

# NOTES ON CAMBODIAN GOLD AND SILVER CRAFT PRODUCTION<sup>1</sup>

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## **Introduction**

This article is concerned with the production of Cambodian gold and silver artifacts, and how these artifacts are used by the Khmer Royal Court, in religious ritual, and in daily life. In addition to a discussion of the history of gold and silver in Cambodia, there is a description of the traditional tools and techniques of gold and silver craftsmanship based on information from interviews with silver and goldsmiths living in the old capital of Oudong and near the Royal Palace in Phnom Penh. The images illustrating this article are from Wat Preah Keo Morokot (the “Silver Pagoda” inside Phnom Penh’s Royal Palace), the National Museum, and from private collections.

## **Gold and Silver in Southeast Asia**

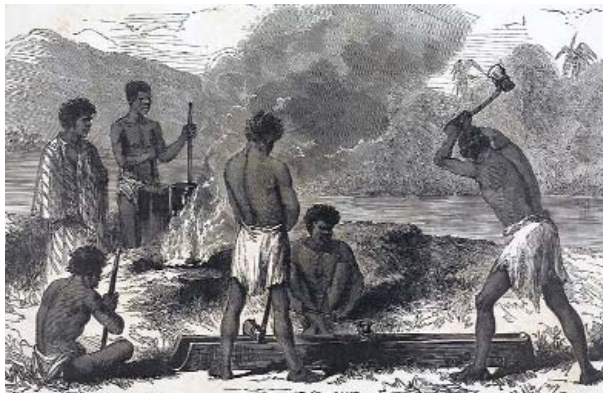
Gold and silver are prized for their beauty, but also because they can withstand corrosion due to temperature, smoke, and corrosion, and for their conductive ability (Naengnoi Punjabhan 2534 BE: 4). Pure gold and silver are found naturally in soil and rocks, and as an alloy. Gold and silver deposits are found throughout Southeast Asia in Laos, Sumatra, the Malay Peninsula, Kalimantan, Java, Vietnam, the Philippines and Thailand as well as in Cambodia.

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## Gold and Silver in Cambodia

Gold and silver have been mined and produced in Cambodia for centuries. The Khmer words for ‘gold’, *mās*, and ‘silver’, *prāk*, appear in the earliest inscriptions (Pou 1992: 322, 373 and Vickery 1998: 444-5). Cambodia’s natural mineral wealth and the history of its exploitation need further research, however sixteenth century Spanish and Portuguese texts make reference to sources of gold near Sisophon in Battambang province, in Kampong Thom province and at Bo Khan, Stung Treng province. In the eighteenth century, Alexander Hamilton, a Scottish sea captain visiting Cambodia, wrote in his journals that twenty-one karat gold was an important Cambodian commodity. Boulangier documented the smelting and metal working techniques used by the Kui minority group in the 1880s (Figures 1-2). In the 1950s and 1960s, the government constructed alluvial mines and smelting factories near Phnom Ji and Phnom Khieu in Kampong Thom. Recent geological surveys have found gold in the northwest at Bo Sup Trup near Banteay Chhmar in Oddar Meanchey province, in the central north near Rovieng in Preah Vihear province, and in the northeast in Rattanakiri province.



*Figure 1: Kui minority - metal forgers (Photo: Edgar Boulangier, 1887)*



*Figure 2: Kui minority - iron foundry (Photo: Edgar Boulangier, 1887)*

During the Iron Age, gold was used in the manufacture of jewelry. Golden beads, rings, and earrings have been found at archaeological sites such as Phum Snay in Banteay Meanchey (see also Richter 2000: 50, and Bunker and Latchford 2008: 432-474). (Figure 3). In the early centuries of the Common Era, the Khmer engaged in international trade using metal currencies; Roman gold and silver coins and jewelry have been found at the archaeological site of the important port and inland city of Angkor Borei, now Oc Eo, in modern-day Southern Vietnam (Malleret 1962). In the post-Angkorian period and modern periods, various Khmer Kings minted silver currency from pure Cambodian silver



*Figure 3: Bronze ring with applied gilding, Phum Snay village, Preah Neat Preah commune, Banteay Meanchey province*

(Figures 4-7). In addition to being used for jewelry and trade, gold and silver were important for ritual and religious activities. Two early examples are the seventh-century statue of Nandin made from cast silver of eighty-percent purity, found at Tuol Kuhea, Koh Thom district, and an eighth-century silver head of Vishnu from Sambor Prei Kuk.



*Figure 4: Fuang, Ang Duong period, 1847, minted in pure silver (Photo: Darryl Collins) (See from left to right)*

*Figure 5: Coin, Ang Duong period, 1853, minted in pure silver (Photo: Darryl Collins)*

*Figure 6: Coin, Norodom period, 1860, minted in pure silver (Photo: Darryl Collins)*

*Figure 7: Coronation medal, Sisowath period, 1906, minted in pure silver (Photo: Darryl Collins)*

During the Angkorian period, Cambodia’s silver-working tradition can be said to have reached its height. Gold and silversmiths manufactured beautiful artifacts for the Royal Court: weaponry, ceremonial objects, religious images, jewelry and coins and betel boxes. Betel boxes are containers used to hold the materials for betel chewing, an important social ritual in Cambodia and Southeast Asia (Rooney 1994). In Cambodia, betel boxes were often made from silver in the shape of animals or fruits. The earliest evidence for these animal-shaped vessels dates back to the eleventh century. Zhou Daguan (Chou Ta-Kuan), a Chinese envoy who spent a year at Angkor in A.D.1296-7, saw “girls carrying gilt and silver vessels from the palace and a whole galaxy of ornaments, of very special design, the uses of which were strange to me” (Matics 2002: 4-5). The Khmer king often gave these betel boxes to foreigners who visited him (Vincent 1873: 295; see also Knox 1880). Figure 8 illustrates a gift box made from native gold and silver stained with red, having the shape of a Cambodian pumpkin, the top of which was carved in a cluster of leaves. This tradition continued into the modern period: when Jacqueline Kennedy visited Cambodia in



*Figure 8: Pumpkin boxes worked in gold, similar to those offered by the king as gifts to foreigners who visited him in the late 19<sup>th</sup> century, Royal Palace, Phnom Penh*



*Figure 9: Gold and silver objects offered by the king as gifts to Jacqueline Kennedy at the Royal Palace, Phnom Penh (Photo: LIFE, 17 November 1967)*

1967, Norodom Sihanouk presented her with traditional Khmer artifacts made from gold and silver (Figure 9).

### **Gold and Silver Craft Workers and the Court**

In the past, the Royal Court was the primary consumer of gold and silver artifacts. When the King or the members of the Court rewarded their followers or entertained foreign visitors, they often gave gifts of silver or gold objects such as the betel boxes mentioned above. The Buddha images and ritual objects donated to Buddhist temples by the royal family were often made from precious metals. Some of these royal donations are still in use at wats such as Wat Unnalom; others can be seen in the National Museum (Figures 10-11). These artifacts were produced by the skilled craftsmen who lived and worked in and around the Royal Palace. A group of traditional silversmiths can still be found at Kampong Luong, a village located near Phnom Preah Reachtrop (Oudong), the site of the royal palace from the 15<sup>th</sup> to the 19<sup>th</sup> centuries. After King Norodom moved from Oudong to Phnom Penh in 1866, many craftsmen followed the court south and took up residence in the area surrounding the Royal Palace. In the past, these craftsmen worked exclusively for the Royal Palace and court. Today, in addition to working on royal commissions, Cambodian gold and silversmiths repair antiques and make souvenirs for the tourist trade and for export.



*Figure 10: Gold crown and sword for the king, Royal Palace, Phnom Penh (Photo: Darryl Collins)*



*Figure 11: Gold caskets holding golden scrolls on which are engraved the royal titles, Royal Palace, Phnom Penh*

## **The Silver Pagoda**

An important site for Khmer silver and gold is Wat Preah Keo Morokot, located in the grounds of the Royal Palace in Phnom Penh. This temple, known also as the “Silver Pagoda,” was built between the years 1892 and 1902. The name “Silver Pagoda” refers to the floor of the temple which is covered with 5,329 silver tiles weighing a total of 1,125 kilograms, all individually handcrafted by Khmer silversmiths (Jeldres and Chaijitvanit 1999: 34). According to the present Abbot of Wat Prah Keo Morokot, (interviewed 3 August 2007), the silver floor tiles were made at the same time as the construction of the original wat that was built in wood between 1892 and 1902. The silver tiles were laid in 1903. When the wat was renovated in 1962, the silver floor tiles were repaired.

In addition to the silver tiles, the temple holds a collection of 1,650 artifacts (mainly images of the Buddha) made from precious metals and gemstones donated by members of the Royal Family. Inside the main hall stands an image of the Buddha Maitreya, the ‘Buddha of the Future’. This statue is made of solid gold and weighs ninety kilograms. The statue is studded with 2,080 diamonds, the largest of which is located on the Buddha’s crown and weighs twenty-five karats. There are many display cases in the main hall where jewelry and silverware donated to the temple can be viewed; as well as artifacts, mostly of gold and silver used for religious ceremonies (Jeldres and Chaijitvanit 1999: 38, 39, 44).

## **Production of gold and silver during the modern period**

During the French colonial era (1864-1954) many changes took place in the training of artisans and the production of gold and silver artifacts (for more information on this change see Groslier 1926 and Muan 2001). (Figures 12-14). While the Royal Court continued to commission religious images and ritual objects, gold and silver craft workers also produced work that they could sell on the open market to tourists and overseas: silver boxes, jewelry, small animals and other souvenir items decorated with traditional designs of fruit and Angkor-inspired motifs. (Figures 15-16) By the late 1930s, more than six hundred silversmiths were employed filling orders from as far away as Egypt and South America (<http://www.metmuseum.org> and [Gold Review.com](http://GoldReview.com)). The change in scale of production led to the establishment of some factories and the adoption of mechanical techniques such as power tools. Despite these changes, the quality of Khmer silver and gold remained high: objects are typically made from ninety percent pure gold and silver, and hand tools and traditional techniques are used.



*Figure 12: Silversmith students, 1930s (Photo: National Archives of Cambodia)*



*Figure 13: Ecole des arts cambodgiens, silversmith, 1930 (Photo: National Museum of Cambodia)*



*Figure 14: Ecole des arts cambodgiens, goldsmith, 1930 (Photo: National Museum of Cambodia)*



*Figure 15: Small chickens, turtles, lions, pumpkins: silver animal boxes in the Royal Palace, Phnom Penh*



*Figure 16: Large pumpkin box worked in silver, Royal Palace, Phnom Penh*

### **Interviews with two artisans**

Interviews with two Cambodian artisans illustrate some of the changes that have taken place in Cambodian gold and silver production during the modern period. The first interview is with Guoy Jorn, a craftsman who lives in Bo Touch village, Kampong Luong district, Ponhea Leu commune, Kandal province (Figures 17-18).



*Figures 17-18: Mr. Guoy Jorn, silversmith, brass elephants and silver bird, Oudong, Kandal*

## *Notes on Cambodian Gold and Silver Craft Production*

*I am 49 years old and studied being an artisan in working brass from my father (who studied from my grandfather). Many other members of my family are also craft-persons and live nearby. This village has a continuous tradition of silverwork that dates back to the time the palace and court were at Oudong.*

*The origin of metals that I use now is the port of Singapore (as an import item) and the sellers supply the raw metal to me. The quality of silver now is not pure, but only 90% - the rest is brass. I believe the silver is imported, but the brass may be locally available.*

*In the past, the sellers told me that the silver came from China. The silver then was 100% pure.*

*I am trained to make all forms, from boxes and decorative animals to Buddha figures, but now the silver is very expensive, so I tend to use brass instead and it can be polished or silver-plated by the sellers.*

*In the past, because the silver came in various forms, I had to soften it for 20 minutes and shape it into sheets by using bellows and a hand-driven wooden fan to increase the temperature of the charcoal fire. Now I can also use a motor for the same purpose.*

*I either use a mold or beat the sheet by using iron forms depending on the size of the object; men usually made the principal form, while young women applied the decoration. Patterns were made both in a mold or by hand. Silver, brass or gold solders are used to join separate sections of figures using a foot-operated bellows.*

*Some figures require an inner support and I use a mixture of tree resin 10 parts, lime from shells 20 parts and fish oil 5 parts.*

*As for my work in the past, it was sold mainly to collectors in Thailand, the United States and Australia.*

*In 2004, a monk from Wat Prang, near our village commissioned a large silver Buddha sitting in meditation posture; it measures 1.1m knee to knee and is 1.5m in height. I also made a Buddha for Wat Damnak, Siem Reap.*

The second interview is with Suom Sinoeum, a silversmith who lives and works near the National Museum of Cambodia, Veal Men, Phnom Penh. Suom Sinoeum is 47 years old, and learned traditional skills from his father. Much of his work comes from commissions by the king, the royal family and court officials. He sometimes produces items for abbots or other high-ranking people and also repairs antique Buddha images. Some of his work can be seen in the Silver Pagoda. Figure 19, a silver, seated Buddha photographed in his studio in July 2007, is an example of his work.

*I believe in the north of ancient Cambodia there were supplies of gold, silver and iron; and in the colonial period silver was imported from France or Singapore. Silver from Cambodia was soft and shiny, and of good quality;*



*Figure 19: Mr. Sinoeum, Buddha silversmith near the National Museum, Phnom Penh*

*whereas silver from America was whitish and hard. Canadian silver was similar in color, but slightly softer than that from the US. French silver was similar in quality to that from Cambodia. In the Oudong period, Cambodia had silver deposits, especially in Rattanakiri.*

*In 1953, Norodom Sihanouk purchased a large quantity of silver to promote Cambodian craft products overseas. In partial exchange, France promised to find additional international markets. Thai and Lao metal workers also came to study Cambodian techniques.*

*At the royal court, utensils made of silver and gold could be readily remade by craft-workers. The preference for eating from gold and silver plates is explained by their purity.*

*Now silver is imported from China and Malaysia in preformed thin uniform sheets - from 1.5 to 8mm in thickness.*

*To melt pure silver, a temperature of 2,000° C is required; but when soldering silver, the temperature should be 1,700° C. Foot-operated bellows are used. I never use molds, every piece is hand-worked. Excellent iron tools are necessary for a craft-worker to make good silver objects. Some iron tools have shaped faces for stamping and punching decoration.*

*I am a qualified craftsman, so I am able to recreate the figure of Buddha when sections are damaged or missing. Items have come to me from Wat Unnalom or high-ranking officials. The mixture of resin and other materials used to support hollowware is called 'promor'. The materials are mixed together and placed inside the cavity. If diamonds are to be inset onto the head of the Buddha, the head cavity needs to be carefully filled with this mixture.*

*I can make all silver, gold and brass works - even less conventional forms that are sometimes requested as well as fine dining utensils for the court. I also make formal medals, decorations of rank and trophies.*

### **Techniques and Tools for Silverwork**

Cambodian craftsmen produce gold and silver artifacts using a variety of tools including crucibles, hammers, bellows, anvils, tools for punching perforations, sand molding tools, wire forming tools, scissors, pincers, stylus, and small and large circular carving tools. Patterns are carved into the metal using traditional



tools called *file iron*, *tattooed iron*, *decoration iron*, *circle iron*, *lotus iron*, *small hole iron*, *fish scales iron*, *naga scales*, and *unique iron*. Some of these tools can be bought in Phnom Penh; others must be imported.

Gold and silver are processed using various raw materials such as resin, fish oil, clay, acid mixed with water, and welding flux. First the metal is smelted over a charcoal fire. The molten metal is poured into molds, or flattened and smoothed into thin strips. Silver holloware is decorated using resin mixed with clay and fish oil. This material is placed onto a silver base and then decorated with tools. When the decoration is complete, the resin is removed by heating and abrasion. The final carving is then cleaned with acid and water, and the silver is sun-dried, which protects it from corrosion. In the past, all work was done by hand. Today, power tools are often used to smooth the surface of the silver.

## **Conclusions**

Gold and silver artifacts have been found at archaeological sites in Cambodia that date back to the Iron Age. The words for “silver” and then “gold” appear in the earliest Khmer inscriptions. During the Angkor period, gold and silver artifacts were commissioned by the King and the royal court and donated to temples, or given as gifts. Some of these artifacts survive today in museums and private collections, and show that the crafting of metal reached a very high standard during this period. The production of silver and gold artifacts for religious and ritual purposes and for the consumption of the Court has continued into the present day. Under the French, changes were made to traditional methods of training craftsmen and to the methods of production of gold and silver artifacts. Today, in addition to the traditional religious and ritual items commissioned by the Royal Court, gold and silversmiths produce luxury items (jewelry, souvenirs, etc.) that are sold on the open market.

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**សង្ខេប**

*Notes on Cambodian Gold and Silver Craft Production*

អត្ថបទនេះនិយាយអំពីវត្ថុធ្វើពីមាសនិងប្រាក់ក្នុងមជ្ឈដ្ឋានរាំងខ្មែរដែលគេប្រើប្រាស់ប្រចាំថ្ងៃជង ព្រមទាំងប្រើប្រាស់ក្នុងពិធីនានាផង។ ក្រៅពីវែកញែកអំពីប្រវត្តិនៃមាសនិងប្រាក់នៅកម្ពុជា អត្ថបទនេះមានបរិយាយពីឧបករណ៍ផ្សេងៗ និង បច្ចេកទេសធ្វើគ្រឿងមាសប្រាក់ ដោយផ្អែកលើព័ត៌មានបានមកពីបទសម្ភាសន៍ជាមួយជាងទងបច្ចុប្បន្ន។

**Abstract**

*Notes on Cambodian Gold and Silver Craft Production*

This article concerns the production of Cambodian gold and silver artifacts, and how these artifacts are used by the Khmer Royal Court, in religious ritual, and in daily life. In addition to a discussion of the history of gold and silver in Cambodia, there is a description of traditional tools and techniques of gold and silver craftsmanship based on information from interviews with contemporary silver and goldsmiths.

**Résumé**

*Notes on Cambodian Gold and Silver Craft Production*

Cet article traite de la production cambodgienne des articles en or et en argent et leur utilisation à la cour royale khmère, tant dans la vie quotidienne que dans le rituel. En dehors de la discussion sur l'histoire de l'or et de l'argent au Cambodge, il donne la description des instruments traditionnels ainsi que les techniques utilisées dans l'orfèvrerie d'or et d'argent, basée sur les informations provenant des interviews avec des artisans contemporains.