

Dawn F. Rooney
Independent Researcher

Introduction

Angkorian ceramics are less renowned than the architecture and sculpture of Angkor and they did not evolve with such spiritedness, yet they are an artistic expression of the same culture and period. The disparity in knowledge is partly due to a time gap in research. Architecture and sculpture were systematically studied for over seventy-five years by the Ecole Française d'Extrême-Orient, whereas ceramics were barely known until twenty-five years ago. Although they were found in the vicinity of the temples at Angkor in the first half of this century, the immensity of the task of clearing and restoring the monuments prevented their retrieval and study. The first confirmation of a production site for glazed Khmer ceramics, paradoxically, was made in Thailand, rather than Cambodia. Awareness of the scope of Angkorian ceramics came to light in the mid-1980s when the Archaeology Division of the Fine Arts Department of Thailand identified hundreds of kilns on the Khorat Plateau in Northeastern Thailand, an area that was part of the Khmer Empire between the 11th and 13th centuries.

These finds combined with other sources enabled scholars to study the technical and stylistic aspects of Angkorian ceramics. Nearly twenty years ago, before these finds, an exhibition of Khmer ceramics in Singapore was the occasion for a first sustained consideration of uses of Khmer ceramics (Groslier 1981; Rooney 1981). This paper takes a new look at the role of Khmer ceramics in society during the Angkor Period (802-1432 A.D.). More information is available than ever before and it seems an appropriate time to bring in to balance the research between function and technology.

Between the 1970s and 1990s, research was limited to Khmer evidence in Thailand, as Cambodia was closed due to civil war. The reopening of Cambodia in 1991, the discovery of kilns near Angkor in 1995, and access to the proposed kiln site of the Kulen, northeast of Angkor, in 1999, enabled firsthand observations of the types and of the potting and kiln technology of ceramics at Angkor. Even though archaeological field research on ceramics is in the initial stages, it is possible, for the first time, to compare evidence from Thailand and Cambodia, where known kiln centers were located during the Angkor Period.

The production of ceramics was not affected by stylistic or economic demands from foreign markets because it is unlikely that they were exported. The few pieces found outside the boundaries of the Khmer Empire, the absence of any significant evolution in kiln or potting technology, and the production of the same forms over a long period substantiate that ceramics were made primarily for the Khmer state and the population. They were, however, traded within the Khmer Empire and a study of their distribution to determine regional trading patterns would add another dimension to our understanding.

For this study, forms were classified into three groups based on function and surface treatment: 1) architectural objects; 2) containers for utilitarian, royal, and ceremonial purposes (unglazed and glazed

stoneware); and 3) containers for preparing, cooking, and storing food and liquids (unglazed earthenware). Then the groups were looked at within three areas where they were most likely used: the temple, the palace and the village. The study concludes with a consideration of possible uses of ceramics in various ancient rites of passage.

This paper focuses on the Angkor Period but pots were made in Cambodia since ancient times. Unglazed earthenware vessels with cord-marked, combed, and carved designs were found in Battambang Province dating to 6,000 years ago (Carbonnel 1979: 223-26). Field work at Angkor Borei in Takeo Province, southern Cambodia, conducted by the University of Hawai'i/East-West Center and the Royal University of Fine Arts in Phnom Penh in 1995 and 1996, yielded unglazed fine-orange earthenware dating from around the 3rd century B.C. to the 1st century A.D. and fine-buff earthenware from the 5th to 8th centuries (Stark, Griffin, Chuch Phoeurn, et al. 1999: 27-29¹). The main output of pottery produced between the end of the 6th and the end of the 8th centuries was unglazed earthenware vessels inspired by metal and pottery forms from India and used in rituals associated with Hindu cults. Excavations at the seventh century pre-Angkor temple of Sambor Prei Kuk yielded quantities of this type of ware (Groslier 1981: 14-15).

The appearance of glazed stoneware in the ninth century coincides with the beginning of the Angkor Period. The duration of ceramic production at Angkor is problematic and requires further fieldwork at the kiln sites, whereas the present evidence from the Khmer kilns in Northeastern Thailand suggests that they were operating between the tenth and fourteenth centuries (Chandavij 1990: 242). The theory put forth that the production of Khmer ceramics decreased in the middle of the tenth century onwards as the number of Chinese ceramics imported increased was based on excavations at the Royal Palace and included mainly glazed forms for royal and ceremonial use but did not take into account the continuing demand for architectural objects, glazed containers, and unglazed utilitarian vessels for use outside the Royal Palace.

Sources

Over 1,200 stone inscriptions written in Sanskrit and Khmer found within the boundaries of the former empire provide some details relevant to this study. The craft of potting is mentioned, even though the inscriptions offer no insight into the role of ceramics. When the date of the laying of a building stone of a temple is given or when the date a temple was consecrated is identified, it provides a secure date for ceramics retrieved from that temple. Since some Khmer ceramic forms bear a resemblance to a metal prototype, inscriptions are helpful because they often identify the material, such as gold, silver, copper, or bronze, and the form such as a pot, pitcher, or vase. Names of vessels in the inscriptions, however, must be used with caution because translators may have interpreted descriptions of shapes differently.

Carvings in stone on the temples reveal many forms of vessels and their function in ceremonies and rituals associated with the temple and have shed new light on the cultural role of vessels in Khmer society. The Bayon, a Mahayana Buddhist temple built between the late 12th and early 13th centuries, has two galleries of carvings depicting vessels in a ritualistic context and also many scenes with utilitarian vessels

¹ See also M. Stark, "Pre-Angkor Earthenware Ceramics from Cambodia's Mekong Delta" in the present volume.

used in daily life. Observation of modern life style in rural areas of Cambodia, particularly in comparison with the Bayon reliefs, gives some idea as to ancient methods of cooking, foods and food presentation, and betel chewing, demonstrating that traditions have undergone little change throughout time.

One first-hand account of observations on daily life at Angkor is extant and provides several useful descriptions on the function of ceramics in Khmer society. Zhou Daguan (Chou Ta-Kuan) lived at Angkor for nearly a year between 1296 and 1297 A.D. serving as an assistant to the Chinese ambassador sent to Angkor by the Mongol Emperor Temur, grandson of Kubalai Khan, shortly after his succession as emperor. Zhou Daguan was a keen observer of people and customs and recorded the details assiduously in his journal. He lived with a family in a village outside the royal enclosure and recorded numerous details about daily life, naming vessels and methods of cooking. Though some of the information he recorded may reflect hearsay and a particular Chinese perspective, Zhou Daguan's journal proves invaluable as the singular self-conscious description of daily life at Angkor.

In addition to these primary sources, a number of scholarly studies of Khmer ceramics constitute an important body of secondary source material. One report on ceramics excavated in a religious or royal context has been particularly useful for tracking preference and function in Khmer society. Prasat Ban Phluang in Surin Province, Northeastern Thailand, an 11th-century Khmer temple, yielded over 4,000 shards from which at least 270 vessels were reconstructed (Childress and Brown 1978: 67-73). Two reports (in English) by Thai archaeologists who worked on the excavation of kilns in Northeastern Thailand identify the types of ceramics from that area (Khwanyuen 1985: 137-68; Srisuchat 1989: 52-60).

Ceramics have been retrieved in controlled excavations from several sites at Angkor. Excavations at the Royal Palace in Angkor Thom between the 1950s and the 1960s produced Chinese, Thai, and Khmer ceramics, providing comparative wares. The Ecole Française d'Extrême-Orient conducted another excavation in an area of the Royal Palace in 1998 that yielded over 5,000 Chinese shards and 60 Southeast Asian shards, from the Sukhothai kilns in Thailand and a few fragments from Vietnam (Dupoizat 20-22 September 1999). The Khmer ceramics are presently being catalogued and studied.² Over a hundred whole ceramic vessels were found in burials excavated in the 1950s and the 1960s near Srah Srang ('the royal bath') at Angkor. Polish archaeologists retrieved ceramics from an area around the Bayon temple in the 1980s (Borowski 1991). An area near Prasat Suor Proat towers, east of the Royal Palace, was surveyed by a Japanese team in 1994-1995. Test excavations produced Chinese and Khmer ceramics (Japanese Government Team for Safeguarding Angkor 1995).³

Kiln sites in Cambodia have provided the latest source for ceramic research. Phnom Kulen, some forty kilometers northeast of Angkor, was identified as a kiln site by Etienne Aymonier in 1883 but it has never been excavated and, until recently, no archaeological surveys had ever been conducted. The area was inaccessible to researchers until mid-1999 when Kulen was again declared a national park. It is now possible to visit the Kulen kiln area, which is located near the village of Anlong Thom on top of one peak where numerous mounds covered with surface shards, kiln discards and near whole pieces are found. Another kiln site, Tani, approximately twenty kilometers northeast of the central Angkor complex and near the Roluos River, was reported to scientific and governmental authorities in 1995 (Kishira 1995). Two

² See M. Franiatte's article included in the present volume.

³ Preliminary results of subsequent excavations by this same team at the Bayon temple are presented in a report by Naho Shimizu included in the present volume.

Japanese archaeological teams, in collaboration with the APSARA Authority, the Khmer national organization responsible for the management of Angkor, have since surveyed and mapped the Tani kiln site, identified kiln mounds and carried out excavations. This work is on-going.⁴ At least four other kiln areas have been surveyed and await further investigation.

Finally, Bernard-Philippe Groslier, former Director of Archaeology at Angkor for the *Ecole Française d'Extrême-Orient*, published his findings on Khmer ceramics from over twenty years of archaeological research at Angkor (Groslier 1981: 9-39).

The Temple

Angkor was a divine universe where religion, society, economy, and art were inseparable and the temple, as the symbolic link between man and the gods, was the center of this cycle. It housed an image of the divinity that embodied the power of the ruler. This divine relationship between the ruler and the divinity insured harmony and prosperity at Angkor and perpetuity of the kingdom. Thus, the temple was the most important structure in Khmer society. Each king built his own temple and others dedicated to his ancestors. As the power and control of the kingdom expanded, more temples were built in outlying areas far from the capital. Ceramic architectural objects, particularly tiles and finials, were made for the temples. The demand must have been especially extensive during the reign of Jayavarman VII (1181 - c. 1218) who undertook a massive building program to manifest his power and to solidify the empire. French architect and scholar Jacques Dumarçay proposed that kilns making glazed tiles were located near construction sites to meet the demand and to facilitate transporting the required quantity (Dumarçay 1973: 8).

Khmer architectural tiles found at the capital of Hariharalaya (the 'abode of Hari-Hara', present-day Roluos) dating to the reign of Indravarman I (r. 877 - 889) are the earliest known glazed wares produced in the region. Inscriptions on the doorframes of the temples of Preah Ko, Bakong, and Lolei give the dates of the consecration of the temples and thus provide a secure date for the ceramics. Surface finds at the Kulen kiln site, northeast of Angkor, suggest that architectural objects were a major output of the kilns. Even today, the grounds of temples at Angkor such as Banteay Prei Monti, Ta Nei, Preah Pithu, and Phimeanakas are littered with shards of tiles.

The most common form of roof tile at Angkor is rectangular with a curved profile and a knob on the underside for affixing the tile to the basic structure. The average length is twenty centimeters (figure 1).⁵ This tile is totally different in clay, form, glazing, and firing from the pre-Angkor style of tile, which was unglazed and flat with a tenon. Groslier suggested that the earlier tile was close to Indian models and the new form was similar to Chinese tiles (Groslier 1981: 20). An eave tile fitted on to the edge of a beam is rectangular and curved with a u-shaped section affixed on the end at a right angle. Carved sets of vertical lines and a stylized flame border decorate the face of the tile (figure 2). Surface shards of this form are abundant at the Kulen kiln site. Stone examples of these two types of tiles can be seen on the roof of the second level at Angkor Vat temple (figure 3).

⁴ See article by Ea Darith and field reports by Nara/APSARA and Sophia University included in the present volume.

⁵ For a more detailed discussion of roof tiles, see J. Dumarçay's article in the present volume.



Figure 1. Green glazed rectangular roof tile; l. 19 cm. Thnal Mrec, Phnom Kulen.



Figure 2. Green glazed ridge tile; l. 19 cm; ht. 14 cm. From Cambodia. Private Collection, Bangkok.

A green glazed ceramic ridge finial is another prolific form at the Kulen (figure 4). The profile tapers gracefully to a point, giving the appearance of a lotus bud. The lower section is constricted, slightly concave, and elongated with carved bands. Finials were placed in a horizontal row across the central ridge of the roof as seen in stone at the twelfth century temple of Banteay Samre, northeast of Angkor. Two glazed finials of this type were excavated at Prasat Ban Phluang temple in Northeastern Thailand (Childress and Brown 1978: 67-73).

A two-colour glazed image of the Hindu god Shiva in his benevolent form is unique. This image, of unknown provenance, is attached to what appears to be an architectural form. The finely worked green glazed facial features include almond-shaped eyes, a hint of a moustache, a subtle smile, and Shiva's characteristic third eye in the middle of his forehead. A band enclosing his stylized coiled tresses may represent



Figure 3. Angkor Wat, second level, roof and ridge tiles, 12th century.



Figure 4. Green glazed finial at Kulen kiln site; ht. 19 cm. Thnal Mrec, Phnom Kulen.



Figure 5. Head of Shiva, green glazed with brown glazed highlights; ht. 12 cm. Provenance unknown. Private Collection, Bangkok.

the crescent moon usually present in Shiva's hair and a dark brown halo frames the face (figure 5).

Stone and bronze images of Hindu gods and the Buddha are amongst the Khmer's finest artistic endeavors. A few small glazed ceramic examples have been found and testify that potters attempted to make freestanding images, but the poor quality reflects the unsuitability of the material to the form. Perhaps they were images for worship in private altars or shrines, or cult objects for the many small ceremonies that took place daily in the temples throughout the empire. The identity of a damaged male image with traces of dark brown glaze is impossible to determine because the arms and head are missing. He stands in a frontal position and the ridge around his hips is part of a *sampot*, the typical garment of male deities in Khmer art.⁶ A brown glazed image in the collection of the Art Gallery of South Australia captures a specific event in the Buddha's life when he was meditating at Bodhgaya in India. A torrential storm arose and the serpent king Muchilinda coiled his body to make a chair and lifted the Buddha off the ground. The serpent then spread the hoods of his multiple heads to form an umbrella and protect the Buddha from the rain. Images depicting this event were popular in the Mahayana Buddhist cult at Angkor in the late 12th

and early 13th centuries, and were beautifully rendered in stone and bronze.⁷ The ceramic example has seven serpent heads spread like a fan above the Buddha, the typical protuberance on the head (*uṣṇīṣa*), and extended earlobes. Some inconsistencies, however, appear in this image. The Buddha sits with his palms in his lap, facing upwards, but one is not on top of the other. His left leg is on top of his right, whereas in other mediums the legs are reversed. The ceramic image is wearing a necklace, arm bands, and wristbands, similar to jewelry worn by Hindu gods.⁸

Except architectural forms, ceramics for temple use are strongly influenced by metal shapes. John Guy has argued convincingly that metal vessels of Indian origin or derivation are a key to explaining some of the Khmer forms (Guy 1996-97: 44). Groslier suggested that Khmer potters tried to reproduce the tones of silver in their green-glazed wares and that the large brown vessels emulated gilded bronze (Groslier 1981: 26). References to gold and silver vessels in the inscriptions confirm that metal was the preferred material for offerings to gods and for vessels used in rituals and ceremonies. Kings traditionally made donations of gold and silver vessels to the temples. Suryavarman I (c. 1002-1050 A.D.), for example, installed some golden images and donated bowls, plates, flasks, vases and jars made of gold or silver to the temple of Ta Keo (Majumdar 1953: 351-52).

Extensive requirements and limited availability of metals near Angkor may have made it difficult to meet the demand for metal. The similarities in form between metal and glazed ceramics suggest that fired

⁶ See Fujiwara 1990: 105, Pl. 126.

⁷ See Brand and Chuch Phoeurn 1992: 85.

⁸ See Richards 1995: 175, Pl. 138.



Figure 6

Brown glazed jar with a tall neck, broad shoulder, mouth with a flange, and a pedestal base; ht. 22 cm.

From Northeastern Thailand. Private Collection, Bangkok.



Figure 7

Bayon, outer gallery bas reliefs, kendi; late 12th - early 13th centuries.

clay may have been substituted for metal when the supply was low or depleted. Support for this theory is found in a comparison of ceramic vessel forms with those depicted in a ceremonial or ritual context on reliefs at the temples. Although it is not possible to identify the material of the vessels on the reliefs, it was probably metal based on the numerous references to gold, silver, copper, or bronze ritual vessels in the inscriptions.

A stately brown glazed jar with a round body, tubular neck, a flaring mouth with a flange, and a pedestal base is a distinctive Khmer vessel that has no known prototype in other Southeast Asian ceramic traditions (figure 6).⁹ It was found at kiln sites in Northeastern Thailand and excavated at Prasat Ban Phluang in Thailand and at Phimeanakas and in burials at Angkor. The jar, with an angular profile and carved flanges, was clearly inspired by a metal form. Discards at kiln sites of this type of jar, sometimes called "baluster vases," testify to the difficulty of producing it in fired clay. Its statuesque appearance would make it an appropriate container for flowers on an altar or shrine, or for ritual emblems such as peacock feathers in Angkorian ceremonies.

The *kendi*, a drinking vessel, is depicted in a ritual context and for royal use on reliefs at the Bayon, and similar forms have been found in bronze and glazed ceramics. The form has a long tradition in Southeast Asia and has been found at Angkor Borei and other early Indian-influenced sites in Cambodia (Stark et al. 1999: 28). A *kendi* has a round body, a flat base and two openings - a straight neck and a spout on the shoulder (figure 7). It does not have a handle, even though it is used for pouring. Liquid is poured in at the neck and out from the spout. A scene at the Bayon depicts a donor holding a *kendi* close to his body in a gesture of respect made when presenting objects to kings and confirms the use of this form as an offering or ceremonial vessel.

⁹ See Honda and Shimazu 1997: 73, Pl. 32.

To make a donation to a temple or a divinity in the form of food, animals, land, vessels, or metal objects was a privilege that earned merit for the donor. Two forms mentioned in inscriptions as offerings, a dish and a bell, have known ceramic counterparts. A glazed stem dish with a foliate rim and a corresponding form on a relief at the Bayon fits the description of a metal *dipa* ('butter lamp') used to burn ghee, or clarified butter.¹⁰ The use of ghee as a ritual offering is supported by an inscription mentioning an order from a king for a supply of clarified butter for a divinity (Majumdar 1953: 587, no. 101a). Although Khmer potters made at least two types of glazed bells copied from metal prototypes, the form was not successful in fired clay. One bell is rectangular with small holes across the top.¹¹ The other one is a round form with a ring at the top and a slit on the bottom. This form resembles the type of bell worn by the white bull Nandi ('the Happy One'), the mount of Shiva.¹²

References to the conch in inscriptions affirm its sacred place in rituals and ceremonies at the temples. The Khmers made bronze models of a natural conch shell of extraordinary beauty and embellished them with symbols befitting a sacred object.¹³ Some fine ceramic interpretations of the conch have been found, even though producing this form in fired clay must have challenged the potter. The ceramic version is heavy and thickly potted. A sound can often be emitted from some of the ceramic models by blowing through the end. A conch is usually glazed all over except a small unglazed portion on the base to rest it on the earthen floor of the kiln for firing. Traces of grit from the floor accidentally absorbed by the glaze are found on the base.¹⁴ One such ceramic conch was excavated at the east entrance of the central sanctuary of Prasat Ban Phluang (Childress 1976: 27). A ceramic conch with a cavity for use as a container for lustral water is also known.¹⁵

A green glazed conch in the Art Gallery of Australia in Adelaide adheres closely to the bronze form.¹⁶ The end of the conch is delicately decorated with a naga (a serpent with semi-divine status who lives in the water), a lotus petal, and the head of Garuda, the mount of the Hindu god Vishnu, who spews a serpent from his beak.

In many Khmer bronze and stone images, the Hindu god Vishnu has four arms and holds a conch in his upper left hand but it differs from the natural conch shell in that the tapered channel is replaced with a split fish tail. This form was also made in glazed ceramics (figure 8).



Figure 8. Brown glazed conch with a fish tail, similar to the attribute of Vishnu; l. 20 cm. From Northeastern Thailand. Private Collection, Bangkok.

¹⁰ See Mikami 1984: fig. 16.

¹¹ See Fujiwara 199: 107, Plate 131.

¹² See Brand and Chuch Phoeurn 1992: 37.

¹³ See Brand and Chuch Phoeurn 1992: 105.

¹⁴ See Rooney 1984: 202, Plate 62; Brown 1988: Plate 25b; Fujiwara 1990: 98, Plate 114.

¹⁵ See Rooney 1984: 205, Plate 65.

¹⁶ See Richards 1995: 176, Plate 141.

The Palace

Ceramics excavated from the royal residence enclosed within the city of Angkor Thom under the reign of Jayavarman VII clarify ceramic forms and their functions for royal use. Though little is known about ancient residential patterns, the area inside the city is thought to have comprised the Palace, as well as houses of princes, priests, military officials and those in the service of the king. The eastern side of the Palace, in front of the wall, was faced with a stone terrace that extended over three hundred meters and was carved with life-size elephants in a hunting scene. According to Zhou Daguan, the king appeared for audiences, to review his military troops, and for processions and festivals in a gilded palanquin on this terrace (Zhou Daguan 1993: 73). The central stairway leading from the ground to the terrace was most probably reserved for the king and is carved with majestic lions and garudas standing with upraised arms to support the stairway.

Within the Palace compound were the wooden residences of the king and other royalty, which have perished. The royal enclosure also included a private temple for the king and two stone bathing ponds. Although Zhou Daguan was never allowed inside the Palace, he wrote that some of the buildings were covered with yellow pottery tiles and that the family temple and the main hall of dwellings of princes and holders of high office were also covered with tiles (Zhou Daguan 1993: 2).

A preponderance of Chinese ceramics was found within the Royal Palace area. Khmer and other Southeast Asian wares comprised smaller amounts. The finds revealed that the Khmer forms found at the palace were different from the Chinese ones, which suggests their purpose was also different. It can be assumed that Chinese porcelain, such as white *Ying-ting* and celadons, was preferred for ornamentation and for serving and eating food; Khmer glazed stoneware vessels served as containers for religious rituals, alongside or in substitution of metal vessels; and unglazed earthenware containers were used in the kitchen for preparing and cooking food.

The Village

The majority of the Khmer population were farmers who lived in villages clustered near a source of water, either the Tonle Sap (often called the 'Great Lake' in English) or a river flowing from the Kulen Mountains on to the Angkor plain. An unchanging annual weather cycle of two equal seasons alternating between rain and drought more or less dictated the farming pattern. We can assume that women tilled the fields, and took care of the house and family. Men mainly worked as builders of the temples and served as soldiers in battle when necessary. Older children either helped in the fields or stayed at home and looked after the younger children. Ceramics were probably made only part of the year during the slack season in the farming cycle when the rice was ripening.

Unglazed and brown glazed jars are thought to have been used to conserve water for drinking, cooking, washing, and bathing, which was particularly vital during the dry season. They would have stood on the ground outside the house near cooking and washing areas. The form shows little variation in shape or decoration throughout production. It is typically a tall, heavily potted jar with walls built up from coils, a flat base, slightly flaring walls, a broad shoulder and a mouth opening with a rim and a flange. The absence of a neck, or, if present, an extremely short one, distinguishes a Khmer storage jar (figure 9).

With Zhou Daguan's descriptions, Angkorian period bas-reliefs and observation of modern times, we can reconstitute the basic village living situation with relative certainty. A typical family house in the village was a single story structure built of wood or bamboo with a thatched roof of palm leaves. Stilts elevated the house off the ground and wooden stairs accessed the living quarters where the family slept and ate their meals. Reed-woven mats placed on the floor were used for eating and sleeping. The earthen floor beneath the house was a cool, shady area where men relaxed and children were rocked to sleep in hammocks during the heat of the day, weavers and potters crafted their wares, and oxen, water buffaloes, chickens, pigs and other domestic animals took shelter at night.

Food was prepared outside, but near, the house. A stove for cooking food and liquids, as described by Zhou Daguan, presumably of the type used in the house where he lived, consisted of three stones evenly spaced in a circle and buried in the ground. A fire was built inside and cooking pots rested on the stones above the fire (Zhou Daguan 1993: 59). Domestic scenes carved in relief on the Bayon temple show another type of stove used by the Khmers for cooking food that was probably unglazed earthenware. A flat circular base supports a wide thick ring and a fire was built in the hollow interior. Sturdy prongs evenly spaced around the mouth of the ring elevate the cooking vessel above the fire (figure 10). Different sizes of stoves accommodated the various forms of cooking vessels. This type of stove was adequate for cooking food such as rice, fish and game and for heating liquids for sauces and soups as long as the heat was adequate.

A meal for a Khmer farmer depended on availability of ingredients and the occasion. The choice of food and its preparation was probably similar to that in the region today. Rice, fermented fish paste or dried fish and soup is a typical meal. Cooking vessels are unglazed earthenware pots with a round bottom. The size of the pot depends on the contents. Rice, for example, is cooked in a pot with a narrow opening at the mouth to retain heat for steaming, whereas soup is made in a basin with a wide opening. A small pot with a round body, a short neck for holding and pouring, and a narrow mouth is used as a container for sauces and condiments.

Serving receptacles could have been made from bamboo or banana leaves and food eaten with the fingers. Individual earthenware bowls could have been used for rinsing the fingers after eating. Serving spoons and drinking containers were made from available materials such as coconut shell or sugar cane bark.

We can suppose that the tradition of chewing betel was widespread amongst the ancient Khmers.



Figure 9

Brown glazed jar for storing liquids; ht. 59 cm. From Northeastern Thailand. Private Collection, Bangkok.



Figure 10. Bayon, outer gallery bas-reliefs, stoves and cooking vessels; late 12th - early 13th centuries.



Figure 11. Green glazed lime container in the form of a bird; used for chewing betel; diam. 10 cm. From Northeastern Thailand. Private Collection, Bangkok.



Figure 12. Green glazed lime container in the form of an elephant; used for betel offerings; ht. 17 cm. From Northeastern Thailand. Private Collection, Bangkok.

The custom would have been especially popular in agrarian areas but also enjoyed by royalty and the elite. Even today, female Buddhist nuns dressed in white robes with shaved heads and red-mouthed smiles are a common sight at the temples of Angkor. The basic contents of a quid are betel leaf, areca nut, and lime, ingredients that were indigenous to the area. Lime, for example, was obtained from the mountainous region near Angkor. Other ingredients are added according to availability and preference.

Lime is ground to a powder and mixed with water to a paste-like consistency suitable for spreading on a betel leaf and then stored in a separate container. This is the only ceramic form associated with the custom of chewing betel that has been found. Quantities of glazed pots with traces of calcified lime on the interior vouch for their use as containers for the custom of betel chewing. It is unlikely that this form was unique to the kilns in Thailand as previously believed, because green glazed and brown glazed lime pots and shards have been found at the Royal Palace at Angkor and at the Tani kiln site.

A Khmer lime container is a small green glazed or brown glazed globular pot embellished with appendages and incising to emulate an animal. The most common form looks like a bird with appendages in the form of a beak, tail, and eyes. Incised lines highlight the eyes and delineate wings on the shoulder. Birds were abundant at Angkor, as noted by Zhou Daguan who identified over twelve species, and thus were well known to the potters (figure 11).¹⁷ A lime container in the form of an elephant was also popular. A few exceptional glazed elephant lime containers have been found. Because of the importance of the elephant in daily life and in battle and because of the reverence attributed to it in Hindu and Buddhist iconography, it seems likely that these fine examples were for ceremonial use. A naturalistically rendered elephant stands on short legs and is bedecked with an elaborate harness and a chair atop a blanket with tassels (figure 12).¹⁸

The rhythm of the agrarian cycle in Cambodia is broken by festivals, which center on spirits,

¹⁷ See Rooney 1984: 135-8; 162-64.

¹⁸ See Fujiwara 1990: 84, Plate 90.

changing seasons, and auspicious occasions. The grandest one is the arrival of the New Year that takes place on the night of the full moon in April. In ancient times, the New Year is thought to have been celebrated at another time of the agrarian cycle. According to Zhou Dagan, torches lit the Royal Square and firecrackers frightened away any remaining bad spirits lurking about. Villagers made their way to the Royal Square where they waited for the king to appear in his gilded pavilion on the stone terrace in front of the Palace. An orchestra sat nearby on straw mats woven of bamboo leaves playing tambourines, bells, drums, cymbals, harps, xylophones and stringed instruments. Games and spectacles filled the Royal Square with jugglers, acrobats and cock and pig fights. Fermented drinks made from rice, honey, sugarcane or a *pangyassu* leaf were festival favorites (Zhou Dagan 1993: 29). On one relief of the Bayon we see two men drinking through reeds from a tall jar with a flat base, curved profile and cover (figure 13).



Figure 13. Bayon, outer gallery, men sipping a fermented drink with straws from a jar; late 12th - early 13th centuries.

Rites of Passage

Although evidence of the use of ceramics associated with rites of passage during the Angkor period is limited, increasing archaeological finds bring to light more information on this aspect of ceramic use. Following are preliminary considerations of vessels which may have been used in ancient rites of passage, notably as mentioned by Zhou Dagan.

Worship of the spirits predated the formalized religions of Hinduism and Buddhism from India that penetrated Cambodia in the early decades of the present era. Superstitions surrounded the spirits, which could be protective or destructive, and rituals had to be conducted to either invoke or appease them. Betel leaf and areca nut as symbolic elements in the rites of passage were as important as for chewing betel. They were essential because the Khmers believed that they were instrumental in establishing communications between humans and spirits.

Puberty

'May the future bring thee a hundred, a thousand husbands!' was, according to Zhou Dagan, the traditional wish for a girl from her parents at birth (Zhou Dagan 1993: 18). According to the Chinese emissary's report, between the age of seven and eleven years, a girl was obliged to lose her virginity through a deflowering ritual conducted by a priest at a time chosen by astrologers. On the auspicious night, the priest entered a pavilion specially constructed for the ritual and deflowered the girl with his hand. He dropped 'the first fruits' into a vessel containing a fermented drink. Then the priest received offerings of areca nuts and other items such as wine, rice, and a silver plate for his services. As this ceremony has no correspondent in modern Khmer culture, and has left no other archival or cultural traces, we can not affirm

that it actually existed. However, the two vessels which would have been used in this ceremony, as in other ritual, were probably of metal for the elite and of ceramics for others.

Death

Disposition of the dead and rites associated with death in Khmer society are ambiguous, but it is clear that in early times several prescribed methods were used. In the Mekong Delta, for example, at the early Indianized state of Funan dating from around the 1st to the 6th century, four methods of disposing of the dead were used according to Chinese chronicles. These included throwing the body into the water, burying it in the earth, leaving the body in an isolated place to be devoured by birds, and reducing the body to ashes by fire (Briggs 1951: 29). Perhaps the selection of the method used related to the sex or the status of the deceased, or the means of death, such as by accident, disease, or naturally.

Ceramics excavated from funerary deposits verify form and function. This does not however allow us to determine whether a particular vessel was originally made for a funerary purpose or some other use. An excavation on the western bank of the royal pond of Srah Srang (the 'royal bath') at Angkor revealed several hundred complete Khmer vessels, many in burials.¹⁹ According to Groslier, this area near Srah Srang was used as a burial ground between the last decades of the 11th to the first years of the 12th century and then again at the end of the 12th century (Groslier 1981: 16). In single burials, a ceramic vessel containing ashes was surrounded by other vessels, which sometimes contained former possessions of the deceased (Brown 1988: 50). A particular form of covered jar has been found at the Kulen kilns in Cambodia, the Buri Ram kilns in Thailand, and in burials at Srah Srang. It is green glazed with a cylindrical body and a dome-shaped cover that is approximately one-third the height of the body. A knob on the cover is modelled to resemble a flower, a lotus bud, or tiers tapering to a point (figure 14). One anthropomorphic gourd-shaped bottle was found at Srah Srang (Groslier 1981: 29). The smaller upper portion of the bottle is modelled like a human face. Arms held with palms together in an attitude of meditation span the shoulder of the bottle.²⁰ This bottle is an example of a form that served more than one purpose. It was found in a funerary context at Srah Srang, but other examples contain traces of calcified lime and confirm the form was used as a container for lime to chew betel. Some other forms from the burials include large unglazed and brown glazed storage jars, brown glazed bottles and globular pots.

An ancient habitation site at Muang Fa Daed Song Yang, in the Khorat Basin, Kalasin Province, in Thailand, was excavated in 1991 by the Archaeology Division of Silpakorn University in Bangkok and yielded Khmer ceramics in the upper levels. A small round brown glazed Khmer covered box, presumably from the Buri Ram kilns and dated to the 12th and 13th centuries was found in a test pit to the west of Muang Fa Daed. The broad base of the box is approximately equal to its diameter (8 cm) and the cover fits on a



Figure 14. Green glazed covered jar; ht. 17 cm. From Cambodia. Private Collection, Bangkok.

¹⁹ See Brown 1988 for photographs of vessels excavated at Srah Srang.

²⁰ See Richards 1995: 171, Plate 132.

ridge on the interior. The form of the box is not unique in Khmer ceramics but it is an important find because the box contained human bones and ashes, which affirms its use as a funerary container (Indrawooth 1993: 4-5).

Zhou Daguan described disposing of the dead at Angkor in the late 13th century. Coffins were not used and when someone died a funerary procession took place accompanied by banners and music. The corpse was placed on a straw mat, covered with a cloth, and carried in the procession to an isolated place. Relatives and friends stayed with the corpse until they saw animals and birds coming to devour it and then they returned to the village knowing the deceased would have good fortune in his next life. A relief at the 13th-century temple of Banteay Chhmar depicts vultures hovering above dead bodies. Zhou Daguan also observed that a sovereign was buried in a temple tower but he did not know whether the body or only the bones were buried (Zhou Daguan 1993: 37).

Evidence substantiates that disposing of the dead by cremation has a long tradition in Cambodia. References are insufficient, however, to confirm that it was practiced continuously throughout history. Khmer inscriptions of the 7th century refer to the burial of pots containing ashes near a temple (Groslier 1981: 37, n. 8). Remains of stone monuments suggest that rulers were cremated during the Angkor Period. Debates continue, though, over whether the remains of kings were actually deposited in the temples after cremation. For example, archaeologists and historians have long debated whether Angkor Vat, built at the beginning of the 12th century and dedicated to the Hindu god, Vishnu, was a temple or a tomb. The temple has several funerary characteristics. It has been argued that viewing the Gallery of Bas-Reliefs in proper order, for example, requires walking around the temple in an anti-clockwise direction, which in Hindu religious ceremonies is associated with a tomb. The principle entrance of Angkor Vat is at the west, the direction of the setting sun symbolizing death.

Two brick buildings at the northeast and southeast corners of the temple of Bakong, dated 881 A.D., in the capital of Hari-Haralaya, have several rows of circular holes in the walls; these buildings are oriented to the west, the direction symbolizing death. The holes, which may have been vents, along with blackened walls on the interiors of the buildings suggest they were crematoriums or otherwise associated with fire rituals. Their original function remains, however, undetermined. Modern Cambodians associate the 10th-century temple of Pre Rup with a funerary function. The name means to 'turn, or change, the body', an action in cremation ritual where a miniature body formed of the cremated remains is turned to each of the cardinal points, before left facing east. Several archaeologists have supported local beliefs in surmising that a large vat at the base of the east stairway leading to the central area of Pre Rup was used for cremations. Similar vats have been found at other temple complexes.

Although the identity of the stone statue of the so-called Leper King on the terrace of the same name dated from the late 12th to the early 13th century, or perhaps earlier, is unclear, it may be associated with death and cremation. The terrace is situated to the northeast of the Royal Palace, a direction traditionally associated with death. An inscription written on the base of the statue in characters of the 14th or 15th centuries which identifies the statue as Yama, the god of death, has led some scholars to believe the terrace may have been a royal crematorium.

Cremation replaced jar burials at Muang Fa Daed in the 12th century (Indrawooth 1993: 5). Funerary deposits of the late 12th and early 13th centuries at Angkor revealed that if the deceased was cremated the ashes were placed in a vessel, which was buried and surrounded with precious objects such as Chinese ceramics or bronze ornaments. It would seem that Khmer vessels in these burials were ritually sacrificed as those uncovered from burial grounds are typically damaged in some way, with broken necks or punctured in the base or shoulder (Groslier 1981: 16). In the late 13th century, Zhou Daguan noted "a slowly increasing number of those resorting to cremation - mostly descendants of Chinese" (Zhou Daguan

1993: 37). Modern Cambodians dispose of the dead in a variety of ways. One of these is to cremate the dead, place the ashes in an earthenware covered jar and bury it near a temple.

Conclusion

With the identification of kilns at Angkor and access to temples throughout Cambodia, more sources for examining the role of ceramics in Khmer society during the Angkor Period are available than ever before. The temples, the surrounding structures, the Royal Palace, the layout and orientation of the monuments all provide information to assist in determining the function of ceramics for ceremonial and utilitarian purposes. This new evidence combined with previously available material leads to further clarification of the function and role of ceramics. Evidence substantiates that unglazed earthenware was made for utilitarian purposes throughout the Angkor Period, whereas glazed forms fulfilled the ritualistic and ceremonial needs of the kingdom. The dependence on metal prototypes to meet the demand for vessels associated with the religious practices of the kingdom explains the uniqueness of Khmer ceramic forms, which have no parallels in other Southeast Asian ceramic traditions. Finds of extensive architectural material point to a prime purpose for the production of glazed ceramics. Further archaeological field research at the kiln sites will give even more insight into the use, function, and role of ceramics. In the meantime, it is hoped that this study brings the research on technology and function closer together.

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