Korean Lacquer Art Technique
Korean Lacquer Craft of Goryeo to Joseon Dynasties

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Abstract: Korean lacquer art especially takes the representative form of artwork and has been permeated into our life culture for more than 20,000 years, being easily found in Anbang and Sarangbang (a main room and a reception room of a Korean traditional house).

At the moment, lacquer produced in Wonju in Gangwondo province takes large part of the whole products. Korean lacquer sap has the best quality in the world. It is because the proportion of Urushiol, a main component of lacquer, is large enough to make the activation of enzyme very effective, resulting in quick hydration and hardening of lacquer layer. However, only small amount of high qualified lacquer is produced in South Korea, being more expensive than those from Japan. As a result, dependence on imported Chinese lacquer sap is increasing in South Korea.

From the prehistoric period to Three Nations Era, the lacquer culture of Korea was centered on a method of drawing colored patterns on the varnished lacquer. However, from the period of the United Silla, the method by which the products were made changed into luxuriously embellishment using various gemstones or jewelry materials such as mother-of-pearl, amber, sapphire, gold, silver, etc. During the period of Goryeo and Joseon Dynasties, mother-of-pearl inlay develops into widely used technique when ornamenting products. The mother-of-pearl inlaid lacquer ware was especially highly evaluated to the degree that it was well known even in Song dynasty and is regarded as a representative artwork of Korea.

Keywords: lacquer sap; Urushiol; Lacquer-ware Heritages of Korea; Excavated Lacquer-wares from Anapji Pound; Mother-of-pearl of Goryeo Dynasty; Lacquered Sutra Box inlaid with Mother-of-pearl of Goryeo Dynasty; Mother-of-pearl of Joseon Dynasty; Mother-of-pearl of Korean Lacquer.
1 Introduction

Korean art products base their motives on the nature—loving spirit—seeking to live with the nature. Korean beauty is best seen in artworks such as wooden lacquer craftworks, mother-of-pearl inlaid craftworks, horn craftworks, grayish-blue—powdered celadon and white porcelain vividly enlivening the wonder of the nature. Among these Korean lacquer art especially takes the representative form of artwork and has been permeated into our life culture for more than 2,000 years being easily found in Anbang and Saranghang (a main room and a reception room of a Korean traditional house).

From the prehistoric period to Three Nations Era, the lacquer culture of Korea was centered on a method of drawing colored patterns on the varnished lacquer. However, from the period of the United Silla the method by which the products were made changed into luxuriously embellishment using various gemstones or jewelry materials such as mother—of—pearl, amber, sapphire, gold, silver, etc. During the period of Goryeo and Joseon Dynasties, mother—of—pearl inlay develops into widely used technique when ornamenting products. In China there were many ornamental techniques like mother—of—pearl inlay, carved lacquer—ware, and filled—in and submerged—gold decoration among which the carved lacquer particularly has been evolved into the main method of crafting. In Japan Makiee transplanted drawing has been mostly favored as a technique for embellishment.

On the other hand, Goryeo mother—of—pearl inlay was highly reputed in its quality to the degree that the fame was greatly acknowledged by Song Dynasty of China still well known as an archetypical type of Korean artworks. This paper tries to find peculiarities of patterns and methods of Korean lacquer craftworks according to the historical flow through examining the representative lacquer products from each period. In doing this, misunderstandings in the historical flow of lacquer crafting methods are expected to be rectified contributing to accurately grasping the characteristics of those methods. In addition, it is hoped that the deepening of understandings in Korean lacquer culture will add to re-discovering the true value of Korean art which nowadays being more and more forgotten and furthermore becoming the world—famous art.

2 Lacquer—producing Areas in Korea

Lacquer is hardened sap at room temperature which is oozed when Urushiol of Anacardiaceae is cut becoming glue type or block developing ingredient. The sap is a w/o (water in oil) emulsion. There are several types of urushiol. Most fall into one the three types: 1. Urushiol (Korea/China/Japan), 2. Laccol (Taiwanese/Vietnamese), 3. Thitsiol (Thai/Burmese). There are three different kinds of lacquer tree grow in the district of East Asia according to the feature of soil and peculiar lacquer crafting techniques have been developed in each part of the area.

Urushiol is produced widespread in Korea but the products collected from cultivated Urishiol trees in northern mountain areas are the best qualified. To give a mention only on unrefined lacquer product from Korea is the best in the world. It is because the proportion of Urushiol is large enough to make the activation of enzyme very effective resulting in quick hydration and hardening of lacquer layer.

Lacquer—producing areas in Korea are found in the historical records such as Donggukyeojiseungram, Tosanjo, and Ojuyeonmunjangjeonsang. The book entitled Products of Joseon points to Taecheon in Northern Pyeong—ahn province, Wonju in Gangwondo province, Hamyang in Southern Gyeongsangdo province and the areas around Shinheung in Southern Hamgyeong as the districts where lacquer tree growing was popular. Lacquer from Taecheon was specially indicated as well qualified and recommended to be cultivated. At the moment lacquer produced in Wonju in Gangwondo province takes large part of the whole products. In Korea, lacquer—wares are consistently being found not only
in mountain areas but also as excavated artifacts and in-
heritances. (Plate 1)

Plate 1  Map of lacquer tree sites in Korea and some of the place where lacquer – ware unearthed

3 Important Lacquer – ware Heritages of Korea

3.1 Ancient Lacquer – ware Heritages

The oldest remains of lacquer – ware are in presumption pieces of foil varnished with lacquer found together with bronze tools from a stone graveyard in Nam-sungrí Asan in Chungnam province. Also a black lacquered sheathe which is assumed to be from B. C. 108 to A. D. 313 was found in the ancient graveyard in Jeong-baekri Pyeong – yang.

As for representative examples of artifacts from the early iron era there are round lacquer ritual dish (Plate 2) and square lacquer ritual dish (Plate 3) found in Dahori excavation site in Gyeongsangnamdo province as well as a writing brush and a dagger with lacquered sheath most of which are black lacquered. A heritage site of Lolang Period in the contemporary Pyeong – yang had also a number of ritual dishes but Dahori lacquer – wares had different forms that are unseen the Lolang lacquer – wares in the Han period; under layer of black lacquer foil had particles in high density which seemed to be the part of soot.

Plate 2  Round Lacquer Ritual Dish†1st C. BC†Excavated from ancient tomb sites†Dahoe - ri†Kyongsanmu - do Changwon†L9. 8x6. 3x7. 5cm†National Museum of Korea Collection

Plate 3  Square Lacquer Ritual Dish†1st C. BC†Excavated from ancient tomb sites†Dahoe - ri†Kyongsanmu - do Changwon†L7. 9x12. 5cm†National Museum of Korea Collection

3.2 Three – nation Era †United Silla period

Three – nation Era†around AD1 – 668†

– Lacquer – ware piece of dish form in sun pattern was excavated in Togwang Tomb located in Seokchongdong†
a district of Baekjae in around A.D. 300. Underneath of lacquer foil on the sun patterned lacquer ware (Plate 4-1, 4-2) was soot black lacquer layer and red lacquer layer.

Plate 4-1  Plate 4-2

In addition, wood products like Headrest (Plate 5), Footrest (Plate 6) as well as wooden coffin for which lacquer coloring or gold embellishment were used were excavated at the King Munyeong’s Tomb where a graveyard called Gyemyo (Year 523) is located.

Plate 5  Plate 6

Plate 5 Wooden Painted Head Rest for Queen Paekche 5th century
Excavated from King Munyeong’s Tomb Gongju Chungchongnam-do
40.0cm National Treasure No. 164 Gongju National Museum Collection

Plate 6 Wooden Painted Foot Rest for King Paekche 5th century
Excavated from King Munyeong’s Tomb Gongju Chungchongnam-do
43.2x38x20cm Gongju National Museum Collection

Many lacquer wares were found in the ancient tomb sides as to Howoochong Cheonmachong Hwangnamdaecheong etc. in Gyeongju of Silla (356 – 935). They were lacquer drawings describing with red lacquer on black lacquer background or using black on red background (Plate 7-1, Plate 7-2, Plate 8, Plate 9). To look closely into the lacquer drawings, it is found that touches of brush were vividly left when featuring an object through color paintings of red or yellow.
Besides this, it is notable that the technique and the pattern used in Mirror Inlaid with Mother-of-Pearl (plate 14 - 1|14 - 2) excavated in Gaya district are similar to those used in Mirror Inlaid with Mother-of-Pearl from Shosoin（正倉院）in Nara, Japan.

Tortoise Shell Comb and batches of jewelry artifacts (8 – 10 A.D) owned by Ho-Am Art Museum in Korea were embellished with tortoise shell, sapphire, gold thread, etc. The comb is a hair embellishment on which flower patterns were drawn with gold thread with inlaying of sapphire (Plate 12 – 1|2 – 2). On some of the jewelry are found gold painting decoration sophisticatedly depicting veins of leaves (Plate 13 – 1|3 – 2).

For 18.6cm – diameter – sized Mirror Inlaid with Mother-of-Pearl (Plate 14) known to have been found in the district of Gaya in Gyeongsangnam-do province area of Korea, similar methods with the ones used in Japanese Mirror Inlaid with Mother-of-Pearl; using of Mother-of-Pearl and amber to draw patterns and dispatching particles of turquoise on the background were used. The patterns are Two dramatic lions and flowers.

In Japanese Shosoin（正倉院）there are six luxurious and large mirrors and their sizes approximate with 39.5cm|26, 8cm|27.3cm and 29.8cm of which the similar sized mirrors have never been found in mainland China. A mirror of the 8th century found in Xian of China has in comparison with the one from the Gaya district coarse design and is immature in about 24cm diameter. A technique called Bokchaesaek (伏彩色) where red (dark red, orange or yellow) pigment is varnished on the backside of amber and Mother-of-Pearl appears also on the transparent shell of tortoise of the 11~12th century Goryeo Mother-of-Pearl as applied; Lacquered Case Inlaid with Mother-of-Pearl and Turtle Shell（Plate 15）Goryeo period 12th century owned by Taimadera, Nara Japan）Lacquered with mother-of-pearl and tortoiseshell inlay and brass wires（Plate 16）Cosmetic case Goryeo period 12th century owned by The Metropolitan Museum of Art）etc.

3.3 Goryeo Dynasty

During Goryeo（高麗）Dynasty (918 ~ 1392) highly spiritualized great artworks were produced based on Buddhism among which are Mother-of-Pearlrel- adon（佛指舍利）Buddhist paintings and Illuminated Manuscript (gold and silver on indigo-dyed mulberry paper), Mother-of-Pearl Inlay showed elevated spirituality and techniques in reflection of Buddhism culture of Goryeo Dynasty. Such sophisticated and gorgeous ap-

pearance is catching the eyes of the world in recent years. About 20 items totaling the chartered and the excavated are being transmitted.

Leased artifacts from abroad — There are 8 leased items with inclusion of Lacquered Sutra Box Inlaid with Mother – of – pearl owned by Japan’s Mori family (Plate 17 – 1, 17 – 2, 17 – 3, 17 – 4) and Lacquered Case Inlaid with Mother – of – Pearl and Turtle Shell (Plate 15, Goryeo period, 12th century, Taimadera, Nara, Japan). From America and Europe five boxes are leased.

Leased artifacts from the domestic area — Lacquered Whish Handle Inlaid with Mother – of – pearl and Tortoiseshell, Lacquered Case Inlaid with Mother – of – pearl and Turtle Shell, Lacquered oil bottle Inlaid with Mother – of – Pearl and Turtle Shell were leased from the National Museum of Korea.

Other artifacts from excavation sites include Lacquered incense Box with mother – of – pearl and Tortoiseshell and gold painting Decoration of flowers, tree, and waterfowl (Plate 18 – 1, 18 – 2, 18 – 3). The Box is known to have been found from the Goryeo ancient tomb in Gaesung (開城) and the found items are remained as broken particles due to the war. The size of the box cover is 29.1 × 18.8 × 11.3 cm, the height of the body part is 25.8 × 17.6 × 10.2 cm and the size of the tray is 2.3 cm. Because there were 28 incense remained in the tray the tray is called Incense Tray. The full countenance of the tray appears in『Jo-seongjeokdolbok』and vegetation and waterfowl design which is hardly found in other Goryeo Mother – of – pearl Inlays conurs with mother – of – pearl and golden description technique for the sophisticated description on the cover and the body. The tray seems to be the oldest among existing Goryeo Mother – of – pearl Inlays and the main part of vegetation and waterfowl design is similar to the pattern of Blue Bronze Silver Inlay from the 11th to 12th century but even more sophisticated and picturesque seemingly produced in 11 ~ 12th century.

Goryeo lacquered sutra box inlaid with mother – of – pearl — Presently existing Lacquered Sutra Box In-
15 years of the construction period

8 Kitamura Art Museum

gree that Koreana tripitaka was completed in 1236 after
waji

cense of Lacquered incense Box

jang

ently existing Goryeo lacquer sutra box inlaid with moth-
duction of the boxes. According to
mment

undergoing of Japanese invasion. In 1272

fighting against Chinese Yo

store the sacred books

a request from a queen

inlaid boxes manufacture was installed for the mass pro-
large number of boxes was possible with the help of

a workshop to produce craftworks run by the govern-

najeonjang

Dinasties. Buddhism culture kept flourishing to the de-

-najeonjang

of - pearl inlaid lacquered sutra boxes

toiseshell and insect wax are not used for production but

some particles

such as Kamtschatkana

are found in one square centimeter

parallel on the wooden background. The results of shell
cutting experiments indicated that shell inlays were cut
with a knife. The shell used to be ear shell (Haliothis sp
such as Kamtschatkana). It is thick at 0.2 – 0.3 mm.

Turtleshell uses to form small square shapes and parts of
the flower stamens. On the back side of the peeled off
mother – of – pearl was remains of fish glue.

These are backed with vermilion pigment which
enhances the colour of the turtleshell. In addition to
shell inlays two types of metal inlays are used and detail
of their analysis given in the main text. There are single
lines made from pewter and twisted double wires made
from brass.

Goryeo lacquer boxes as to 2 ~ 7
six items and
some particles
take the largest portion amongst every
lacquer craftworks made during Goryeo Dynasty. Tor-


frame

weaving of yellow brazen threads

bone ash ground

etc. Lately

particles of this box kind were found
around in Heze ( () )

Plate 17 - 1

17 - 4

Plate 18 - 2 Detail ( Plate 18 - 1 )

Plate 18 - 3 Incense of Lacquered incense Box( Plate 18 - 1 )

Characteristics of methods used in Goryeo lacquer
craft seen through 1 Lacquered Sutra Box Inlaid with
Mother – of – pearl belong to Japan’s Mori family (Tokyo-

National Museum Collection

) The boxes in 2 Japanese private collection

Tokugawa Art Museum

Nagoya

the British Museum

London

Amsterdam National Museum collection

the Museum of Fine Arts

Boston

Tokyo National Museum

8 Kitamura Art Museum

Koyo and 9 newly discovered
Goryeo dynasty sutra box in mother - of - pearl inlay as
a Japanese Private Collection. The background of these
sutra boxes having been made during Goryeo dynasty is
that the Dynasty had Buddhism to be the spirit of de-


- of - pearl inlaid lacquered sutra boxes

Plates show the techniques of striking

3.4 Joseon Dynasty

During Joseon ( ) Dynasty (1392 ~ 1910) the

confusion philosophy was an essence of the political
practices

and it influenced the social atmosphere where

integrity

diligence and modesty were valued as impor-
tant virtues. Sophisticated arabesque design of Goryeo
changed into simple arabesque patterns and there appear
pictorial patterns as well as simple patterns in an air of
folk paintings. As a new technique

method of striking
and souring was invented and it becomes popular to use the techniques in innovative and creative ways. A technique to express stretching arabesque patterns was especially influential to develop lacquer craft patterns and techniques in Momoyama age (1574 – 1600) to the early Edo period (1603 – 1876). Also, tortoiseshell method which is found in Goryeo mother – of – pearl inlaid lacquer forms the main pattern. A technique to use metal thread decreased in its use and thicker metal lines start to partly appear.

The early Joseon (14 ~ 16th century) — The very small number of products from the early Joseon remains. A Phoenix Box possessed by Kohn Eastern Asia Art Museum, Germany is assumed to be from the reflected time period (Plate 19 – 1). On the cover of the box was elaborated with wired metal lines (photo 19 – 2). Horns painted in red were alternatively attached with mother – of – pearl inlay to add to the visual effects.

These kinds of mother – of – pearl inlaid boxes remain in Japan and are called Ginseng Box. The name is assumed to have come from the facts that ginseng as a special product in the early Joseon Dynasty was contained in the lacquer boxes to be gifted via envoys. Arabesque patterns which appear on the ginseng boxes arouses similar air of magnanimity with the ones appear on 15 ~ 16th century’s grayish blue powdered celadon. It is especially important given that bone ash ground which used to be utilized from United Silla period to Goryeo Dynasty is found on Foundation layer of this box (Plate 20 – 2).

Also, a method of hair – line engraving appears on the mother – of – pearl inlay design. Extra patterns are found to be similar with the ones on Goryeo mother – of – pearl inlaid lacquer sutra box (Plate17 – 1) Lacquered Sutra Box Inlaid with Mother – of – pearl and Tortoiseshell, Joseon 16–17thC, Tokyo National Museum Collection. The underglaze design of the box are attributed to the Mori family. It is also the only survivor of its kind from the Joseon Dynasty.

A tortoiseshell box presumed to be from the 16 ~ 17th century (Plate 20 – 1) maintains to consume the forms and the production method used in Goryeo sutra box presenting vigorously and simply patterned design.

A Phoenix Box possessed by Kohn Eastern Asia Art Museum, Germany is assumed to be from the reflected time period (Plate 19 – 1). On the cover of the box was elaborated with wired metal lines (photo 19 – 2). Horns painted in red were alternatively attached with mother – of – pearl inlay to add to the visual effects.

The mid Joseon (17 ~ 18th century) — Undergoing the early to mid Joseon novel mother – of – pearl inlay techniques are developed and the patterns become bigger of which the flowers and the leaves patterns transforms into realistic forms. Branches in arabesque patterns used to be made of metal changed into linearly attached mother – of – pearl foil expressed as stretching lines. With the invention of a method of hair – line engraving rainbow effects were added on the mother – of – pearl inlay further enhancing visual impression. An artifact from this period is Lacquered Clothing Box Inlaid with Mother – of – pearl foil which belongs to the National Museum of Tokyo (Plate 21 – 1).

Simple and modern sprout designs and flower patterns in flowerage arabesque alternatively appear to vividly and elegantly elaborate the whole part of the box. As for the artworks that highlighted the stellar mother – of – pearl through the use of hair – line engraving, it is as
sumed to go down to the 16th century but can also come up as of from the 17th century in which the arabesque was constituted with composure.

Plate 21 – 1
Plate 21 – 1 Lacquered Clothing Box Inlaid with Mother – of – pearl
Joseon 16th C H 14.5 L 65.0 W 39.0cm (Tokyo National Museum collection
Plate 21 – 2) Detail of Lacquered Clothing Box Inlaid with Mother – of – pearl (Plate 21 – 1)

At the turn to the late Joseon from the mid Joseon period, drawing picturesque grape or Sagunja (plum, orchid, chrysanthemum and bamboo tree) designs appear as well as symbolic pattern called Gilsangmun (to wish for flourishing of the next generation) (Plate 22 – 1) (Plate 22 – 2) and method of hair line engraving is used together to describe the details of the pattern. For the geometric design or mountain and water design, new thin – slicing technique using thin lines of mother – of – pearl is used. Also, tortoiseshell is used for the independent main pattern such as a dragon or a phoenix being juxtaposed with metal line decorations.

Plate 22 – 2
Plate 22 – 2 Detail of Lacquered Clothing Box Inlaid with Mother – of – pearl (Plate 22 – 1)

Plate 22 – 3
Plate 22 – 3 Cross – section analysis Lacquered Clothing Box Inlaid with Mother – of – pearl (Plate 22 – 1)

In the late Joseon, mother – of – pearl consumer group was expanded to commoners with appearance of new techniques such as thin – slicing technique, cut – out technique and method of hair – line engraving. In addition, mass production became more and more available in concurrence of a change in technique where mother – of – pearl is foiled on wooden background and charcoal powder mixed foundation is applied to be lacquered.

An example of mother – of – pearl in the late Joseon is Mother – of – Pearl Inlaid Quiver (Plate 23 – 1) (Plate 23 – 2). 12 tablets of paulownia surrounds around making a shape of a column on which charcoal sketches are done and mother – of – pearl is attached. From the analysis on the cross – section of lacquer layer, it is shown that the dust layer is changed into charcoal powder layer (Plate 23 – 3).

Lacquer craft at the moment was majorly possessed by noble class (Yangban) one example of which is a wooden lacquer coffin of a dead person from Yangban class.

The late Joseon (early 19 – 20th century) — Mountain and water design, geometric pattern and ten creatures design symbolizing longevity and commoner – like folk painting pattern appear in this period. Thickness of ear shell gets thinner and a method of hair line engraving is used together to describe the details of the pattern. For the geometric design or mountain and water design, new thin – slicing technique using thin lines of mother – of – pearl is used. Also, tortoiseshell is used for the independent main pattern such as a dragon or a phoenix being juxtaposed with metal line decorations.
The mostly remaining mother-of-pearl pillow covers are wooden, on which mother-of-pearl foil is attached, put on both sides of the pillow so that detachment would be possible for washing. Tiger Design Pillow Cover (Plate 24 - 1) in an air of folk paintings and Phoenix Design Pillow Cover (Plate 25) where white bronze edge surrounds the phoenix design are also found. Cross section of lacquer layer in these pillow cover kinds has also the proof of charcoal powder layer (Plate 24 - 2). A characteristic of this charcoal layer is that it is mixed with fish glue and lacquered, making black lacquer of which the color never fades away.

Typical technique used in the late Joseon is as follows. First of all, on wooden background (Plate 26 - 1) the design is sketched with India ink, maintaining vividness of touches of a brush (Plate 26 - 2). Mother-of-pearl is attached with fish glue (Plate 26 - 3) and mixture of previously mentioned charcoal soot powder and fish glue fills the mother-of-pearl as a primary painting process (Plate 26 - 4). After it is dried, the surface is grinded with whetstone to be flat (Plate 26 - 5) and lacquered (Plate 26 - 6). Once dried, lacquer layer on the mother-of-pearl is scratched with a razor to be wiped out (Plate 26 - 7) and the work is concluded with polishing and shining and engraving (Plate 26 - 8).
Craftworks in the late Joseon were modestly made with simple techniques such as engraving with a craft knife, cutting with a saw and intaglio engraving. However, during the Japanese colonization, complicated skills were utilized in a way that were used for Japanese lacquer craftworks. Mother of pearl inlaid lacquer craftworks in the late Joseon period becomes no longer recognizable that the under layer of black lacquer was made through the particles of soot layer. In short, simple and natural atmosphere seen from the craftworks in the late Joseon period becomes no longer found.

4 Conclusion

As for Korean lacquer, those of Taecheon (原州) Mt. in northern area and of Wonju (原州) Mt. in southern area are famous for their good quality. However, only a small amount of high qualified lacquer is produced in Korea being more expensive than those from Japan. As a result, dependence on imported Chinese lacquer is increasing.

The oldest lacquer heritage artifact dates back to B.C. 1st century heritage site in Dahori of Gyeongsangnam-do province show how Korean style is different from the one of the ancient Han’s Lolang Period. Also, it is recognizable that the under layer of black lacquer was made through the particles of soot layer.

In the 8th Century, lacquer ware of United Silla uses the technique that luxurious gemstones embellish the lacquered background. Later then, during the periods of Goryeo and Joseon Dynasties, mother of pearl inlay technique becomes the mainly used technique in producing lacquer ware. Mother of pearl inlays of Goryeo are high qualified and elegant in reflection of Buddhism culture of Goryeo Dynasty, while the idiom of the artworks of Joseon Dynasty appears simple and folkloric, concuring with the enlargement of pattern and appearance of folk painting design. Along with the designs, method of striking and scouring occurs, resulting in popularization of vigorous and innovative styles of mother of pearl inlay techniques.

Uninvestigated exact dates of the ancient lacquer ware heritage artifacts and the influential relationships with the techniques of Chinese lacquer ware might be enlightened through the future scientific analysis on East Asian lacquer ware.

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