at the rear of both sides of the crowns.¹⁴

The crown from the Söbongch'ong 瑞鳳塚 tomb (Fig. 3) is a unique example for the earlier later style. The tree-shaped ornaments still have only three branches and it is decorated with spangles and all *kogok* over. Additional to all the ornamentation, it features two thin straps of sheet gold onto which birds are fastened on the point of their crossing. The crown from the Kümnyöngch'ong 金鈴塚 tomb (Fig. 4) is an example of the latter style. It has four branches but surprisingly lacks the heavy ornamentation with *kogok* that is characteristic for the late Silla gold crowns.

Ham notes that while the ornamentation of the crowns from Silla increases the purity of the gold decreases with time until they are only made of copper during the last phase.¹⁵

13 Source: Kyöngju National Museum collection database.

14 Lee 2013, 45-53; Azuma 1997, 455-461.

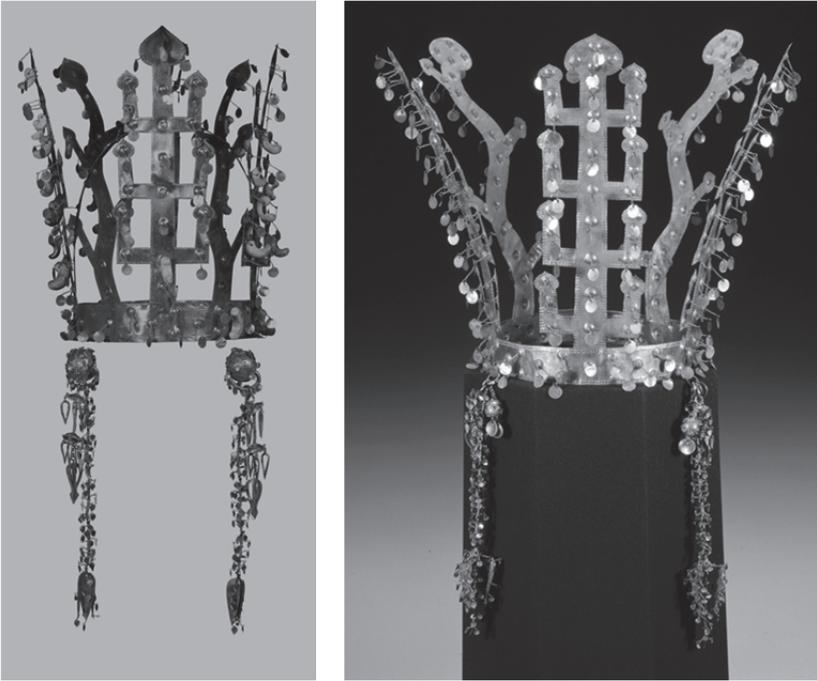


Fig. 3, 4 Crowns from the Sobŏngch'ong tomb (left) resp. Kŏmnyŏngch'ong tomb (right)¹⁶

The Japanese archaeologist Hamada Kōsaku 濱田耕作 (1881–1938) and the German archaeologist Carl Philipp Hentze (1883–1975) were the first to point out that crowns from the Three Kingdoms period closely resemble other finds from sites throughout Eurasia.¹⁷ Hamada especially referred to a head ornament from the Alexandropol kurgan in Ukraine (Fig. 5). The ornament is made of silver and seems to have been attached to some kind of cap. Its shape suggests it depicts a tree or a branch. Circular spangles are attached at the end of the branches with a piece of wire.¹⁸ Hentze pointed out the close similarity to a small bronze from the collection of the Ostasiatisches Museum Köln (Fig. 6).¹⁹ Unfortunately, it is of unknown provenance. It depicts a man holding a box.

15 Ham 2013, 47-51.

16 Source: National Museum of Korea collection database.

17 Hamada 1932, 28-30; Hentze 1933, 157-162.

18 Hamada 1932, 29.

19 Hentze 1933, 158. According to the museum it was acquired in China, is thought to be from Siberia and dates to the Tang dynasty. Hentze dates it to the Han period based on the style of the clothing.

He wears a cap from which two branches or antlers are projecting and which shows a striking resemblance to the crowns known from the Korean peninsula. Edward Kidder underlined the similarity of Japanese crowns to Scythian finds from various locations from all over Eurasia as well.²⁰ Since then Korean and Western archaeologists and art historians have pointed out similarities of these crowns with finds from other regions in Eurasia on various occasions.²¹

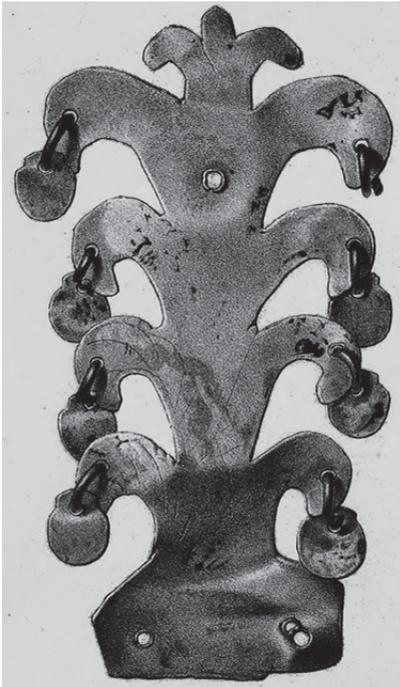


Fig. 5 (left) Head ornament from the Alexandropol kurgan²²

Fig. 6 (right) Depiction of a shaman dancer (metal fitting), China²³

The close connection to finds from Northeast Asia has fuelled theories that there is a connection with shaman crowns and the tree of life. It has been noted by several Korean archaeologists that the basic structure of Scythian kurgans

20 Kidder 1964, 98-109.

21 Nelson 1993, 251-254; Nelson 2013, 136.

22 Source: Imperatorskaya arkhelogicheskaya komissiya, 1866, plate 7.

23 Source: Museum für Ostasiatische Kunst Köln, C 27,5; photo: © Rheinisches Bildarchiv, rba_704606.

found in Kazakhstan is very similar to the burial mounds of Silla. Both consist of a wooden chamber that is covered with earth and a layer of stones.²⁴ The main difference is that the grave chamber of the Scythian kurgans is underground while the grave chamber of the Silla burial mounds was built above ground.²⁵ Additional to the close resemblance of the burial mounds, golden cap ornaments depicting the tree of life have been found for example in Pazyryk and Issyk Kul dating to the fifth century BCE. While the caps from Pazyryk and Issyk show the tree of life, they are still quite different from the crowns found in Korea. A bronze from the Kulaiskaya culture, which is dated sixth to fifth century BCE, shows a much closer resemblance to the crowns from Silla. The bronze statue is 15.9 cm high, has a long oval face and wears a headdress. The crown consists of small band, like a diadem, which sits on the forehead, and three vertical branches.²⁶ It is thus remarkably similar to crowns from Kaya, Silla and Kofun period Japan.

But even considering the similarities of both jewellery and burial mounds, it is hard to believe that there may have been any direct connection or even migration between Kazakhstan and Korea. The time gap of almost a thousand years remains unexplained.

The Japanese archaeologist Hayashi argued that new finds from the eastern border of Kazakhstan, which were discovered in 2009, might help to reduce the distance between comparable finds from Central and East Asia. At the Arzhan-Buguzun site (near Kosh-Agach) horse gear was unearthed from a stone covered burial mound located within an earthwork. The horse gear consists of S-shaped cheek pieces and decorative metal fitting for straps. These were ornamented with granulation and stone inlay, both techniques that were widespread in Eurasia from the fourth to the sixth century CE. He concludes that future finds from Mongolia might contribute to close the distance even further.²⁷

Still the distance between Korea/Japan and Central Eurasia remains too large to be ignored. Many archaeologists and art historians have noted how both the iconography and the production techniques of the gold crown from Tillya Tepe in Afghanistan, which has been dated to the first century CE, are similar to the crowns found on the Korean peninsula.²⁸ The crown from Tillya

24 Lee and Leidy 2013, 7-8; Rudenko 1951, 7-12.

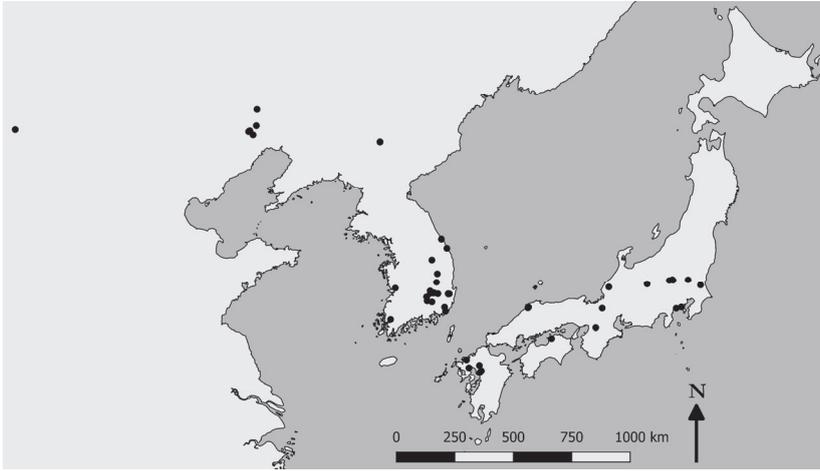
25 Rudenko 1951, 7-12.

26 Molodin 1992, 118-120; Lee 2010, 113.

27 Hayashi 2013, 415-430.

28 Pak 1988, 44-47; Joo 2013, 257.

Tepe is made of gold sheet and shows stylized trees. On four of these trees birds are sitting on the branches.²⁹ Pak goes as far as to state that the origin of Silla metalwork may lie in Tillya Tepe as the gold smithing techniques seem to be “in the same tradition”.³⁰ Considering the time gap as well as the great distance this is quite unlikely despite the remarkable similarity. Insook Lee also mentions the similarity of production techniques: thin sheet gold, round gold spangles attached with wire and a thin headband.³¹



Map 1 Tree-shaped crowns in East Asia

Interestingly, it is no crown from Silla which shows the most remarkable resemblance to the crown from Tillya Tepe, but one from Paekche. The crown excavated from Sinch'on-ri 新村里 tomb 9 (Fig. 7), a square mound with several jar burials³², consists of an inner cap decorated with floral motifs and an outer crown with a small band to which three tree-shaped upright ornaments are attached. The upper edge of the band and the trees are decorated with round spangles.³³ A similar crown has been found in Ipch'om-ni 笠店里 tomb 1, but only fragments have been preserved.³⁴

29 Sarianidi 1989, 116-119.

30 Pak 1988, 46.

31 Lee 2013, 115-132.

32 NRICH 2001, 43-48.

33 Kungnip Kongju pangmulgwan 2011, 96-97, 107, 182-183. Anazawa and Manome 1973, 19-20.

34 Kang 2011, 58-59; Munhwajae yŏnguso 1989, 26-27, 44-45.



Fig. 7 Crown from Sinchon-ri tomb 9³⁵

But not only the crown from Tillya Tepe has linked the Korean crowns with West Asia. A cap ornament from Afghanistan, which is dated to the first to the second century CE, shows a small tree made from coral which is decorated with round golden spangles. It is fastened to the top of the cap. The spangles are made of sheet gold, and the way in which they are attached to the coral by a wire closely resembles the crown from Tillya Tepe. The whole design, moreover, closely resembles a tree or antlers and has thus been interpreted as showing the tree of life and been linked to the crown from Novoherkassk, the cap ornament from the Kobiakovo kurgan, and the gold crowns from Silla.³⁶

The tree-shaped crowns from the Korean peninsula might have been influenced by the tree-shaped head ornaments of the Murong Xianbei. The image of the tree of life might have entered the Korean peninsula and Kofun period Japan via Northeast China, where tree-shaped head ornaments were common during the third and fourth century CE. The Murong Xianbei head ornaments are morphologically quite different from the crowns on the Korean peninsula and Kofun period Japan but share the image of a tree with spangles forming the

35 Source: National Museum of Korea collection database.

36 Schiltz 2003, 152-153.

leaves.³⁷ The head ornaments (Chin. *buyao* 步搖) are made of a central open-work plate onto which wire is fastened that forms the tree and its branches. Leaf-shaped spangles are fastened to the branches which are hammered to the central wire that forms the tree trunk. These head ornaments closely resemble small trees made of wire that were found in Tillya Tepe and which are thought to be parts of head ornaments as well, and two head ornaments from the Xihezi 西河子 hoard which show a deer and a bull, both with antlers that are decorated with leaf-shaped spangles.³⁸ The deer-shaped ornament is decorated with granulation and inlay on both the head and the antlers, while the bull has granulation and inlay only on the head and not on the antlers. The antlers of the bull are detachable, look more like a tree than antlers (certainly not like horns), and resemble the Xianbei head ornaments quite closely. The antlers of both of these ornaments might thus mirror the Siberian tradition of linking the antlers with the tree of life.

Tree-shaped crowns and crowns with floral ornaments from the Japanese islands

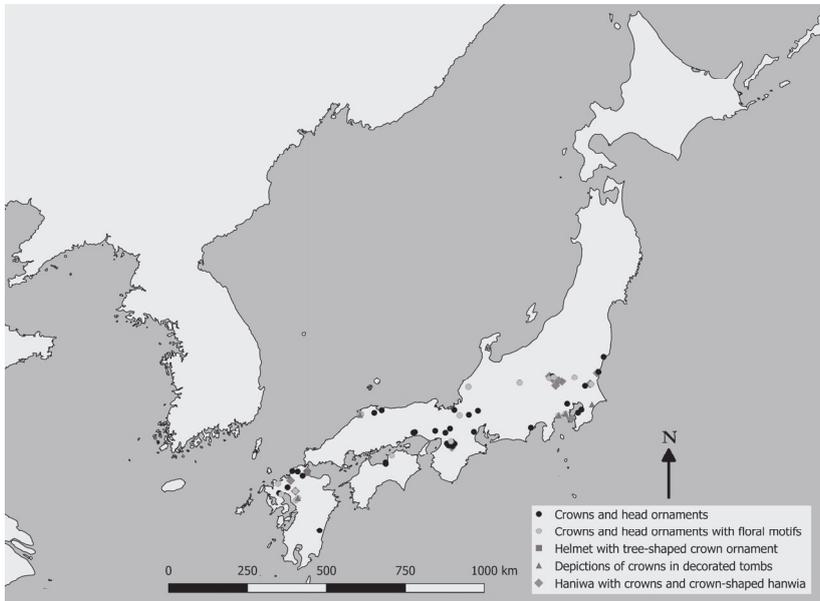
On the Japanese islands, there is no evidence for any tree cult during the Yayoi 弥生 period. Images of trees appear in the early Kofun period and only become prominent during the middle and late Kofun period. The depiction of trees during the Kofun period is almost solely limited to crowns. There are approximately fifty Kofun period crowns known from Japan, and about half of these are either tree-shaped or have floral motifs. This raises not only the question what function the tree had in Kofun period religion, but more importantly the question how the image of the tree reached the Japanese islands. The worship of the cosmic tree might have reached Kofun period Japan from North-Asian nomadic tribes via the Korean peninsula and is inextricably linked with immigrants who brought with them prestige goods like crowns, earrings, other jewellery, weapons, armour, production techniques and other religious beliefs which had their origin elsewhere in Eurasia.

Kofun period crowns can be divided into roughly three different types: crowns with a slim headband (Jap. *kyōtai shiki* 狭帶式), crowns with a wide headband (Jap. *hiro'obi shiki* 広帶式) and caps (Jap. *kanbō* 冠帽). Those types

37 Joo 2013a, 269; Wang 2004, 6-7.

38 Laursen 2011, 74-77; Pak 1989, 50-51; Lu and Chen 1984, 81-83, 29; Schiltz 2008, 277.

can be further subdivided. The crowns with the wide headband can either be decorated with openwork (geometrical or floral motifs) or with a hexagon pattern and have a bowtie-shaped ornament in the centre. Those with a slim headband can have either several ornamental projections or just one central projection.³⁹ Crowns are mainly found in three regions: Kansai, Kantō and Northern Kyūshū and the crowns depicting trees are more or less equally spread among these three regions.



Map 2 Crowns in Japan

Most of the tree-shaped crowns belong to the slim type, but there are wide crowns with tree and floral ornaments as well. In contrast to the crowns from Korea the ones on the Japanese islands are almost exclusively made of gilt bronze, but the production techniques closely resemble the techniques from the Korean peninsula. While some of the crowns are thought to be imports, others are thought to have been made in Japan. Especially the crowns with the wide headband are said to be locally made, because similar crowns have not yet been found in Korea or elsewhere in East Asia.⁴⁰

39 Ōsaka furitsu Chikatsu Asuka hakubutsukan 2003, 75-81; Saotome 1982, 4-5.

40 Ōsaka furitsu Chikatsu Asuka hakubutsukan 2003, 80-81.

Examples of the wide type are the gilt bronze crown from the Fujinoki kofun 藤ノ木古墳 which shows a tree with birds sitting in its branches and boats floating above, and the crown from the Sanmai-zuka kofun 三味塚古墳 which shows several small trees flanked by horses. The gilt-bronze crown from the Sannō-futagoyama kofun 山王双子山古墳, also known as Kinkan-zuka 金冠塚, belongs to the slim type and shows a stylized tree. It closely resembles the crowns from Silla.

The crown from the Fujinoki kofun (Fig. 8) is the only one where the tree is clearly recognizably as such and is not as stylized as the tree-like projections of the other Korean and Japanese crowns. It is a crown of the wide headband type, but the headband is not decorated with openwork or a hexagon pattern as is usual for this type. In the centre of the headband is a bowtie-shaped ornament. The height of the headband is not uniform but higher in two places (Jap. *hiro'obi futayama* (or *nizan*) *shiki* 広帯二山式). It is decorated with leaf-shaped and bird-shaped spangles. The curvy design of the branches is similar to the design of the crown from Sinch'on-ri. Just like the crown from Tillya Tepe, birds are perched on the branches of the trees. Some of the birds are part of the crown, others are attached as spangles. An unusual element are the boats on which birds are sitting and that seem to float on top of the tree. The image of a bird riding a boat can be observed in Kofun period decorated tombs (sometimes instead of a bird a horse is riding the boat), while the image of a boat on top of a tree or a floral ornament (alternatively the ornament which is referred to as fern-shaped could also be interpreted as a wave) is known from crowns in both Korea and Japan. The images of both the bird and the boat are thought to be connected to the afterlife, the boat being the vessel to transport the soul while both horse and birds act as guides.

As already explained above the birds on top of the tree of life are thought to be souls in Siberia and thus connected to the afterlife as well. The depictions of the tree of life with birds in its branches by the Nanai people are particularly similar. It can thus be assumed that the birds on this crown might symbolize souls as well. The boat can most surely be regarded as an addition to this legend by the Wa 倭 people.

It also appears not only in decorated tombs but also in form of boat-shaped *haniwa* 埴輪. For the Wa people the next world lay beyond the sea only to be reached by ship. Both the birds and the horse guard and escort the soul of the

deceased on its way to the next world.⁴¹ The strong connection between the horse, boats and the after lifer might be explained by the fact that religious beliefs, but also innovation and new species like the horse, all arrived in Kofun period Japan by boat from beyond the sea.



Fig. 8 Crown from the Fujinoki kofun⁴²

The crown from the Fujinoki kofun is also unique among the crowns from the Korean peninsula and the Japanese islands. The Japanese archaeologist Monta Sei'ichi 門田誠一 suggested that the image of the tree of life as we can see it on the Japanese and Korean crowns actually has no connection to similar depictions from central Asia but is connected to a Chinese legend about the mythical Fusang tree 扶桑 that is said to have existed on an island in the east of China. According to Monta, the owner of the crown from the Fujinoki kofun tried to show that he was a king from this mythical island by wearing it. He states that the legend was transmitted through Koguryō and the Korean peninsula to Japan.⁴³

41 Shira'ishi 2004, 331-332; Chiga 2004, 340-341.

42 Redrawn after Nara Kenritsu Kashihara Kōkogaku Kenkyūjo 1995, plate 74.

43 Monta 1991, 19-20.

This theory has one very serious weak point though. While depictions of this legend might be seen in Koguryō murals, we have no evidence that it was known in the southern part of Korea and Japan. In fact, the two trees onto which bird-shaped spangles are fastened resemble much more the tree of life as it is depicted in the images of the Nanai people who live in Manchuria along the Amur River, and thus hint at a transmission from Northeast-Asia. The depictions of the Nanai show the tree of life with birds perched and its branches flanked by two animals.⁴⁴

The crown from the Sannō-futagoyama kofun is the one that resembles the crowns from Silla most closely. It is shaped in the fashion of the later Silla crowns with a slim headband and five tree-shaped vertical projections which have four branches each. It is decorated all over with round spangles. In direct comparison with the Silla crowns it becomes apparent that there are major differences as well. The crown is made of gilt bronze and not gold. It also lacks the antler-shaped projections that are generally added to Silla crowns of this shape. *Magatama* and the earring-like pendants are also missing. Until today it remains the only crown of this kind that has been found in Japan thus suggesting it might be an import from the Korean peninsula.

Another unique crown has been excavated from the Sanmai-zuka kofun (Ibaraki). Even though its basic shape is common among Kofun period crowns, its ornamentation is not. It is the only known crown from both the Korean peninsula and the Japanese islands that shows horses. It is a crown with a wide headband of the *hiro'obi futayama* variety. The headband is decorated with openwork and a bowtie-shaped ornament in the centre. On top of the wide headband there are eight horses which are all facing towards the centre. Between the horses are seven tree-shaped projections. The tree in the centre is thus flanked by two horses. The tree motif is also incorporated into the openwork of the wide headband. The headband, the bowtie ornament, and the ornaments on top are all decorated with round spangles.⁴⁵

This image is reminiscent of the Sarmatian caps decorated with a tree of life flanked by two stags like the cap from Kobiakovo kurgan no. 10 and Ust-Labinskaya kurgan no. 46.⁴⁶ The most striking resemblance becomes evident when compared to the Sarmatian crown form the Khoklach kurgan in Novo-

44 Toporov 2008, 330-331; Ivanov 1954, 228-283.

45 Ibaraki-ken kyōiku iinkai 1960, 37-41; Ibaraki kenritsu rekishikan 2016, 7-8.

46 Guguyev 1992, 116-129. Zasetzkaya 2008, 33-37.

cherkassk (Russia). On top of a wide headband, which is decorated by various precious stones and the small bust of a woman, different animals (stags, ibexes and birds) and trees are fastened to the crown, all facing towards the centre. Between the animals stand trees with small leaf-shaped spangles. In the centre the two stags are flanking a tree.⁴⁷

Even though this crown is not as closely connected to the crowns from Kofun period Japan and the Korean peninsula as the crown from Tillya Tepe, the iconographical similarity is remarkable. This suggests that the crown from the Sanmai-zuka kofun is firmly rooted in the mainland Eurasian tradition of depicting the tree of life flanked by animals.

A deviation from the crowns just described is the visored helmet (Jap. *mabishi-tsuki kabuto* 眉庇付冑) excavated from Inadō 稲童 kofun no. 21. It is a vertical slit helmet of the Mongolian type dating to the early fifth century. To the top of the iron helmet a gilt bronze tree-shaped ornament is attached to the plume holder. The two branches consist of willow leaf-shaped parts which are decorated with round spangles. No comparable object has yet been found in either Korea or Japan.⁴⁸

Examples for tree-shaped head ornaments from *haniwa* and decorated tombs

A great variety of headdresses is also known from Kofun period funerary statues called (Jap.) *haniwa* 埴輪. The Japanese archaeologist Inemura Shigeru 稲村繁 identified more than fifty different types of headdresses.⁴⁹ Most of those seem to represent hats or caps while some might also be hairstyles. Crowns are also among those headdresses. Among these *haniwa* crowns the number of crowns depicting trees is quite small. One has been excavated from kofun 13 in Tachiyama-yama 立山山 (Fukuoka) and one has been found in Gunma. These two crowns closely resemble the Kaya crown from Kyōngsangnam-do.

Most easily identifiable as crowns are the headdresses of the *haniwa* from the Hotoda-hachiman kofun 保渡田八幡塚古墳 (Gunma), the Funayama 船山古墳 (Gunma), the Tamari-funazuka kofun 玉里船塚古墳 (Ibaraki) and the Tōkai kofun 東海古墳 (Ibaraki). Remarkably, this kind of crown is only known from *haniwa*. As early as 1942 Shu'ichi Kotō noted that the shape of

47 Zasetskaya 2015, 5-12.

48 Yamanaka 1990, 58-59; Hisatsune 2013.

49 Inemura 1999, 133-139.

the crowns and caps of the *haniwa* shows a far greater variety than the crowns and caps that had been excavated until then.⁵⁰ This is still true today and thus suggests that the currently available material is incomplete and further excavations may yield new discoveries. Some of the headdresses may also have been made of organic material as some finds of caps made of bark from the Korean peninsula suggest.⁵¹

There is only one known depiction of a person wearing a crown from Kofun period decorated tombs. The mural from the eastern wall of the Chibusan kofun チブサン古墳 (Kumamoto) shows a person with raised hands and three vertical projections coming from his head.⁵² The crown depicted seems to be similar to the one from the Sakuragaoka kofun 桜が丘古墳 (Nagano) which consists of a slim headband and three vertical projections which have no additional branches. It is dated to the fifth century CE.⁵³ There are some other depictions of crown-like headdresses from decorated tunnel graves like Senbaya 洗馬谷横穴群 and Shōgakubo 庄ヶ久保横穴墓群, but those are currently dated to the seventh to eighth century CE (Kofun-Nara period).

The Japanese archaeologist Mori Kōichi 森浩一 has pointed out two instances in which tree-shaped crowns might have been mentioned in eighth-century chronicles, the *Nihon shoki* 日本書紀 (720) and in the *Haruma fudoki* 播磨国風土記 (713–715). The first example is taken from the chapter on the emperors Ingyō 允恭 and Ankō 安康 of the *Nihon shoki*. A treasure decorated with jewels called *oshiki* 押木 that was supposed to be a gift to the emperor by prince Ōkusaka 大草香 is stolen by Ne no Omi 根使主. The interpretation of this treasure as a crown is based both on the characters that Aston translates as ‘push-wood’ or ‘push-tree’ and the fact that it is mentioned as being jewelled which might be a reference to the *kogok* that decorate the Silla crowns. The second example is taken from the section about Kako County 賀古郡 (加古郡) of the *Haruma fudoki*. In order to pay a ferry man, Ōtarashi-hiko 大帶彦 throws his headdress (Jap. *oto-kazura* 弟纒) into the boat where it sparkles in the sunlight. The described sparkling is used as evidence for the interpretation as a crown.⁵⁴

50 Gotō 1942, 330-333.

51 Azuma 1997, 457.

52 Kumamoto-ken kyōiku iinkai 1984, 42-46.

53 Aoki 1976, 51-55; Matsumoto-shi kyōiku iinkai 2003, 3 and Pl. 3.

54 Mori 2005, 311-314; Aston 1896, 330-331; Palmer 2016, 69-71.

Whereas trees are fairly commonly depicted in crowns, be it real crowns, crowns of *haniwa* or crowns depicted in decorated tombs, they are rarely depicted elsewhere. Early depictions can be seen on decorated *haniwa* from the Higashi-tonozuka kofun 東殿塚古墳 (Nara) that show trees or tree branches as well as birds and parasols on top of boats. Gina Barnes pointed out the similarity between these incisions and several passages of the *Nihon shoki* that describe the use of (Jap.) *sakaki* 榊 tree branches which are used as a means of identification among traveling chieftains.⁵⁵ Both times the tree is mentioned in connection with travel by ship and the goal of the journey is Kyūshū.⁵⁶ That might indicate that this was a local custom.

There are only a handful of trees in decorated tombs, some of which might not even be trees upon closer inspection. The Imionizuka kofun 伊美鬼塚古墳 is the only one where a tree can be identified without doubt. A large leaf and a bamboo-like tree are scratched into the wall along with some boats, both manned and unmanned.⁵⁷ Saitō Tadashi gives some other examples for trees in decorated tombs but they all consist of nothing more than two parallel lines without branches or leaves, thus making it difficult to think of the images as trees.⁵⁸

On the other hand, two objects depicted in the mural of the Takehara kofun 竹原古墳 might be stylized trees. Until now they have been interpreted as fans because their shape resembles Japanese fans (Jap. *sashiba* 翳).⁵⁹ Upon close examination of the scene of the mural the interpretation of those objects being trees and thus part of the background is more plausible. The mural shows two objects which are flanking a person, a horse on the boat and the sea (waves). The person is holding the horse. Whether a scene of the importation of horses or of the journey to the next world is shown still remains under debate. The fans do not fit either interpretation. Furthermore, in other depictions of fans in Kofun period murals they are always held by a person, while in this depiction they seem to stand on their own (which is physically impossible). An interpretation as trees on the other hand would fit with both interpretations. When regarding it as a scene of the journey to the afterlife the trees could depict the tree of life but if it is a scene that shows the importation of horses the trees could simply be the background.

55 Barnes 2007, 170-173; Tenri-shi kyōiku iinkai 2000, 85-92.

56 Aston 1896, 191-193, 221.

57 Kumamoto kenritsu sōshoku kofun-kan 1996, 30-31.

58 Saitō 1983, 108-110.

59 Saitō 1983, 124-125.

The Spread of production techniques and its links to the spread of religious beliefs

Despite the sometimes striking resemblance of East Asian finds with finds from throughout Eurasia there remain two problems that need to be addressed: the great time gap between the finds in Western/Central Eurasia and East Asia, and the huge distance (Map 3) between these finds. These problems tend to be downplayed by archaeologists. Pak writes in regard to the crown from Tillya Tepe and the crowns from Silla that it might be possible that nomads and horse riders from the Eurasian steppe regions came to the Korean peninsula.⁶⁰ The Korean art historian Joo Kyeongmi 周灵美 writes that the iconographical and morphological similarities of the crowns from Silla and the crowns from Tillya Tepe and Novocherkassk imply “the same cultural and religious tradition”.⁶¹ Several scholars mention the great similarity of the structure of burial mounds from Silla and kurgans in the Altai region while the time gap of a thousand years is disregarded.⁶²



Map 3 Tree-shaped crowns in Eurasia

Iconographical and morphological similarities alone cannot explain cross-cultural interaction or exchange in such a huge area and over such a long

60 Pak 1989, 47. However, no evidence is presented to further support this theory, and the time gap of several hundred years is not mentioned.

61 Joo 2013a, 269. Here again the huge distance involved and the time gap are not mentioned.

62 Joo 2013a, 244-245; Lee and Leidy 2013, 7-8. Again, distance and time gap are not mentioned.

period of time. This is particularly true for the crowns from the Korean peninsula and Kofun period Japan because there are only few comparable finds which have either been found extremely far away (Afghanistan, Russia), and/or are between several hundred up to a thousand years older (Pazyryk, Issyk). Even if finds with similar characteristics like gold or gilt bronze earrings are added to the analysis, the problem remains the same. Comparable finds can be found throughout Eurasia, but there always remains the problem of the huge distance and the time gap. To overcome these problems a simple comparison of similar finds and burial structure is not sufficient.

A promising solution is the analysis of production techniques within Eurasia. The spread of techniques always implies a movement of people, be it migration or travelling craftsmen. Religious beliefs and iconographic images travel with these people and so may or may not resurface in different regions. The spread of such techniques takes time. The objects manufactured with these techniques will match the local customs. A technique like the attachment of small leaves might be used on objects like crowns and head ornaments in one region while in another it is only used on earrings, or not at all. The usage of spangles attached to head ornaments might however resurface in a third region where it is more easily fitted into the local customs and objects.

There are several techniques which, through thorough investigation of their spread and distribution within Eurasia, might explain the spread of iconographical and morphological similar objects, and close the time gap that exists. Granulation, the use of spangles, and the traces of tools used for ornamentation illustrate this very well and will be presented in more detail in the following paragraphs. The study of other techniques such as openwork, inlay and making wire from a twisted piece of metal sheet seems promising as well.

Granulation

Granulation is a technique of ornamentation that is present in a lot of prestige goods throughout Eurasia. Small round granules are attached to the surface of an object by using different solutions and heat. The granules differ in size depending on the technique and the skill of the craftsmen. Granulation is a difficult technique and might sometimes be imitated by creating raised dots with repoussage. It is important to note that granulation is a technique that is generally thought to have spread from one culture to another rather than developing independently at different times in different regions. It is a tech-

nique that was developed in the Near East and then first spread westward to Greece and Egypt. From there it was transmitted into the steppe regions and was spread further by the Scythians. It is said to have reached China by approximately 300 BC. The earliest known example from the Korean peninsula is a golden belt buckle from Lelang 樂浪 which is dated to the first century CE.⁶³

Granulation is present in Kofun period jewellery from the fifth century on. Granulated objects came to the Japanese islands as part of a set of prestige goods that were brought from the Korean peninsula by immigrants. While it was not used to decorate the crowns themselves on both the Korean peninsula and the Japanese islands, it can be observed in earrings and other prestige goods. However, sometimes long pendants were attached to the crowns. These pendants are very similar in shape and structure to earrings. Sometimes they contain parts that were typically used for earrings and were often granulated. One such example are the pendants of the crown from the Kūmgwanch'ong 金冠塚 tomb. It is thus very likely that crown pendants with granulation existed as well. Some crowns are furthermore decorated with lines of raised dots on both the headband and the vertical projections. This technique produces an effect very similar to granulation. Repoussage might have been used as a more time efficient way to create a similar decoration on a larger object.

Further analysis of the way in which the granules are attached to the object might enable archaeologists to reconstruct the routes of transmission of certain techniques.

Spangles

The widespread use of jewellery decorated with spangles has tempted Chinese archaeologists to proclaim some kind of spangles culture which can be found from Mesopotamia to Japan.⁶⁴ Nevertheless, the use of spangles for decoration is a common feature among various objects throughout Eurasia. When analysed in a smaller time frame the use of spangles and the way that they are fastened to the objects might provide further insights into the spread of production techniques. In fact, analysing the way how spangles are at-

63 Joo 2013a, 283; Joo 2013b, 113-119.

64 Xu 1995, 153-160; Wan 2003, 268-281. Such proclamations of a culture shared by a huge and diverse region over several thousands of years are highly questionable.

tached to the crown from Tillya Tepe, the tree-shaped head ornaments of the Xianbei and the crowns from Korea and Japan, it becomes apparent, that there is a notable difference between the ways they are fastened. The latter is fastened with a twisted wire, while no additional wire is used for fastening the spangles to the Xianbei tree-shaped head ornaments. The small leaves are attached directly to the wire-branches which are looped, so that the spangles stay in place. A similar technique of using a twisted wire to fasten spangles is used by the Xianbei craftsmen when attaching spangles to earrings and square head ornaments like the one from the tomb of Feng Sufu 馮素 and the one from Fangshen 房身 tomb no. 2.

Tools

Traces of the tools that were used for decorating the objects also deliver clues to the spread of production techniques. Some prestige goods like crowns, but also horse gear and helmets, are decorated with straight and curvy lines made with a chasing chisel. These chisels can be identified by the triangular indentations in the metal sheet which form the lines.⁶⁵ A study of the gilt bronze ornaments from the Fujinoki kofun revealed that most of the ornamental lines on the crown but also on other objects like the horse trappings are made by such a flat chisel that leaves a triangular impression.⁶⁶ The crown from the Sannō-futagoyama kofun also has this kind of ornamentation. Suzuki writes that this kind of ornamental lines made by a flat chisel can often be observed on crowns from the Three Kingdoms period. Examples for this kind of ornamentation are the crown from Pisandong 飛山堂 tomb no. 37, the crown from Imdangdong 林堂洞 tomb no. 7A/7C, and the crowns from the north and the south mound of Hwangnam Daechong 皇南大塚.⁶⁷

Conclusion

The image of the tree of life reaches the Korean peninsula during the Three Kingdoms Period and spreads from there to Kofun period Japan. It is connected to the depictions of antlers, birds, and horses, which strongly suggests a close connection to beliefs from Siberia and the Eurasian steppe regions. The

65 Isahaya and Suzuki 2015, 158-165.

66 Suzuki 1995, 58-61.

67 Suzuki 2015, 224-230; Suzuki and Kim 2015, 204.

idea of a tree of life that connects this world with the next and is populated by souls in form of birds is adapted in both regions and modified by the addition of a boat to fit better with the local belief system. Both Northeast Asia (eastern Siberia in particular) and China have been suggested as the origin of this myth. Iconographical similarities and similar production techniques can be found in Siberia, Northeast Asia, Central Asia and West Asia from prehistoric times to the present while the legend of the Chinese Fusang tree does not share a lot of characteristics with depictions in the southern part of the Korean peninsula and Kofun period Japan. Considering all the similarities in both production techniques and religious imagery the steppe route becomes the most likely route of transmission and it thus becomes possible to bridge both gaps in the archaeological material and large time differences.

Bibliography

- Anazawa Wakō 穴沢和光 and Manome Jun'ichi 馬目順一. "Naju Bannamyeon kofun-gun: 'Umehara kōko shiryō ni yoru Tani'i Sei'ichi-shi hakkutsu ibutsu no kenkyū" 羅州潘南面古墳群—「梅原考古資料」による谷井濟一氏発掘遺物の研究, *Kodaigaku kenkyū* 古代学研究 70 (1973), 15-23.
- Aoki Shigeo 青木繁夫. "Matsumoto-shi Sakuragaoka kofun shutsudo kondō tenkan no shūfuku shochi" 松本市桜ヶ丘古墳出土金銅天冠の修復処置, *Hozon kagaku* 保存科学 15 (1976), 51-55.
- Aston, William G. (tr.). *Nihongi: Chronicles of Japan from the Earliest Times to A.D. 697*, vol. 1. London: Kegan Paul, 1896.
- Azuma Ushio 東潮. *Kōkuri kōkogaku kenkyū* 高句麗考古学研究. Tōkyō: Hoshikawa, 1997.
- Barnes, Gina L. *State Formation in Japan: Emergence of a 4th-Century Ruling Elite*. London: Routledge, 2007.
- Bopearachchi, Osmund, Christian Landes, and Christine Sachs (eds.). *De l'Indus à l'Oxus: archéologie de l'Asie Centrale. catalogue de l'exposition réalisée avec le concours exceptionnel de la Bibliothèque nationale de France, département des monnaies, médailles et antiques*. Lattes: Association Imago-Musée de Lattes, 2003.

- Brentjes, Burchard, and Ruslan S. Vasilievsky. *Schamanenkronen und Weltenbaum: Kunst der Nomaden Nordasiens*. Leipzig: Seemann, 1989.
- Chiga, Hisashi. “Eine neue Welle kultureller Einflüsse: Kamen die Reitervölker wirklich?”, in Steinhaus and Wiczorek 2004, 336-341.
- Gotō Shu’ichi 後藤守一. *Nihon kodai bunka no kenkyū* 日本古代文化の研究. Tōkyō: Kawade, 1942.
- Guguyev, V. K. “Kobyakovskiy kurgan (K voprosu o vostochnykh vliyaniyakh na kul’turu sarmatov I v. n.e. — nachala II v. n.e.)”, *Vestnik drevney istorii* 4 (1992), 116-129.
- Ham, Soon-Seop. “Gold Culture of the Silla Kingdom and Maripgan”, in: Lee and Leidy 2013, 31-67.
- Hamada Kōsaku 濱田耕作. “Shinra no hōkan” 新羅の寶冠, *Hō-un* 寶雲 2 (1932), 15-34.
- Harva, Uno. *Die religiösen Vorstellungen der altaischen Völker*. Helsinki: Söderström, 1938.
- Hayashi Toshio. “The Altai and Silla from the Viewpoint of Archaeological Findings”, in: *Proceedings of the 11th Seoul International Altaistic Conference* (Seoul: The Altaic Society of Korea, 2013), 415-432.
- Hentze, Carl Philipp. “Schamanenkronen zur Han-Zeit in Korea”, *Ostasiatische Zeitschrift*, N.F. 9 (1933), 156-163.
- Hiebert, Frederik, and Pierre Cambon (eds.). *Afghanistan: Hidden Treasures from the National Museum, Kabul*. Washington, DC: The National Geographic Society, 2008.
- Hisatsune Yuzō 久恒勇造. “Yukuhashi no Inadō kofun-gun shutsudo hin, zenkoku no jūyō bunkazai ni” 行橋の稲童古墳群出土品、国の重要文化財に, *Asahi.com*, (14.03.2013).
- Ibaraki kenritsu rekishi-kan 茨城県立歴史館 (ed.). *Sanmai-zuka kofun to sono jidai: Heisei 28 nendo tokubetsu-ten I* 三昧塚古墳とその時代—平成28年度特別展 I. Mito: Ibaraki kenritsu rekishi-kan, 2016.
- Ibaraki-ken kyōiku iinkai 茨城県教育委員会 (ed.). *Sanmai-zuka kofun: Ibaraki-ken Namegata-gun Tamazukuri-machi jōzai* 三昧塚古墳—茨城県行方郡玉造町所在. Tōkyō: Hoshikawa, 1960.
- Imperatorskaya arkheologicheskaya komissiya (ed.). *Drevnosti Gerodotovoi Skifii: Sbornik opisaniy arkheologicheskikh raskopok i nakhodok v Chernomorskikh stepyakh*. St. Peterburg: Nauka, 1866.
- Inemura Shigeru 稲村繁. *Jinbutsu haniwa no kenkyū* 人物埴輪の研究. Tōkyō: Dōseisha, 1999.

- Isahaya Naoto 諫早直人 and Suzuki Tsutomu 鈴木勉. “Kofun jidai no shoki kondō seihin seisan” 古墳時代の初期金銅製品生産, *Kobunka dansō* 古文化談叢 73 (2015), 147-250.
- Ivanov, Sergey V. *Materialy po izobrazitelnomu iskusstvu narodov Sibiri XIX nachala XX v.* Moscow: Izdatelstvo Akademii Nauk SSSR, 1954.
- James, Edwin O. *The Tree of Life: An Archaeological Study.* Leiden: Brill, 1966.
- Joo Kyeongmi 주경미 [周炁美]. “Naglangchulto geumjegyoguwa jung-ang-asia” 낙랑출토 금제교구와 중앙아시아, *Jung-ang-Asia yeongu* 中央아시아研究 18.2 (2013), 113-139.
- Joo Kyeongmi. “The Gold Jewellery of Ancient Silla: Syncretism of Northern and Southern Asian Cultures”, in: Kim 2013, 243-302.
- Kang Won-pyo 姜元杓. “Paekche kumdonggwon chejaggwa sayōo e taeha il kochal” 百濟金銅冠制作과賜與에대하 一考察, in: *Paekche ūi kwan* 百濟의冠 (Seoul: Kungnip Kongju pangmulgwan, 2011), 58-59.
- Kidder, Edward. *Early Japanese Art: The Great Tombs and Treasures.* London: Thames and Hudson, 1964.
- Kim Youn-mi (ed.), *New Perspectives on Early Korean Art: from Silla to Koryō.* Early Korea Project Occasional Series, 2. Cambridge, MA: Korea Institute Harvard University, 2013.
- Kumamoto-ken kyōiku iinkai 熊本県教育委員会 (ed.). *Kumamoto sōshoku kofun sōgō chōsa hōkokusho* 熊本裝飾古墳総合調査報告書. Kumamoto: Kumamoto-ken kyōiku iinkai, 1984.
- Kumamoto kenritsu sōshoku kofun-kan 熊本県立裝飾古墳館 (ed.). *Ōita-ken no sōshoku kofun: Heisei hachi nendo kōki kikakuten* 大分県の裝飾古墳—平成8年度後期企画展. Zenkoku no sōshoku kofun 全国の裝飾古墳, 2. Kaōmachi Iwabarū: Kumamoto kenritsu sōshoku kofun-kan, 1996.
- Kungnip Kongju pangmulgwan (eds.). *Paekche ūi kwan: top’an, haesōl* 百濟의冠—도판·해설. Seoul: Kungnip Kongju pangmulgwan, 2011.
- Laursen, Sarah. *Leaves that Sway: Gold Xianbei Cap Ornaments from Northeast China.* Publicly accessible Penn Dissertations. Paper 304, 2011 [repository. upenn.edu/cgi/viewcontent.cgi?article=1480&context=edissertations].
- Lee Hansang (ed.), *Gold Crowns of Silla: Treasures from a Brilliant Age.* Seoul: Korean Foundation, 2010.
- . “The Gold Culture and the Gold Crowns of Silla”, in: Lee 2010, 106-119.

- Lee Insook. "Of Glass and Gold: Silla tombs, the silk road and the steppes", in: Lee and Leidy 2013, 115-132.
- Lee Soyoung and Denise P. Leidy. *Silla: Korea's Golden Kingdom*. New York: Metropolitan Museum of Art, 2013.
- . "Silla, an Introduction", in: Lee and Leidy 2013, 3-11.
- Lu Sixian 陆思贤 and Chen Tangdong 陈棠栋. "Damao qi chutu de gudai beifang minzu jinshi jian" 达茂旗出土的古代北方民族金饰件, *Wenwu* 文物 1984.1, 81-83, 29.
- Munhwajae yōnguso 문화재연구소 (ed.). *Iksan Ipchōm-ri kobun: palgul chosa pogosō* 익산입점리고분: 발굴조사보고서. Seoul: Munhwajae yōnguso, 1989.
- Martynov, Anatoli I. "The solar cult and the tree of life", *Arctic Anthropology* 25.2 (1988), 12-29.
- Matsumoto-shi kyōiku iinkai 松本市教育委員会 (ed.). *Nagano-ken Matsumoto-shi Sakuragaoka kofun sai-seiri hōkokusho* 長野県松本市桜ヶ丘古墳再整理報告書. Matsumoto: Matsumoto kyōiku iinkai, 2003.
- Molodin, Vjačeslav I. *Drevnee iskusstvo Zapadnoj Sibiri*. Novosibirsk: Nauka, 1992.
- Monta Sei'ichi 門田誠一. "Higashi Ajia no okeru kyoju to tori no ishō: Fujinoki kofun shutsudo kondōkan no monyō keiretsu to zuzōgaku-teki kaishaku no kokoromi" 東アジアにおける巨樹と鳥の意匠—藤ノ木古墳出土の金銅冠の文様系列と図像学的解釈の試み, *Kodaigaku kenkyū* 古代学研究 126 (1991), 15-25.
- Mori Kō'ichi 森浩一. *Niki no kōkogaku* 記紀の考古学. Tōkyō: Asahi Bunko, 2000.
- Nara Kenritsu Kashihara Kōkogaku Kenkyūjo 奈良県立橿原考古学研究所 (ed.). *Ikaruga Fujinoki kofun: dai ni, san ji chōsa hōkokusho* 斑鳩藤ノ木古墳第二・三次調査報告書. Ikaruga: Nara Kenritsu Kashihara Kōkogaku Kenkyūjo, 1995.
- Nelson, Sarah M. *The Archaeology of Korea*. Cambridge: Cambridge University, 1993.
- . "Origin, Characteristics and Significance of Silla Gold Crowns", in: Lee 2010, 134-144.
- NRICH 국립문화재연구소 (ed.). *Naju Sinchon-ri 9 kobun* 羅州 新村里 9 號墳. Seoul: Kungnip Munhwajae Yōn'guso, 2001.
- Ōsaka furitsu Chikatsu Asuka hakubutsukan 大阪府立ちかつ飛鳥博物館 (ed.). *Yomi no akusesari: kofun jidai no sōshingū* 黄泉のアクセサリー—

- 古墳時代の装身具. Ōsaka: Ōsaka furitsu Chikatsu Asuka haku-butsukan, 2003.
- Pak Young-sook. “The origins of Silla metalwork”, *Orientalia* 19.9 (1988), 44-55.
- Palmer, Edwina. *Harima Fudoki: A Record of Ancient Japan Reinterpreted, Translated, Annotated, and with Commentary*. Leiden: Brill, 2016.
- Rudenko, Sergey I. *Der zweite Kurgan von Pasyryk: Vorläufiger Bericht*. Berlin: Kultur und Fortschritt, 1951.
- Saotome Masahiro 早乙女雅博. “Shiragi, Kaya no kanmuri: Ogura korekushon no kenkyū (1)” 新羅・加耶の冠—小倉コレクションの研究(一), *Museum* 372 (1982), 4-14.
- Sarianidi, Viktor I. *Khram i nekropol' Tilliatepe*. Moscow: Nauka, 1989.
- Saitō Tadashi 齋藤忠. *Sōshoku kofun, zumon kara mita Nihon to tairiku bunka* 装飾古墳・図文からみた日本と大陸文化. Tōkyō: Nihon shoseki, 1983.
- Schiltz, Véronique. “Éléments d'une coiffure”, in: Bopearachchi *et al.* 2003, 152-153.
- . “Tillya Tepe Catalog”, in: Hiebert and Cambon 2008, 277.
- Shira'ishi Ta'ichirō. “Die Kofun-Zeit. Eine allgemeine Einführung II: Der Beginn einer kulturellen Erneuerung auf der japanischen Inselwelt”, in: Steinhaus and Wiczorek 2004, 328-336.
- Soon-Seop Ham. “Gold culture of the Silla Kingdom and Margipan”, in: *Silla: Korea's Golden Kingdom* (New York: Metropolitan Museum of Art, 2013), 31-68.
- Steinhaus, Werner, and Alfred Wiczorek (eds.), *Zeit der Morgenröte: Japans Archäologie und Geschichte bis zu den ersten Kaisern*. Publikationen der Reiss-Engelhorn-Museen, 11. Mannheim: Reiss-Engelhorn-Museen, 2004.
- Suzuki Tsutomu 鈴木勉 and Matsubayashi Masanori 松林正徳. “Sekkannai shutsudo kinzoku seihin no kinkō gijutsu” 石棺内出土金属製品の金工技術, in: *Ikaruga Fujinoki kofun dai ni, san ji chōsa hōkokusho* 斑鳩藤ノ木古墳第二・三次調査報告書 (Ikaruga: Nara kenritsu Kashihara kōkogaku kenkyūjō, 1995), 58-109.
- , and Kimu Doyon (Kim Toyōng) 金跳咏. “Kōnan ōtsuka kita-fun shutsudo “fujin obi” meigin-sei obikanagu no sen hori gijitsu ni tsuite” 皇南大塚北墳出土「夫人帯」銘銀製帯金具の線彫り技術について, *Bunkazai to gijutsu* 文化財と技術 7 (2015), 197-204.

- . “Gunma-ken sanō-kinkan-zuka kondō-sei kan no fukugen” 群馬県山王金冠塚金銅製冠の復元, *Bunkazai to gijutsu* 文化財と技術 7 (2015), 223-232.
- Tenri-shi kyōiku iinkai 天理市教育委員会 (ed.). *Nishi-Tonozuka, Higashi-Tonozuka* 西殿塚古墳・東殿塚古墳. Tenri: Tenri-shi kyōiku iinkai, 2000.
- Toporov, Vladimir N. “Drevo mirovoe”, Mifi narodov mira Enziklopedija.* Moscow: Sovetskaja enciklopedija, 1991.
- Wan Xin 万欣. “Xianbei mu zang, San Yan shiji yu jin buyao shi de faxian yu yanjiu” 鲜卑墓葬、三燕史跡与金步摇饰的发现与研究, in: *Liaoning kaogu wenji* 辽宁考古文集. Shenyang: Liaoning jiaoyu, 2003), 268-281.
- Wang Jingchen 王晶辰 (ed.). *San Yan wenwu jingcui* 三燕文物精粹. Shenyang: Liaoning renmin, 2002.
- Witsen, Nicholaas. *Noord en Oost Tartarye; Tweede Deel: Behelzende de Landschappen Georgia, Mengrelia, Cirkassia, Crim, Astakkia, Altin, Tingoessia, Siberia, en Samojedia.* Amsterdam: Schalekamp, 1785.
- Xu Bingkun 徐秉琨. *Xianbei, Sanguo, Gufen – Zhongguo, Chaoxian, Riben gudai de wenhua jiaoliu* 鲜卑・三国・古坟 — 中国、朝鮮、日本古代的文化交流. Shenyang: Liaoning guji, 1995.
- Yamanaka Hidehiko 山中英彦. “Fukushima-ken Inadō kofun-gun no katchū” 福島県稲童古墳群の甲冑, *Kikan kōkōgaku* 季刊考古学 33 (1990), 58-59.
- Zasetskaya, Irina P. (ed.). *Sokrovishcha sarmatov: katalog vystavki k 100-letiiu so dnia rozhdeniia akademika Borisa Borisovicha Piotrovskogo.* St. Petersburg: Izd-vo Azovskogo istoriko-arkheologicheskogo i paleontologicheskogo muzeya-zapovednika, 2008.
- . “Zolotyie ukrasheniya iz kurgana Khokhlach: klassicheskiye obraztsy sarmatskogo polikhromnogo zverinogo stilya I–nachala II v. n.e.”, in: *Zasetskaya* 2008, 29-43.
- . *Magiya zolotoy diademy iz kurgana Khokhlach.* St. Petersburg: Izdatelstvo gosudarstvennogo Ermitazha, 2015.