VAN İLİNDE SAVAT TEKNİĞİ İLE ÜRETİLEN GÜMÜŞ TAKILAR

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ÖZ

Savat (Niello) gümüş, bakır, kurşun ve sülfürden oluşan siyah bir karışımdır. Karışım kazınmış yüzeye sürüldükten sonra eritilir ve yüzeye sabitlenir. Savat tekniği Van ilinde önemli bir ekonomik kaynak olarak uygulanmaktadır. Urartu sanatı etkisi altında üretilen savat gümüşler yerel bir özellik kazanarak Van ilinin geleneksel özelliklerini yansıtmaktadır. Bu çalışmada, Van ilinde Savat (Niello) tekniği ile üretilen gümüş ürünler tanıtılmaktadır. Bu amaçla öncelikli olarak Savat (Niello) tekniği tanıtılmakta ve daha sonra Savat (Niello) uygulama aşamaları ve teknikleri fotoğraflarla aktarılmaktır. Bu kapsamda Van ili Savat (Niello) tekniğinde kullanılan motifler açıklanacak ve ortaya çıkan ürünler fotoğraflarla belgelenecektir.

Anahtar Kelimeler: Takı, Savat, Van, El Sanatları, Gümüş İşlemeciliği

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SILVER JEWELRY PRODUCED WITH NIELLO TECHNIQUE IN VAN, TURKEY

ABSTRACT

Niello is a black mixture of sterling pure silver, copper, lead, and sulfur. The mixture is placed into engraved lines and then melted and graded. Silver Niello jewelry is still produced in the province of Van in Turkey as an important economic resource. Silver Niello jewelry produced under the influence of the art of Urartu has become a traditional symbol of Van. This study aims to explain the art of Niello which is applied as a jewelry ornamenting technique in Van. For this purpose, firstly the different Niello techniques will be described, then the implementation stages and techniques will be presented with photographs. Within this scope, the motifs used in the silver Niello work produced in Van will be explained, and photographs of silver products will be presented.

Keywords: Jewelry, Niello, Van, Handcraft, Silver Work

1. Introduction

Handcrafted products provide information regarding the economic, social and religious aspects of communities. Every handcrafted product has a certain character in relation to the region it is produced in and fulfills a symbolic or religious duty within the scope of that region's traditions and beliefs. As a result of archaeological excavations, researchers discovered that Anatolian people used jewelry for various different purposes during prehistoric and historic times. The production of handcrafted products and jewelry in Anatolia developed with the Urartian mineral processing established around the basin of Lake Van. Archaeological excavations carried out in this area, uncovered a variety of jewelry such as bracelets, earrings, necklaces, pins, fibulae, rings and beads that contain rich decorative items in Urartu tombs. Products influenced by the art of Urartu have survived to this day. Due to its geographical location, Van has been home to many civilizations throughout history. Therefore, A vast range of handcrafted products can be found in Van, all of which reflect the lifestyle of the civilization they were made in. Sock knitting, carpet and rug weaving and designing silver jewelry with the Niello technique are the main crafts practiced in Van. Silver Niello jewelry is still produced in Van although it is trying to maintain its existence. When the jewelry designs found in Van are analyzed, it can be seen that Urartian patterns and figures have had great influence on the designs. Jewelry produced under the influence of the art of Urartu has become a traditional symbol of Van. Jewelry production is of great importance in Van due to advantages such as improving the economic conditions of the local people and enriching the region's culture. The Chamber of Commerce and Industry of Van signed a Geographical Indication for Niello silver work in the year 2017. As a result of the long established traditions and knowledge handed down from generation to generation in Van, Niello silver work was eventually recognized with this Geographical Indication. With this recognition achieved, Niello silver work and its traditional process will be preserved. When viewed from the economic aspect, craftspeople will give more importance to production and consumers will pay special attention to the products being of geographical origin.

The Art of Niello

The art of Niello is a technique used to decorate silver products. Niello means "black" derived from the "esvad" or "sev'ad" in Arabic (Erginsoy 1978, Kusoglu 1999). The art of Niello was used by the ancient Romans, and as the ring of King Aethelwulf (839–858), which is exhibited in the British Museum, demonstrates the technique was well established in England at an early date. The art of Niello reached its peak in 15th-century Italy in the workshop of Florentine

goldsmith, Maso Finiguerra. Russian goldsmiths working in Tula in the late 18th century revived the craft, and Niello work came to be known in Russia as Tula work. Fine quality Niello is still being produced in India and the Balkans (Art/Niello, 2018). The art of Niello is used to engrave designs and is composed of two steps: The first step is preparing a Niello clay and applying it onto the silver (Kusoglu 1999). This technique is hardly used today. Niello clay is black in color and is a mixture of sterling pure silver, copper, lead, and sulfur. The mixture is placed into the engraved lines in powder form, and then melted and graded. The origin of Niello art comes from the Caucasus Region, Dagestan. The Urartians, showing great success in the ornamentation of metals, practiced the art of Niello before the Ottomans. The art of Niello has become widespread in Turkey ever since the Ottoman period. The art of Niello is widely used in Islamic metal art. This art form is often seen on silver objects found in Turkmenistan, Iran, the Caucasus, and Eastern Anatolia. In particular, Niello has been crafted with great skill on daggers, knives, swords, and gun butts in Caucasus, Dagestan. The most advanced and prosperous period for the art of Niello was the Ottoman period. In the 19th century, drawings were applied to accessories such as cigarette cases and daggers using Niello techniques. In addition, there are belts and belt buckles that were also produced with Niello techniques during the Ottoman period. These belts and belt buckles are of great interest due to their rich technical and remarkable workmanship. Some belts were produced only with Niello techniques while others were produced with both Niello and filigree. In addition, it is possible to see many silver-working techniques such as nailing, baking, casting and openwork on some of the belts and belt buckles.

Image 1: Cigarette cases from Ottoman period in 19th century

The art of jewelry improved remarkably during the period of the Ottoman Empire. Jewelry-making workshops established throughout the Empire placed great importance to this art. Jewelry produced in these workshops, especially those made for sultans, are unique. When Ottoman jewelry is examined, it can be seen that the techniques used were highly developed. Techniques executed with a great expertise were integrated with each other and jewelry making advanced in terms of technics and design. Today, the art of Niello is not practiced as much as it used to be, due to the economic deprivation in Van, terrorist attacks and the lack of easy transportation. Craftspeople in Armenia and Dagestan led the development of this art by developing the techniques of Niello and Filigree. However, the developments were brought to a standstill, when a number of riots broke out in the Ottoman Empire, during which time a majority of the craftspeople lost their lives. The death of craftspeople prevented the progression and teaching of this art during that period as the remaining craftspeople refrained from sharing their knowledge. The decline of the art of Niello continues today. 120 workshops that were once situated in the center of Van have been abandoned, resulting in only six small workshops in business today. The art of Niello in Van has practically come to a standstill, but it still tries to maintain its existence. Today, there is a lack of diversity and fine workmanship in Niello works. Due to a decrease in tourism, items produced with the art of Niello are just souvenirs similar to other products in Van. The most commonly produced items are Niello bracelets, necklaces, pendants, and earrings.

2.1. Materials Used for Niello Ornamentation in Van

Raw materials used in the Niello ornamentation are silver, copper, and lead. 925-sterling silver is used in Niello ornamentation. The amount of raw materials used in the preparation of Niello alloy can vary but is most usually remains unchanged. For example, a mixture containing 80g copper, 80g lead and 4g silver is one of the measures used in the preparation of Niello alloy.

2.1.1. Silver
In Van 925-sterling silver is used in silver ornamentation. The silver alloy used in the preparation of Niello allay can vary in amount and depends on the craftsperson. 950-sterling silver is the best option that can be used for the Niello alloy. The more silver is put into the mixture, the blacker the color of the Niello mixture becomes. A high quality Niello mixture has a bright gray-black color.

2.1.2. Copper
Copper is used is the preparation of the Niello alloy. Copper is the hardest raw material melted to melt in the pot. This is why it is the first material to be placed in the pot. If the ratio of copper becomes too high the color of the alloy turns red. Therefore, a fixed measure must be used for the process.

2.1.3. Lead
Lead is used in the preparation of the Niello alloy. Lead melts quickly, so it is placed into the pot last. If the ratio of lead becomes too high, the color of the alloy turns black, which causes the Niello mixture to spill. Therefore, a fixed measure must be used for the process.

2.1.4. Sulfur
Sulfur is used to cool down the boiling alloy. Approximately one kilogram of sulfur is used in the process. The dissolved metals are poured into the pot, then the Niello mixture start to burn with the sulfur. The sulfur helps remove the slag which is seen in the Niello mixture.

2.2. Basic Tools Used in the Art of Niello
2.2.1. Fret-saw: A fret-saw is a cutting tool used for cutting sheet metals and implementing openwork technique on metal sheet.

Image 2: Fret-saw

2.2.2. File: Files, which come in many different lengths are used to file the surface of the silver after the Niello technique is applied. This process is performed in order to make the uncarved surface of the silver brighter and give the metal the desired shape and form.

Image 3: File

2.2.3. Pliers and Gripping Pliers: These tools are used for a variety of purposes such as holding a wire or a plate, towing, warping, bending, and clamping.

Image 4: Pliers and Gripping Pliers

2.2.4. Pistachio Scissors: Pistachio Scissors are used for cutting wire and metal and also for the preparation of welding.

Image 5: Pistachio Scissors

2.2.5. Hammers and Mallets: These tools are used for pushing steel items in the process of carving. There are many different sizes of hammers and mallets.

Image 6: Hammers and Mallets

2.2.6. Thin-Ended Steel Pens: These pens are used for processes such as drawing, patterning, decoration, and inlaid.

Image 7: Thin-Ended Steel Pens

2.2.7. Clamps: Clamps are used on silver products to process them more easily. They help to tighten the products when used with screws. There are two types of clamps: the hand clamp and the bench clamp.

Image 8: Clamps

2.2.8. Glazer: This tool is used to polish silver objects and is a rotary tool covered with felt. After Niello processing the glazer removes the excess sludge on the silver surface and polishes the product.

Image 9: Glazer

2.2.9. Asbestos Sheet: Asbestos is a stone, which is resistant to high temperatures. Annealing and welding operations are performed on this stone.

Image 10: Asbestos Sheet

2.2.10. Sandpaper: Sandpaper is used for sanding the silver surfaces before Niello application. It prevents the slipping of the steel pen on the surface.

Image 11: Sandpaper

2.2.11. Forceps: Forceps are used to hold natural stones. They are also used to form the metal and for wire bending and welding.

Image 12: Forceps

2.2.12. Brushes: They are used to clean the surface oxide, which arises during the construction of welding.

Image 13: Brushes

2.2.13. Jeweler Milling: This machine performs operations such as punching, cutting, bending, forming, cleaning and polishing.

Image 14: Jeweler milling

2.2.14. Melting Pot: Melting pots are containers made from granite, ceramic or metal and are used to hold melted metals at high-temperatures.

Image 15: Melting pot

2.2.15. Iron mold: This tool is used to make melted metals into semi-finished metals.

Image 17: Micrometer

2.3. Motifs Used in Silver Niello Works Produced in Van

The motifs used in the silver Niello works produced in Van are quite varied. Some of these motifs are as follows: the Van Castle, Akdamar Church, Hosap Castle, Van cat, Van tulip, the symbol of King Haldi, gods of the Urartians, and the sign of Teisheba the god of peace. In addition, the designs used in Urartu ornaments and botanical, animal and geometric motifs found on the Akdamar castle walls are also used extensively in Niello works. The most common motifs used on Niello works are as follows.

2.3.1. The Motif of God Haldi: Haldi is the most important god of the Urartians. Haldi was the god of war who blessed the king when he went to war. It is believed that Haldi was originally the strongest god when the first Urartian state was established. Kings used to pray to Haldi in order to win wars. And if they won, they would praise the name of Haldi in their writings. Most Urartian buildings were built in the name of Haldi (Van Savat, 2018).

Image 18: The Motif of God Haldi (İHA,2018)

2.3.2. Tulip and Reverse Tulip Motif: Until the end of the 19th century, the endemic reverse tulip belonging to the Anatolian geography was accepted as a symbol of sadness in many religions and cultures and became the subject of legends. According to Christian traditions a reverse tulip began to grow where Mary's tears fell, who witnessed the crucifixion of the Prophet Jesus. According to Muslim beliefs, the neck of the reverse tulip is bent and the color is red due to the murders of Hasan and Hussein in Karbala and also lovers Ferhat and Şirin not being able to come together. The reverse tulip summarizes the legends of the great pain of Anatolia. The motif is common silver Niello works produced in Van (Van Savat, 2018).

Image 19: Tulip and Reverse Tulip Motif

2.3.3. Van Cat Motif; The Van cat, which has white silky fur, a long fluffy fox like tail, different colored eyes and a fascination for water, is species of cat found in Turkey. The Van cat is a rare creature that has not been hybridized. It is unknown when and how exactly the Van cat came to Anatolia. The cats have managed to adapt to the conditions of the Van region, which can include six months of snow a year. The Van cat, which is different from other cat species in that they love water and swimming, are frequently found in the silver Niello works produced in Van. (Van Savat, 2018).

Image 20: Van Cat Motif

2.3.4. The Pearl Mullet (the Van Fish) Motif: Due to the fact that it is the only species of fish to live in Lake Van and Ercek Lake located near Lake Van, the Pearl Mullet which is source of livelihood for approximately 15 thousand people living around Lake Van, has a different prescription for local people. The Pearl Mullets immigrate in April. This migration is regarded as one of nature's greatest wonders. After leaving its eggs in the hard grounds of the rivers, sticking them into the stones, it returns to Lake Van in late June. The Pearl Mullet is a symbol for the local people and is used on jewelry and gift items (Van Savat, 2018).

Image 21: The Pearl Mullet (Van Fish) necklace (Van Savat,2018).

2.4. Production Technique of Silverwork in Van

The art of Niello is widely practiced in Van. Various different techniques such as filigree, enamel, casting and nailing were also used in the past. Van, Sivas, Düzce, and Eskişehir are some of the cities where the art of Niello is practiced today.

Today, the art of Niello is only applied on silver surfaces, however in the past it was also applied on gold. Unfortunately, such items have not made it to this day. When the art of Niello is applied on gold, the measurement of the metals used in the mixture is the same as the mixture used for silver. The only difference between the two is that the metals applied onto silver surfaces consist of copper, silver, lead and sulfur while the metals applied onto gold surfaces consist of copper, gold, lead and sulfur. The metals used are same in amount. In order to mix the metals with the gold alloy, the content must be gold; otherwise, the copper and lead will not fully mix with the gold.

There are not many fixed measurements regarding the preparation of Niello paste. Most of the craftspeople use their own measurements. The following measurements are applied in some of the mixtures used for the Niello paste: 80 g copper and silver and 4 g lead or 40 g copper 3 g silver and 70 g lead or 16 g copper, 25 g silver and 110 g lead. More silver can be added into the alloy. Adding more grams of silver makes the Niello blacker and darker. Crystal case, which is gray-black Niello, is considered to be a high quality one.

The art of Niello can be applied onto different sterling silver. The best sterling silver to use in the art of Niello is 950-sterling, but today 925-sterling silver is commonly used. The art of Niello can be applied to any silver except for 950- 925- or 1000-sterling silver. If the sterling of the silver becomes higher, the amount of metal used in the alloy must be changed. The appropriate measure used today is 80g copper, 80g silver and 4g lead and is a suitable measurement for 925-sterling silver. This measurement generates 150g Niello. If one wants to work on 1000-sterling silver, s/he must change the measures, as 1000-sterling silver is quite a soft surface for Niello. A soft surface can be strained easily, which allows the Niello to spill. The alloy, which consists of copper, silver and lead is hard mixture. Mixing few metals make the alloy harder. This hard mixture should not be applied onto soft surfaces to prevent the Niello mixture from spilling. This is why the art of Niello must be applied to hard surfaces.

2.4.1. Stages of Applying the Art of Niello to Silver Jewelry Produced in Van

The preparation of a Niello paste is a long and challenging process. Burning sulfur is poisonous, which is why the preparation of the mixture is performed in open air. In the past, the interest in Niello products was greater than it is today. Due to the decrease in interest, the Niello mixture preparation processes are only carried out once or twice a year. The methods used today are the same as the ones used in the past. The methods are only different in terms of material. In past methods oak

charcoal was used, however today electric melting furnaces are used to keep the fires lit.

The steps to prepare Niello mixture are as follows, (1) a cotton swab is placed into an excavated pit, the sulfur is poured on this gland. The dissolved metals are poured in this pit. (2) The furnace is prepared and the fire is lit ready for melting. Copper is the first to be placed in the pot as it is the last to melt. When the cooper starts to melt, the other metals are placed into the pot. Silver is the next metal placed in pot and lead the last. Half a teaspoon of borax is added to the mixture, to accelerate the melting process and to be able to separate the mixture more easily in the amalgam. The boiling mixture are stirred from time to time with an iron bar. When the slags become fluid, the pot is moved to the full sulfur pit and is poured into the pit by shaking. The Niello slags start to burn with the sulfur and the craftsperson must move away from the pit. When the fire has been put out, the Niello pieces are taken and separated. The mixture needs to be burned one more time to get rid of any sulfur or mixture. When the second melted slag turns into fluid, it is poured into an iron mold and allowed to freeze. If there are any more Niello parts in the pit, they re-melted. If the Niello mixture is melted only once then only a small part of sulfur is melted, and the color of the Niello mixture never becomes black, instead it turns grey. Images 22, 23, 24, 25, 26 and 27 show the steps taken in the process of preparing Niello mixture.

Image 22: The melting pot and melting furnace

Image 23: Moving pot to the pit and pouring de boiling alloy in pit

Image 24: The pit with poisonous smoke and Niello alloy

Image 25: Obtained Niello and second melted process

Image 26: Pouring the melted Niello to the iron mold

Image 27: Frozen Niello

If the frozen Niello is nonporous and the color is gray-black, it means that the Niello mixture is good quality. Niello mixture must be prepared in open air due to it being toxic. The toxicity of preparing Niello has resulted in the craftspeople of this art to only live until the age of around 55. Due to the toxic effects and heavy winter conditions, Niello craftspeople in Van prepare enough mixture to last for almost a year at a time. Spring and summer are the best times to prepare the Niello mixture.

2.4.1. The Implementation of the Niello Techniques

There are three techniques used in the implementation of the art of Niello, which are Spreading, planting and embossment.

2.4.1.1. The Spreading Technique:

The first step of implementing the spreading technique is patterning the silver surface. Before patterning, the silver surface is sanded with fine sandpaper, so that the pattern can be drawn on the silver surface with pencil. Sanding the surface will also get rid of its slipperiness. The patterned silver product is then clamped, to make working on surface easier and prevent the surface from sliding. After carving the surface, it is time to apply the Niello.

Image 28: Patterning and Carving the silver surface

Next, the silver product is heated. The pulverized mixture is sprinkled on the engraved lines of the silver product. The silver product is heated one more time to let the pulverized mixture melt. During the melting process, the mixture settles into the lines and mixes with the Niello thoroughly.

Image 29: Pulverizing then Spreading the Nielloand after heating the silver

2.4.1.2. The Planting Niello Technique:

There are two types of applying the planting Niello technique. Frozen sludge must be pulverized, and the Niello is diluted with acacia-gum and turned into mud. The pattern canals are carved with steel pens, and then the silver plate is heated from top to bottom. After heating the silver, the sludge Niello is applied to the surface immediately. Thus, the canals are filled with heated Niello sludge. Niello cools then dries. After the leveling and polishing, the spreading Niello technique is completed. If it is not possible to obtain acacia-gum, quince seeds can be used for

the same purpose. The quince seeds must be kept on watered glass for a few days in refrigerator. After a few days, the seeds become jelly. Pulverized sludge can be mixed with this jelly.

Image 30: Pulverizing the Niello

Image 31: Dilute with acacia-gum

The second way to apply the planting technique does not require the Niello mixture to be pulverize. After freezing, the mud takes the iron mold's shape. The Niello mixture can be used as it is frozen. Sticks are heated on a patterned silver surface. The heated sticks melt on the surface and fill the engraved lines. Then, the whole surface of the silver product becomes black. The silver product is then polished and Niello mixture can be seen on the silver surface.

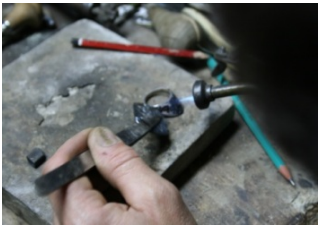

Image 32: Heating and melting the Niello

Image 33: Polishing

Image 34: Silver ring with Niello

2.4.1.3. Embossing Technique

The silver product's surface is patterned with a fine-tipped pen. One of the Niello techniques is chosen and applied to the surface of the silver product. The previously filled silver surface is refilled with Niello mixture and allowed to cool. Niello mixture is applied to the same surface for a second time. After applying the techniques, the product is then decorated using pencil work. This work is carried out following the polishing step. If the craftsperson needs this decoration, he/she can make this smaller and detailed decoration. This decoration shows a pattern more aesthetic and framed. After this step, the silver product is leveled and polished one final time. This is known as the embossment technique. This technique is generally used on amulets, necklaces, hairpins, hair ties, caps, bracelets, rings and belts and jewelry that are indispensable in Van.

Image 35: Embossment Niello

3. CONCLUSION:

Handcrafted products provide information regarding the economic, social and religious aspects of communities. Every handcrafted product has a certain character in relation to the region it is produced in and fulfills a symbolic or religious duty within the scope of that region's traditions and beliefs. Silver Niello work is among the livelihoods of locals living in the province of Van, Turkey. Carpet and rug weaving, sock knitting and embroidery are other handcrafts that are also practiced in Van. In the year 2017, a Geographical Indication was signed for silver jewelry with Niello work in Van, thus bringing silver Niello work into prominence and identifying Niello as a symbol of Van. In addition, with the Geographical Indication the qualities, characteristics and reputation of this art form are aimed to reach the desired level.

The art of Niello is not widely practiced today. Craftspeople are striving to keep Niello alive in Van. Due to being rich in mineral resources, the region is of great assistance in expanding the applications of the art of Niello. In order to improve the applications in the area and ensure the future of Niello, first existing craftspeople of the art must disseminate their knowledge, train new apprentices and contribute to the recognition, appreciation and development of this art form.

As the economic opportunities in the region are insufficient, the people of the region are turning to different income seeking. Demand for silver work remains low due to reasons such as low economic returns and limited tourism opportunities. Due to the inadequate sales opportunities craftspeople are unable to create a variety of products. For the continuity of this art encouragement of tourism and cultural activities, promotion of participation in national and international fairs are extremely important factors. Craftspeople should produce new designs without shifting from the

traditional values by using technology and be aware of the new designs and manufacturing facilities developing around the world. Turkey plays a very important role in ensuring the continuity of this art. In the city, necklaces are produced intensively in the Niello silver work. Trainings in design and pattern must be provided and opportunities for original jewelry designs should be created by using new Niello techniques. Creation and production of a rich variety of jewelry is also important in terms of creating demands.

With the help of various projects and courses supported by the local government, efforts are being made to revive silver Niello work. However, the number of trainees participating in these courses is less than expected and participants are dominantly male. Women should also be encouraged in learning about the art of Niello and practicing it as an important source of income for them.

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