

Asian Traditions in Clay

THE HAUGE GIFTS



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Louise Allison Cort



Massumeh Farhad



Ann C. Gunter

FREER GALLERY OF ART AND ARTHUR M. SACKLER GALLERY

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Khmer Stoneware Ceramics

LOUISE ALLISON CORT

THE BODY OF CERAMIC WARES we know as “Khmer ceramics”—high-temperature stonewares, glazed for the most part, in a limited repertory of distinctive shapes—is a product of the Khmer Empire, a centralized religious, political, and economic entity based in the Angkor region in what is now northwestern Cambodia, which dominated a large area of mainland Southeast Asia from the ninth through the fourteenth century. The boundaries of the Khmer state were fluid, and it prevailed not simply by forceful conquest but by the compelling example of its elaborate cultural system of stone temple-mountains and related religious and royal ritual, of walled cities, of reservoirs and canal systems for water management, and of regional networks of roads and public works, presided over by a ruler who was both a religious and a political leader. This distinctive entity is sometimes described by the Sanskrit term *mandala* (a hierarchical representation of the universe in circular form)—not a “state” with clearly defined borders but a sphere of influence, organized around a ruler and his court in his capital and held together by alliances with other lords. Other Southeast Asian mandalas included Champa in what is now Central Vietnam and Pagan in northern Burma (Myanmar), but no other entity in medieval Southeast Asia rivaled Angkor in terms of scale. The dates for the period of Khmer dominion are usually defined by the proclamation by the ruler Jayavarman II of his “universal kingship” in 802 and the partial abandonment of Angkor as capital in 1431; Khmer authority had already been severely challenged by the thirteenth century.¹

The natural landscape of the core Khmer domain consisted of broad open plains framed by the Dangrek Escarpment to the northwest and the Cardamom Mountains to the southwest and dotted by

CAT No. 66. BALUSTER-FORM JAR WITH TWO-COLOR GLAZE, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 44.3 X 27.3, GIFT OF OSBORNE AND GRATIA HAUGE, S1996.112



freestanding hills. The capital city of Yasodharapura (now known as Angkor, from the Sanskrit *nagara*, “city”) was watered by a river system originating in springs on the Kulen Plateau to the northeast, and was located strategically near the Tonle Sap Lake, the annual recipient of the overflowing waters of the Mekong River system in the delta, when the Tonle Sap River reverses course, flows back, and quadruples its dry-season size. The Khmer skill in sculpting this natural landscape and harnessing the water systems, through construction of dikes and reservoirs to create a source of irrigation for wet-rice agriculture, became a basis of claim to royal power.

Archaeology, inscriptions in Sanskrit and Khmer, and records left by Chinese visitors sketch the process whereby the Angkorean polity gradually took form. In the late prehistoric period, the region was dotted by settlements surrounded by circular or irregular earth walls and moats, which served as local political centers for dispersed smaller farming villages. Gradually these politicoeconomic units coalesced into larger clusters, especially as certain of them, favorably situated along the coast, were drawn into patterns of international ocean-based trade. The site now known as Oc Eo on the Mekong Delta appears to have been an early trading center where natural products from the hinterlands were exchanged for luxury goods whose origins ranged from the Roman Empire through India to China. Records left by the Chinese of their contacts in this region during the third through sixth century describe an entity they called Funan in the Mekong Delta and southern Cambodia, while later records use the name Zhenla to refer to the inland area. These place names, understood by the Chinese as “states,” masked the reality of a number of local polities vying for power and gradually coalescing into larger units. Chinese texts describe the centers of the Khmer-speaking mandalas of “Zhenla” as spacious walled cities ruled by men using Sanskritic titles and enclosing sacred precincts with temples to Hindu deities whose rituals were conducted by self-styled brahmin priests.

In 802, a Khmer-speaking ruler named Jayavarman II claimed authority over his rivals during a consecration ceremony held on the Kulen Plateau. Jayavarman II and his successors ruled Angkor over the next six centuries from a series of cities on the plains southwest of Phnom Kulen. The traces that survive of these once-thriving centers are the sacred monuments, palaces, and gated walls built at first

of brick and stone and later entirely of stone—mountains of stone—and the earthworks, notably a series of rectangular pools (*baray*) of increasingly grand scale and a system of long, arrow-straight roads that radiated outward from the center. (Countless other structures built of organic material, including the royal palace, have disappeared.) Khmer sacred rituals incorporated elements of local cults, South Asian Hinduism, and Buddhism. Many Khmer rulers identified Shiva as their patron deity; others chose Vishnu; and some rulers were followers of Mahayana Buddhism. The Angkor state mobilized human power and wealth to build the great public works that gave material form to the concept of the ruler as guardian of his ancestral lineage and of the agricultural cycle and of the capital city as the Vedic god Indra's heaven. Each ruler's essential duties commenced with erecting temples—sacred mountains—to his ancestors and to his tutelary deity. As the locus of the capital shifted several times in the early centuries, the landscape gradually filled with a topography of sacred mountains, natural and constructed. Later Angkor-based kings measured the reach of their influence by erecting new buildings on ancient sacred sites such as Wat Phu in southern Laos, Preah Vihar on the edge of the Dangrek Escarpment, and Phnom Rung on a volcanic cone in Buriram Province, Northeast Thailand. Visible from great distances across the otherwise flat terrain, these mountains are counterparts of the sacred mountains in Hindu mythology that came to be mapped on the Angkorean landscape.

The peak of building enterprises that occurred during the rule of the Buddhist ruler Jayavarman VII (reigned 1181–1219) took place in a “frenzy to conquer and construct.”² Following immediately upon the successful rebuff of an invasion of the capital by warriors of the Cham mandala in what is now Vietnam, Jayavarman VII's reign saw the construction of twelve kilometers of new gated walls around the royal city of Angkor Thom, the temple of the Bayon at its center, and many other monuments in both the capital and the provinces. After Jayavarman VII's reign, until the partial abandonment of the capital in 1431, no new major monument was built in stone, although many were completed, restored, or built in wood. To the west, the mandalas of Sukhothai and Ayutthaya arose to challenge Angkorean dominance both militarily and culturally. Siamese troops raided Angkor on several occasions. Theravada Buddhism (the state religion of the Siamese), spread through missionaries prior to the invasions,

gradually took hold of the spiritual lives of the Khmers.

The evolution of Khmer glazed stoneware ceramics seemingly follows closely that of the Angkorean mandala, probably not coincidentally if the ceramic forms are seen to be largely ritualistic in function. Glazed stoneware formed a category of vessel used in the rituals within religious monuments as well as in individual homes. It also played a role in social rituals among the ruling elite. The high degree of centralized organization supported the development and expansion of centers for ceramic production, and it would appear that in the twelfth and thirteenth centuries ceramics were transported long distances over the Khmer roadway system to supply all corners of the Angkorean domain with vessels of standard and time-honored form. With the weakening of this cultural energy, especially with the transformation of religious ritual following the acceptance of Theravada Buddhism, the main purpose of Khmer glazed ceramics was exhausted and the skills needed for making them died out. During the six centuries or more of its production, however, it constituted a distinctive repertory of form and glaze.

THE REGIONAL TRADITION

Stoneware and Earthenware

The Khmer ceramic objects presented here must be considered a highly specialized and relatively short-lived tradition imbedded in—preceded by, surrounded by, and succeeded by, up to the present day—a matrix of a far more prolific production of earthenware. French archaeologists Bernard Philippe Groslier and Roland Mourer have been among the few to acknowledge the fundamental importance of this relationship; their participation in Cambodian excavations prior to 1975 made it obvious to them.³ For the most part attention has focused exclusively on the glazed stoneware vessels although, as both Cambodian and foreign scholars resume field research in the region, this is changing rapidly.

Earthenware in Cambodia, as in other places where high-temperature wares have also been produced, is a separate but parallel ceramic tradition. Earthenware is not the “origin” of stoneware—the two media have different properties and different goals. Earthenware, with the properties of porosity and resistance to thermal shock, has consistently been used for the basic tasks of cooking and of water

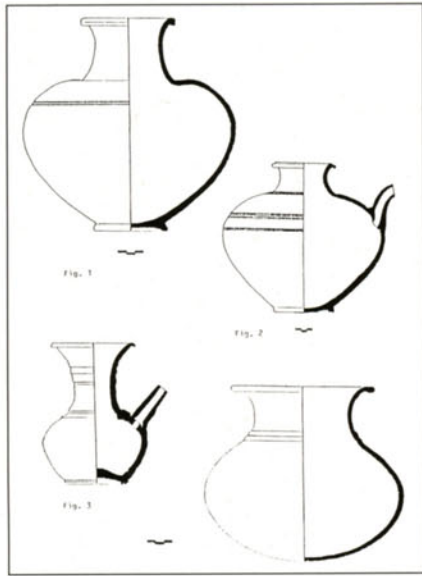


FIG. 1. WHEEL-THROWN EARTHENWARE VESSELS FROM SAMBOR PREI KUK, 6TH–7TH CENTURY. AFTER DRAWING BY BERNARD PHILIPPE GROSLIER IN MOURER, *LA POTTERIE AU CAMBODGE*.

CAT. NO. 53. CYLINDRICAL LIDDED VESSEL WITH POINTED KNOB, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, EARTHENWARE WITH TRACES OF WHITE COATING, 18.8 X 12.7. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.167



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transport and cooling. For the most part Cambodian earthenware is made today by efficient handbuilding processes, including use of a paddle and anvil to finish the slab-built form and produce a strong, lightweight, round-bottomed vessel, which has been fired in bonfires sufficient to produce the desired permeable hardness. From the late sixth through the eighth century in the Angkor region, however, some earthenware vessels were made by throwing on the fast potter's wheel (fig. 1).⁴ The use of the wheel thus appears to precede the earliest production of wheel-thrown, glazed, kiln-fired, high-temperature stonewares in (perhaps) the ninth century. Two wheel-thrown



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earthenware vessels, made at a later point in the tradition, when stoneware was also made, are included in this collection (cat. no. 53, fig. 2). They are fired close to vitrification, suggesting that firing was probably carried out not in a bonfire but in an updraft kiln.⁵ Such wheel-thrown vessels seemingly were associated with ritual use, in contrast to the largely domestic functions of the handformed vessels. The sixth-century examples, which bore slipped and painted decoration, were excavated from a burial pit and had been deliberately damaged before burial, so that they could not be reused. The shapes of those large, flat-bottomed vessels were modeled after forms famil-

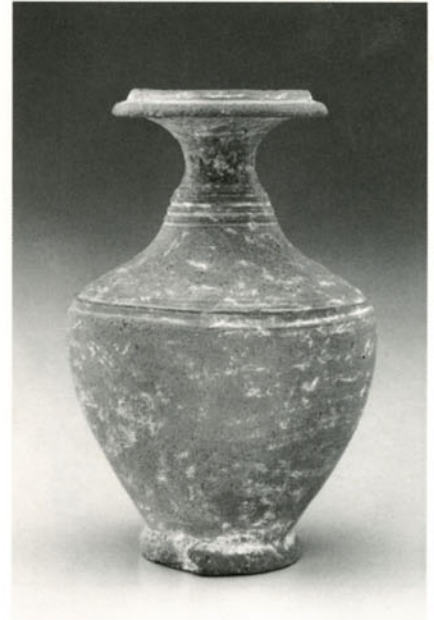


FIG. 2. BOTTLE, PROBABLY THAILAND, BURIRAM PROVINCE, ANGKOREAN PERIOD, 11TH–12TH CENTURY, EARTHENWARE WITH TRACES OF WHITE COATING, 15.2 X 10.4. ARTHUR M. SACKLER GALLERY, GIFT OF VICTOR AND TAKAKO HAUGE, S1996.183

CAT. NO. 73. BOTTLE, PROBABLY THAILAND, BURIRAM PROVINCE, 12TH–13TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 28.7 X 20.0. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.113

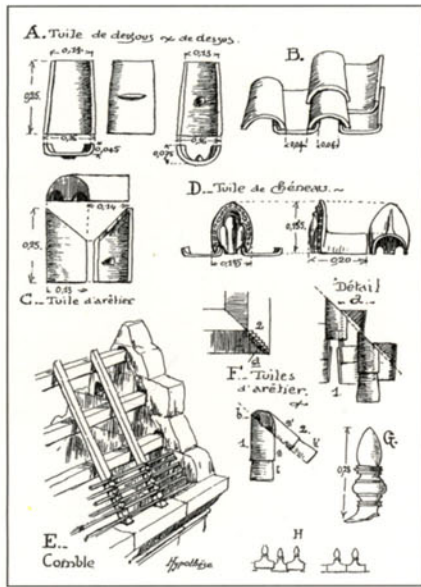


FIG. 3. VARIETIES OF KHMER ROOF TILES AND ORNAMENTS AND THEIR INSTALLATION. AFTER A. SILICE AND G. GROSLIER, "LA CÉRAMIQUE DANS L'ANCIEN CAMBODGE (ESSAI D'INVENTAIRE GÉNÉRAL)," *ARTS ET ARCHÉOLOGIE KHMERS*, VOL. 2 (1924–26), 42

iar in the repertory of South Asian metal and clay vessels.

An important component of the early production of stoneware, although not represented in this collection, is unglazed stoneware. Such wares have now been identified at recently discovered early kilns on the plains east of Angkor, assumed to have been active during the tenth and eleventh centuries. The most numerous shapes are large basins and bottles with elongated necks, ornamental "collars," and everted, dish-shaped mouths.⁶ This bottle shape endures throughout the Angkorean period and is executed in glazed stoneware and wheel-thrown earthenware (cat. no. 73, fig. 2). Unglazed stoneware roof tiles and roof ornaments were also fired at these kilns. The use of glaze on stoneware can thus be understood as an aesthetic augmentation. The glazed stonewares presented here should be imagined in a setting of complementary and/or alternative vessels made of earthenware, unglazed stoneware, and metal.

The Repertory of Shapes

The role of the stoneware workshops in supplying glazed roof tiles for religious and ruling-class buildings was an enduring one and needs to be taken into account for a complete understanding of glazed stoneware production, although tiles are not represented in this collection. The forms included simple half-cylinders used for covering the roof surfaces in interlocking rows, end tiles with mold-formed decorations for the lower edges of such rows, and finials for the roofline (fig. 3). As an illustration of the quantities required, fifteen hundred glazed end tiles were excavated during the recent French investigations of the royal palace site within Angkor Thom. Glazed tiles and finials were collected from the purported kiln site on Phnom Kulen early in this century and again in 1999. Glazed and unglazed stoneware tiles were produced at the kilns on the plains east of Angkor as well as at the kilns in what is now Northeast Thailand.

Khmer glazed stoneware vessels occur in a limited repertory of forms. Because we do not know the contemporaneous Khmer terms for these shapes, we cannot begin to understand how their users divided and categorized them conceptually. Here we will summarize them according to form, while also taking into account associated glaze color and the relationship of the form to Indian or



CAT. NO. 50. CYLINDRICAL BOX WITH
DOMED LID, PROBABLY CAMBODIA, SIEM
REAP PROVINCE, 10TH CENTURY, WHITE
STONEWARE WITH ASH GLAZE, 10.5 X 14.0.
GIFT OF OSBORNE AND GRATIA HAUGE,
SI996.152

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Chinese vessels. Understanding which vessel forms were most numerous must await the excavation of more kiln sites.

Ash-glazed covered boxes in compressed spherical form appear among the earliest known glazed Khmer stonewares. Their forms show an evolution of Chinese inspiration from late Tang dynasty (ninth century) Yue ware (cat. no. 50) to fruit- or vegetable-shaped pieces inspired by twelfth-century Song dynasty porcelains (cat. no. 80).

Another early and enduring form is the lidded urn—a cylindrical box with a lid bearing a knob in the form of a pointed cone (cat. no. 53) or of a lotus bud or seed-pod or other vegetal motif (cat. no. 51). Large, plain versions of these vessels are known with both ash and iron glazes as well as in earthenware.

Bowls with broad, flat bases and flaring walls that are either straight or slightly concave, ending in plain everted or incurving rims, are closely associated with ash glaze (cat. nos. 63, 70). Some versions bear narrow bands of incised lines just below the rim. Most have deep flanges above the base, but some are plain. These bowls





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are quite dissimilar to the classic Chinese bowl form, with narrow carved foot and everted rim (although some Khmer versions of this form have been excavated from Northeast Thai kilns), but a resemblance can be seen to a utilitarian bowl in the Freer collection (fig. 4), thought to be from a southeastern Chinese kiln, possibly in Zhejiang Province, and to date to the Tang dynasty (618–907). Like the Khmer ash-glazed bowls, this Chinese bowl was fired in a stack of identical ones, separated by a ring of clay wads that have left scars in the glaze.

Iron-glazed bowls are much less common and their forms are different (cat. no. 64). Small hemispherical cups on button bases also bear brown glaze (cat. no. 71).

A particularly puzzling bowl form, whose probable use is much debated, has a pedestal base and a short, mushroom-shaped stand rising from the center of the bowl (cat. no. 72). Most versions of this form bear iron glaze, although the stand and pedestal foot are typically unglazed. Another type of bowl on pedestal foot has an



FIG. 4. BOWL. CHINA, SOUTHEASTERN REGION, TANG DYNASTY (618–907). STONEWARE WITH GREEN GLAZE, SCARS OF CLAY WADS USED FOR SETTING, 6.2 X 18.2. FREER GALLERY OF ART, GIFT OF CHARLES LANG FREER, F1917.213

CAT. NO. 51. CYLINDRICAL LIDDED VESSEL WITH LOTUS SEED-POD KNOB, PROBABLY CAMBODIA, SIEM REAP PROVINCE, 10TH–11TH CENTURY, LIGHT GRAY STONEWARE WITH ASH GLAZE, 8.6 X 7.5. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.165

CAT. NO. 70. BOWL WITH INCISED LINES, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–13TH CENTURY, WHITE STONEWARE WITH ASH GLAZE, 9.3 X 15.7. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.175



FIG. 5. OFFERING BOWL, PROBABLY THAILAND, BURIRAM PROVINCE, KHMER KILN COMPLEX, ANGKOREAN PERIOD, 11TH–12TH CENTURY, WHITE STONEWARE WITH ASH GLAZE. 14.3 X 16.1. ARTHUR M. SACKLER GALLERY, GIFT OF VICTOR AND TAKAKO HAUGE, S1996.164

CAT. NO. 72. PEDESTAL BOWL WITH INTERIOR STAND, PROBABLY THAILAND, BURIRAM PROVINCE, LATE 11TH–12TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 13.4 X 19.6. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.121.1



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inverted conical body, wide flange at mid-point, and tapering conical shoulder; Groslier believed it was an offering dish (fig. 5).⁷

Bottles, jars, and vats (closed vessels with neck diameters ranging from tightly constricted to wide) of various sizes and shapes compose the largest category of Khmer glazed stonewares. Small bottles with squat, rounded bodies, narrow necks, and heavy beveled rims appear among the earliest-known Khmer ash-glazed stonewares (fig. 6). This form seems to persist and is joined by other small bottle shapes as well (cat. no. 52). Among iron-glazed bottles, one distinctive form is the squat, lenticular form with short neck (cat. no. 69). It is large enough to require holding with two hands for pouring. Another representative bottle form with a flat base, low center of gravity, sloping shoulders, swollen decorative band below the elongated neck, and everted rim, appears in early unglazed stoneware

versions and continues in both iron-glazed stoneware (cat. no. 73) and earthenware (fig. 2) versions, in a range of sizes. Some later bottles of this type have pedestal bases.

The smallest jar forms in the Hauge collection are wheel-thrown containers whose pyramidal forms, finished by conical lids, might be interpreted as lotus buds (cat. nos. 55, 56). They come in both ash- and iron-glazed versions.

Perhaps the most characteristically Khmer type of jar, usually in larger sizes, is distinguished by a pedestal base balanced by a wide, multitiered everted rim, with wide shoulder contrasting to narrow neck and foot—a form sometimes described as a “baluster jar.” The Hauge collection contains examples of this form in iron glaze (cat. no. 65) and in two-color format (cat. no. 66). Closely related are ewers—baluster jar forms with the addition of a short, nearly vertical spout on the shoulder (cat. nos. 67, 68).

The pedestal-foot jars and ewers have quite clear associations with South Asian vessel forms. A separate category of jar, with wide, flat base and short neck with simple rim, seems related, by contrast, to Chinese Song dynasty jar forms of the twelfth and thirteenth centuries made with iron or *qingbai* (pale blue) glaze (cat. no. 82). The Khmers were familiar with both versions. An iron-glazed jar from the Foshan kilns in Guangdong Province, was excavated from the Sras Srang cemetery site in Angkor, while an ash-glazed Khmer jar with four lugs on the shoulder in the collection of the Wittayakan School in Ban Kruat District, Buriram Province, is a close copy of a *qingbai* jar.

Large, barrel-shaped jars or vats have flat bases, wide mouths, short necks, and flattened everted rims (cat. nos. 74, 75). They occur only in iron-glazed versions.

Two related categories of vessel that seem to have no relationship to non-Khmer cultural forms are the zoomorphic vessels and anthropomorphic bottles. The zoomorphic vessels, which correspond to Khmer forms in precious metals or bronze, are commonly small enough to fit in the palm of the hand; they are either hand-pinched or wheel-thrown rounded containers, with small, plain openings on the upper surface, usually the animal’s “back.” Judging from surviving metal versions, these openings were fitted with lids. A combination of incised and applied decoration renders animals including elephants, horses, rabbits, cats, anteaters, birds, frogs, and

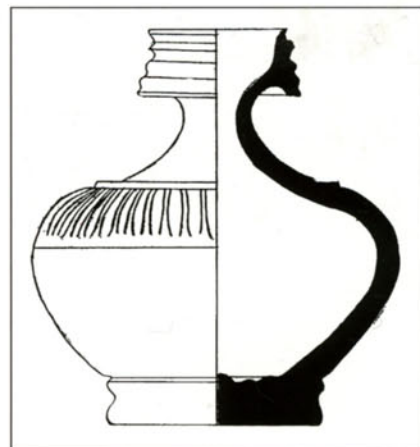


FIG. 6. MEASURE DRAWING OF JAR FOUND ON PHNOM KULEN, CAMBODIA, IN 1920. WHITE STONWARE WITH ASH GLAZE. H. 11.0 CM. NATIONAL MUSEUM OF CAMBODIA, H. 42, H. 44, 2

(following pages)

CAT. NO. 67. EWER, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, BROWN STONWARE WITH IRON GLAZE, 28.7 X 20.9 X 19.9. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.118

CAT. NO. 82. JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 12TH–13TH CENTURY, BROWN STONWARE WITH IRON GLAZE, 34.1 X 30.9. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.157



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CAT. NO. 76. ELEPHANT-SHAPED VESSEL WITH SPOUT, PROBABLY THAILAND, BURIRAM PROVINCE, 12TH–13TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 22.2 X 20.8 X 25.2. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.124



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CAT. NO. 68. EWER, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH ASH GLAZE (SPOUT AND RING-HANDLE DAMAGED), 36.0 X 21.1 X 20.1. GIFT OF VICTOR AND TAKAKO HAUGE, S1997.131

CAT. NO. 74. CYLINDRICAL JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 12TH–13TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 48.4 X 35.7. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.115

turtles (cat. nos. 57–60, 62, 77). The lion-shaped vessel in the Hauge collection is an uncommon form (cat. no. 58). Zoomorphic vessels of this size are often found filled with hardened lime paste, one of the ingredients for the betel quid; it is likely that these vessels were made for that specific purpose. (The custom of chewing betel quid—a mixture of lime paste and slivers of areca nut wrapped in a heart-shaped fresh betel leaf—has been widespread in Southeast Asia since prehistoric times.) One large elephant-shaped iron-glazed vessel, however, was apparently intended for a different purpose relating to the pouring spout positioned on its shoulder (cat. no. 76). Another category of zoomorphic vessel is the variety of conch shells faithfully rendered in clay, some of which are complete with the internal structure that allows them to be sounded as ritual horns (cat. no. 61). Zoomorphic vessels appear with ash glaze, sometimes with details painted in iron pigment beneath the glaze, or iron glaze.

The anthropomorphic bottles typically include a minimum of

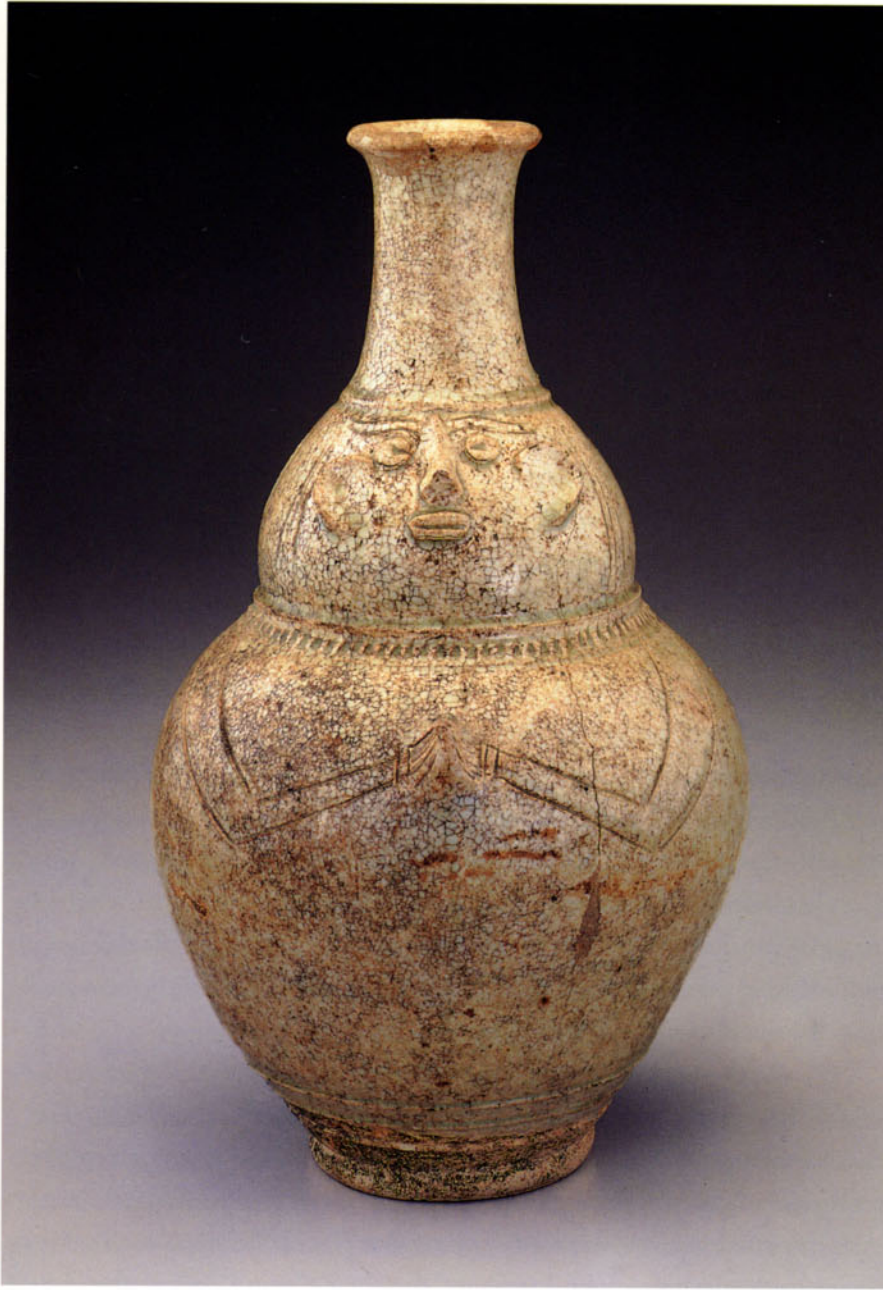


applied and incised details to transform a wheel-thrown gourd-shaped form into a human devotee with hands pressed together over the chest (cat. nos. 54, 79). They have no known parallels in other materials. It is common for the long necks of these bottles to be broken (perhaps intentionally, as part of ritual use) and lost, and only the ash-glazed bottle in the Hauge collection shows the original form (cat. no. 54). One piece in the Hauge collection, however, has legs applied to the base (cat. no. 83) and is also exceptional in representing two figures seated back to back.⁸ Another unusual vessel in the collection, larger than most anthropomorphic bottles, seems closely related in its iconography to the four faces gazing in the four directions above the gateways to the city of Angkor Thom, or to certain stone images of the four-faced Hindu deity Brahma (cat. no. 84). On this ash-glazed vessel, iron pigment accents applied details of the faces and outlines the wide base. The vessel's proportions suggest a relationship to the undecorated bottle form (cat. no. 73, fig. 2), with the position of the four large faces corresponding to the usual band of neck decoration. Perhaps this rare version makes explicit an iconography associated with the rituals in which such bottles were used.

The repertory of Khmer glazed stoneware includes very few examples of hollow or solid sculptural figures; they are so rare that they must have been made as personal commissions or occasional potters' whims, not as standard products.⁹ Other objects of this sort include trapezoidal or round bells approximating the forms of wooden cow bells or bronze jingle bells.¹⁰ Finally, the variety of ornate and ornamental lids for jars of all sizes constitutes a category in itself.

Dating Khmer Ceramics

As the study of ceramics in China and Japan has shown—benefiting from the concentrated work of hundreds of scholars in various fields of study over several decades—reliable dating of ceramics depends on sensitive archaeological excavation of both production sites and utilization sites to produce a description of the repertory of shapes and their changes over time. At the present stage of knowledge, the dating of Khmer glazed stoneware ceramics is still extremely vague. The scholar who had the most extensive and direct hands-on knowl-



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CAT. NO. 54. GOURD-SHAPED BOTTLE IN THE FORM OF A WORSHIPER, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, LIGHT GRAY STONWARE WITH ASH GLAZE, 29.1 X 16.7 X 17.2. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.110

edge of Khmer ceramics coming from sites in the Angkor region was Bernard Philippe Groslier (1926–1986), who served as conservator of the Angkor monuments from 1960 to 1975. Unfortunately he did not publish detailed reports of his excavations that would allow an objective understanding of the stratigraphic position of ceramic finds. Nonetheless his efforts at drafting a chronology for Khmer stoneware

FIG. 7. PRELIMINARY CHRONOLOGY OF
KHMER STONEWARE CERAMICS. AFTER
BERNARD PHILIPPE GROSlier AND
ROXANNA BROWN

1. BIRTH
FINAL QUARTER 9TH CENTURY–
FIRST QUARTER 10TH CENTURY
INDRAVARMAN (REIGNED 877–889)
AND YASOVARMAN (REIGNED 889–
CA. 910)
2. INFANCY
SECOND HALF 10TH CENTURY
RAJENDRAVARMAN (REIGNED
944–968) THROUGH JAYAVARMAN V
(REIGNED 968–1001)
3. ADOLESCENCE
FIRST HALF 11TH CENTURY
SURYAVARMAN I (1002–1050)
4. PROLIFERATION
MID-11TH CENTURY
UDAYADITYAVARMAN II
(REIGNED 1050–1066)
5. CRYSTALIZATION
LAST QUARTER 11TH CENTURY
JAYAVARMAN VI
(REIGNED 1080–1107)
6. CLASSICISM
FIRST THREE QUARTERS OF 12TH
CENTURY, SURYAVARMAN II
(REIGNED 1113–CA. 1150) TO THE
SACKING OF ANGKOR BY THE
CHAMS (1177)
7. END
LAST QUARTER OF 12TH CENTURY–
[END OF 13TH CENTURY?]
JAYAVARMAN VII (REIGNED 1186–
1218) AND THEREAFTER

ceramics have given us a sound basis for beginning to group the wares.¹¹ Art historian Roxanna Brown has compiled an expanded version of Groslier's chronology, taking into account his otherwise-unrecorded discussions with her in the field (fig. 7).¹² Groslier developed a chronology divided into seven phases, based on the dates of associated major monuments in Angkor and thus on the politics of rulership—even while questioning whether that “historical rhythm” was the most appropriate measure of ceramic evolution (although it has been the pattern followed, for better or worse, in the study of most Asian high-temperature ceramics). Groslier acknowledged that the ceramics he excavated from monumental sites—temples and palaces—were specialized and limited. The sites did not represent the full time span of Angkor, creating gaps in the understanding of ceramics, especially after the mid-thirteenth century. (Recent research indicates that Angkor was inhabited until the sixteenth century.) A peculiarity of Groslier's dating was his unwillingness to admit the presence in Angkor of ceramics made at the kilns in Northeast Thailand, which he considered to be products made strictly for provincial distribution. This question has never been resolved, although the existence of the other provincial kilns that Groslier insisted must exist is now beginning to be confirmed. Groslier's description of the distribution of Chinese ceramics in Angkor, in quantities that greatly outnumbered Khmer glazed stonewares, creates the present perception of the relatively minor importance of Khmer stoneware as a medium.¹³

With the resumption of research in Cambodia in recent years, there are various hopeful signs for the study of ceramics. The recent discovery and excavation of kilns within the Angkor region give an expanded basis for an understanding of technology. At present, the conservative dating of these sites places them no earlier than the mid-tenth century and no later than the second half of the eleventh (because of Groslier's date for the appearance of iron glaze, seemingly absent from these sites). Phnom Kulen, an alleged site of ninth-century kilns, has just become available again for investigation. Other kiln sites probably await discovery. Excavations of important sites outside of Angkor itself, at Oc Eo in southern Vietnam or at Wat Phu in southern Laos, for instance, will address questions of chronology and distribution as well as the issue of provincial kilns. A thorough analysis of all of the ceramic finds from recent French excavations of

the royal palace site, including both Khmer earthenware and stoneware, will reassess the relative importance of Khmer ceramics vis-à-vis imported wares.¹⁴ This is an exciting time for the study of this material, and the fine pieces in the Hauge collection are certain to acquire yet more precise identities as our knowledge increases.

TECHNOLOGY

Shaping

Khmer potters used two basic types of clay.¹⁵ Both are classified in Euro-American terminology as stoneware, meaning that they are formed from weathered rock. Their composition permitted them to be fired in kilns at temperatures between about 1100 and 1300°C, after which they retained their shape and were tough, nonporous, and stonelike in their hardness. For small vessels, especially for those to be glazed with a translucent green or yellow glaze, potters used a fine-grained clay that fired to near-white or pale gray because of the low percentage of iron and other ferruginous impurities that would otherwise have colored the clay. Some white-bodied pieces, especially those of early date (cat. no. 50), show black flecks of iron oxide in the clay. Most larger vessels (especially those to which brown glaze was applied) were formed with a coarser clay that fired medium gray or reddish brown. While large impurities were picked out of this clay, apparently it was not treated by sieving. Sometimes pebbles that escaped notice remain imbedded in a vessel wall. Little is known about sources of stoneware clay used by Khmer potters.¹⁶

Earthenware, on the other hand, is formed from a plastic secondary clay (deposited by running water) containing considerable organic and inorganic materials that contribute to its lower melting point. Earthenware is fired in a bonfire or kiln to temperatures between 600 and 1000°C. Even after firing it remains porous, making it suitable for purposes such as cooking (since it will expand rather than fracture in response to a sudden temperature change) or for cooling drinking water (through evaporation of the water that seeps to the vessel surface). Stoneware ceramics did not “evolve” from earthenware; instead, the technologies for working earthenware and stoneware clay developed separately for different purposes.

The potters who shaped Khmer stoneware ceramics depended upon the potter's wheel, which they used in two ways.



FIG. 8. BASE OF BOX, CAT. NO. 50, SHOWING SMOOTHLY TRIMMED BASE AND INCISED MARK BENEATH ASH GLAZE. ARTHUR M. SACKLER GALLERY, GIFT OF OSBORNE AND GRATIA HAUGE, S1996.152



FIG. 9. BASE OF JAR, CAT. NO. 55, SHOWING WHORL-SHAPED MARK LEFT BY USING TWISTED CORD TO SLICE FINISHED VESSEL OFF LUMP OF CLAY. ARTHUR M. SACKLER GALLERY, GIFT OF OSBORNE AND GRATIA HAUGE, S1996.142

For smaller vessels, they spun the wheel fast and used its centripetal force to raise or “throw” the moist, plastic clay into the desired form in a single sequence of gestures. They probably worked from a lump of clay attached to the wheel, from which, with the wheel spinning, they squeezed off the amount of clay required to shape a vessel. With the wheel still spinning, they used a twisted cord to slice the vessel off the lump of clay, holding one end of the cord steady and pulling the other end through the clay. The cord’s movement left an asymmetrical whorl-shaped mark on the base. On early vessels, the cord scar was completely erased by neat concentric trimming of the base (fig. 8); on later pieces the mark was left unretouched (fig. 9). Study of this mark demonstrates that the wheel was spinning in a counter-clockwise direction.

For larger vessels, the wheel was used as a turntable for the compound process known as coiling and throwing. The potter made a small lump of clay, threw it down onto the center of the wheel, and pressed it into a flattened disk of appropriate size for the base of the vessel. Additional clay was formed into a long coil that the potter attached to the circumference of the disk, in most cases allowing the coil to overlap slightly. Evidence of this process is visible on the bases of many vessels, on which the clay has a uneven “wrinkled” appearance (caused by the flattening of the disk) and the slightly concave center (corresponding to the disk) is surrounded by a slightly projecting ring (the edge of the coil) (fig. 10). In the case of very large vessels, the potter formed the correspondingly large base from several lumps of clay thrown down together and consolidated.

The potter secured the clay coil around the circumference of the base and then used the free end to coil up a wall, joining additional coils as necessary to form a thick-walled basin. Then, with the wheel spinning fast, the potter “threw” the coiled wall to thin and extend it. This coiled-and-thrown form became the base and lower wall of the jar. It was allowed to dry until it was still damp but stiff enough to support additional weight. The potter then attached another coil to the upper edge and built a cylindrical segment of vessel wall, once again throwing the coiled form to the desired thinness. Depending on the size of the finished vessel, this process would be repeated three or more times, ending with the coiled addition that became the shoulder, neck, and rim.

The coiling-and-throwing process has been widely used in Asia for forming large jars, vats, and other utilitarian vessels, in which the overall weight of the clay required that it be added in segments so that the vessel could support itself. The process can still be observed in pottery workshops in East and Southeast Asia.¹⁷ What is surprising about Khmer stoneware ceramics is that a variant of the process appears to have been used even for vessels of quite modest size, including bowls, as indicated by the wrinkled texture on the untrimmed base. In this case, a single small lump of clay was probably attached to the wheel to form the base and, with the wheel spinning fast, was used to throw the walls as well.¹⁸

Observation of the coiling-and-throwing process in contemporary Southeast Asian workshops shows that in many cases the potter works as a team with an assistant who prepares the clay coils and spins the wheel rapidly for the throwing phase (fig. 11). When the potter is adding coils, he turns the wheel himself. In some workshops in Laos and Northeast Thailand, the potter and his assistant use a set of ten wheels, working sequentially and in stages on ten vessels in the course of the day.

Despite the predominance of wheel-based forming methods in the repertory of Khmer stoneware ceramics, there exists a significant group of objects shaped entirely by hand. These include some of the zoomorphic vessels (cat. nos. 77, 78) as well as sculpted hollow or solid figures and bells. A notable shape in this category is the vessel in the form of a conch shell. Some of these were made as lustration vessels and others to be blown to make an auspicious sound during worship, reflecting the ritual uses of actual conch shells. The clay versions made to be blown were carefully sculpted with interior partitions replicating the actual conch shell so as to produce the appropriate sound (fig. 12). The sculpted details for wheel-thrown zoomorphic and anthropomorphic vessels were also shaped by hand. This suggests a category of work carried out by people who were not necessarily skilled at using the wheel—perhaps children or elderly parents. In the case of the frog-shaped vessel (cat. no. 77), the hollow body was pinched out of a lump of clay, the eyes and limbs were applied as dots or coils of clay, and a pointed stick added the nostrils and the smiling mouth. The lion (cat. no. 78) indicates first-hand familiarity with the forms and sculptural details of sandstone lion figures placed along the approach to temple buildings. With a

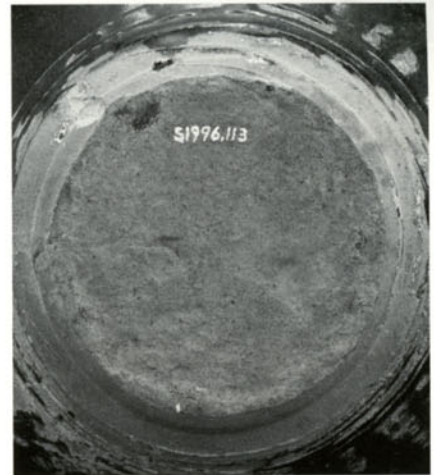


FIG. 10. BASE OF BOTTLE, CAT. NO. 73, SHOWING WRINKLED SURFACE AND SLIGHTLY PROJECTING RIM. ARTHUR M. SACKLER GALLERY, GIFT OF OSBORNE AND GRATIA HAUGE, S1996.113



FIG. 11. TEAM OF POTTERS USING COIL-AND-THROW PROCESS TO MAKE SERIES OF STONEWARE JARS. NONG KHAI PROVINCE, NORTHEAST THAILAND, 1990



CAT. NO. 61. CONCH SHELL-SHAPED VESSEL WITH ANIMAL FACE, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH ASH GLAZE, 9.6 X 18.0 X 11.4. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.168

CAT. NO. 78. LION-SHAPED LIME-PASTE VESSEL (?), PROBABLY THAILAND, BURIRAM PROVINCE, 12TH–13TH CENTURY, WHITE STONEWARE WITH ASH GLAZE, 10.1 X 5.0 X 6.8. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.150

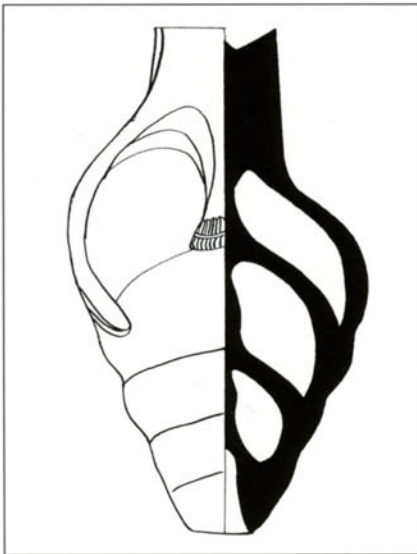
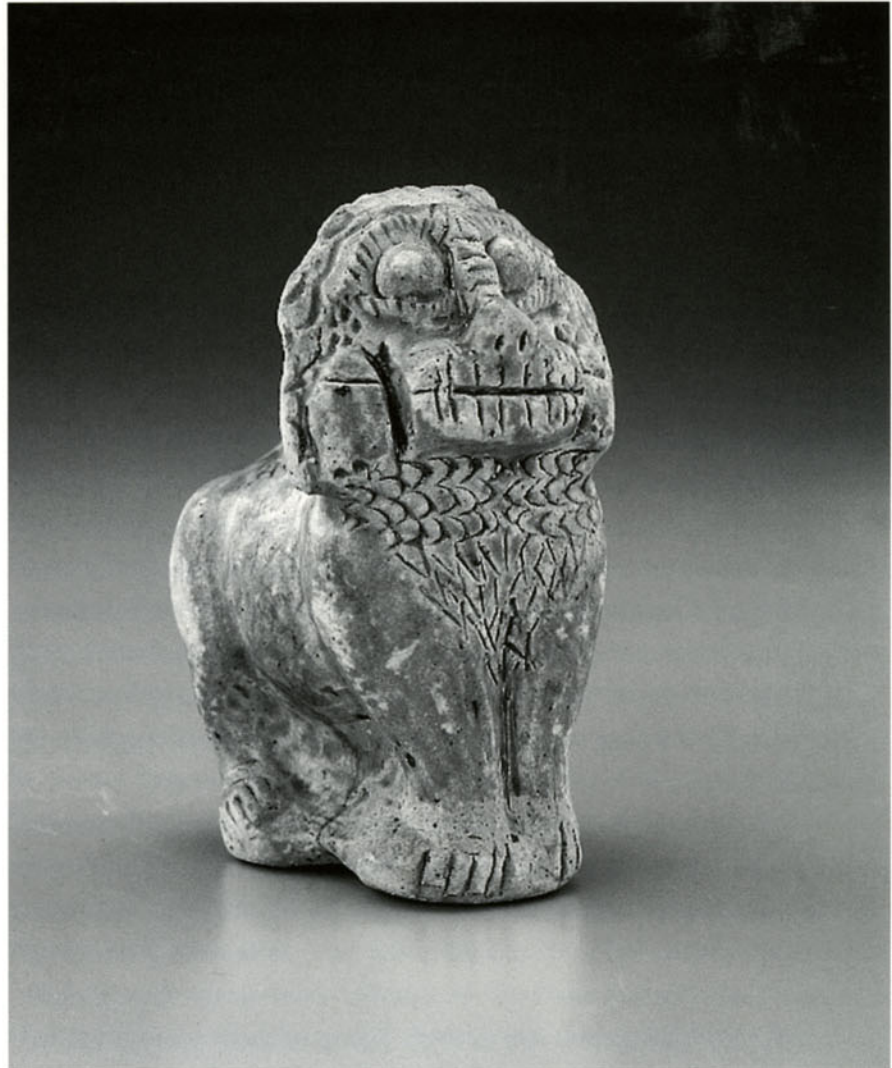


FIG. 12. MEASURE DRAWING OF STONEWARE CONCH SHELL SHOWING INTERIOR STRUCTURE THAT ENABLES SHELL TO PRODUCE SOUND. WHITE STONEWARE WITH ASH GLAZE, L. 18.8. NATIONAL MUSEUM OF CAMBODIA, H. 79, H. 47, 2



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simple repertory of incised and impressed patterns, the clay sculptor deftly evoked the ornamental vocabulary of the stone carver.

Decorating

Khmer stoneware ceramics are notable for their absence of painted decoration. On a small subgroup of zoomorphic and anthropomorphic vessels, painted lines of iron pigment fill the space between pairs of incised lines to outline details of the form, but the painting is not freehand: it follows and is secondary to the incised decoration (cat. no. 62).¹⁹ Khmer stoneware is totally devoid of the underglaze iron-

painted floral decoration that appears on ash-glazed bowls and dishes from kilns operating in Guangdong Province during the eleventh and twelfth centuries,²⁰ whose wares were widely distributed in Southeast Asia, or on northern Vietnamese vessels beginning in the thirteenth century.²¹ Since the Guangdong wares would have been available to Khmer consumers had they been of interest, it is possible to suggest an aesthetic aversion to such freehand painted decoration.

Floral decoration does not appear in incised form either, except in some rare cases on early vessels, as in the incised lotuslike petals radiating around the lid of the circular covered box (cat. no. 50). Some examples can also be found of modeled relief decoration in floral form (the knob in the shape of a lotus seed-pod on the cylindrical lidded vessel, cat. no. 51). In all cases, decoration is applied to the bare clay prior to glazing. There are no instances of designs, whether floral or geometric, made by cutting away areas of the glaze and painting in a contrasting pigment or glaze (as was done in northern Vietnam in the twelfth through fourteenth centuries).²²

Instead, the decoration of Khmer ceramics depends, like the shaping of the vessels, on the use of the potter's wheel. It consists essentially of profiles cut into the vessel wall and of combinations of lines, molding, combing, and motifs incised or impressed into the moist clay, all while the just-formed vessel was still on the potter's wheel. (Thus it can be assumed that the potter and the decorator were one person, unlike the division of labor common in ceramics workshops where emphasis was given to painted ornamentation.) This decorative repertory, making use of the wheel's swift revolution, produces a variety of horizontal incisions and bands of various widths and textures. Vertical or diagonal lines are occasionally found as supplements to the horizontal bands. Freehand ornamentation, as in a fluted rim pinched by hand on a bowl with interior stand (cat. no. 72), is exceedingly rare and basically an exception to the aesthetic of engraved, wheel-governed ornamentation. The bands of horizontal decor are placed on the vessel, moreover, so as to emphasize the curves and angles of the wheel-made form.

One can imagine a rather limited variety of simple tools for decoration lying on the potter's workbench. A selection of pointed blades, probably made of bamboo or wood, would have been used to cut the tiers of beveled molding that appear especially prominently

on the pedestal bases, necks, and rims of large vessels (cat. nos. 65, 68). The molding was usually cut before other decoration was added. The potter probably reached frequently for a sharp-pointed stick in order to incise single lines, pairs of lines, or multiple lines. On some Khmer glazed stonewares, such lines are the dominant mode of decoration. A pointed stick also drew the details on zoomorphic and anthropomorphic vessels, using closely spaced parallel lines filled with hatching. The potter used a flat blade with a pointed tip to sculpt the panel of radiating flower petals on the lid of the small jar with lotus seed-pod knob (cat. no. 51), first cutting the lines to separate the petals, then pressing the triangular tip of the blade to define the petal tips.

A comblike tool tipped with three, four, or five pointed teeth (possibly even a section of an actual hair comb) could create a band of straight, parallel lines or of scalloped swags.²³ Scalloped combing, which becomes prominent on later Khmer stoneware (cat. no. 82), varies greatly in scale and mood. Occasionally, the combing tool was rhythmically lifted and jabbed as it was dragged around the revolving vessel, creating a textured band.

In addition to the tools presumably made from wood or bamboo, certain impressed designs characterized by crisp, fine lines suggest that some potters may have had access to metal tools—perhaps dies or stamps acquired from gold- and silver-workers. Overlapping V-shaped dies marked bands of “cross-hatching” (fig. 13, detail of shoulder of S1996.158), while plain or notched circles marked eyes and other features on zoomorphic and anthropomorphic vessels. Dots and crescents were included in this borrowed alphabet of decorative shapes as well (cat. nos. 61, 78).

Glazing

Just two basic and closely related high-temperature glazes are used on Khmer stoneware, although variations in raw materials, composition, application, and firing conditions created a range of shades and textures in each. The essential Khmer glaze is a lime glaze or lime-ash glaze, composed of wood ash and clay. The potters probably used wood ash collected from the fireboxes of their wood-fired kilns. Since kiln firings probably made use of a variety of locally available wood—particularly those types deemed inappropriate for building

or woodworking—the composition of the ash likely varied from firing to firing. The clay was the same light-colored clay used for shaping the ware. These two ingredients were combined in established proportions (rather than exact measures) and mixed with water to make a liquid with the consistency of heavy cream. This type of glaze is the oldest and most enduring in East Asia (in China it is known as early as 1400 B.C.) and probably arose as an attempt to replicate the glassy sheen that occurred naturally when wood ash from burning fuel melted on the upward-facing surfaces of vessels fired to high temperatures (upwards of 1170°C) in a kiln.

The Khmer ash glaze takes its color from a small percentage of iron oxide; probably the amount occurring naturally in the glaze materials was sufficient. The glaze ranges in color from nearly colorless or pale yellowish green to clear green (depending on the glaze composition and thickness and the amount of available oxygen during the firing) and in texture from thin and smooth to thick, crackled, and uneven. This range of characteristics on the ash-glazed pieces also relates to their chronological development. Since Khmer pots were fired without protective covering (in the form of fired clay containers, or *saggers*), additional wood ash landing on the vessel during firing also affected the appearance of the glaze.

The second basic glaze resulted when additional iron oxide was added to the ash glaze to produce a brown-toned glaze. The iron was added either in the form of the red-brown clay used to make large vessels or perhaps as laterite, an iron-rich volcanic conglomerate abundantly available in the Angkorean region. The proportion of clay to wood ash would have required adjustment, because a higher percentage of iron would have increased the glaze's tendency to run.

Khmer iron glaze varies greatly in color and consistency, from a thin, golden brown to an opaque, matte brownish black, including a dark olive green. The final color of either Khmer glaze—especially the iron glaze—depended upon a whole range of variables, none of which was tightly controlled, including the dampness of the vessel at the time of glazing (Khmer vessels were glazed “raw” and were not pre-fired, or bisqued, to a low temperature); the proportion of iron-bearing materials in the particular glaze batch; the atmosphere of the kiln; the temperature reached during firing; and even the position of the piece in the kiln in relation to the fuel burning in the firebox. Inspection of the brown-glazed ceramics in the



FIG. 13. DETAIL OF SHOULDER OF JAR, SHOWING “CROSSHATCH” PATTERN PRODUCED BY OVERLAPPING IMPRESSIONS OF V-SHAPED DIE. ARTHUR M. SACKLER GALLERY, GIFT OF VICTOR AND TAKAKO HAUGE, S1996.158

CAT. NO. 81. JAR, PROBABLY THAILAND,
BURIRAM PROVINCE, 12TH–13TH CENTURY,
BROWN STONEWARE WITH IRON GLAZE, 40.0 X
30.1. GIFT OF VICTOR AND TAKAKO HAUGE,
SI997.132



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Hauge collection reveals that glaze color varies in relation to the hardness of the fired clay. Most pieces were fired to less than full vitrification; thus the clay is still soft and quite porous. On such pieces (for example, cat. no. 72), the amber brown glaze is thin, translucent, and even. As the hardness increases, the glaze is darker in color (cat. no. 81) and often more irregular in texture, with thick rivulets of darker toned glaze (cat. nos. 73, 74). The highest fired iron-glazed vessel in the group is cat. no. 65; the vessel rim is beginning to collapse, and the glaze is a translucent, deep olive green. In



CAT. NO. 65. BALUSTER-FORM JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH-12TH CENTURY, BROWN STONEWARE WITH IRON GLAZE, 36.8 X 23.0. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.117

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any case, the glaze color we see may have been affected by weathering and degradation, especially if the piece was buried for a long time rather than passed down as an heirloom (a circumstance that seems exceedingly rare for Khmer ceramics).

Most smaller pieces were probably glazed by dipping the inverted vessel into the vat of glaze. Glaze completely coated early ash-glazed pieces, including the base, and preliminary kilnsite evidence suggests that they were fired on clay wads.²⁴ Later pieces were dipped only to the lower edge of the wall, leaving the foot bare. On



FIG. 14. SHERD OF KHMER STONEWARE JAR USING ASH AND IRON GLAZES OVER WHITE AND BROWN CLAYS, NORTHEAST THAILAND, KHMER KILN COMPLEX, ANGKOREAN PERIOD, 11TH–12TH CENTURY, H.15.2. FREER GALLERY OF ART, GIFT OF FUJIWARA HIROSHI, FSC-P-4743

some medium-sized pieces, swags along the lower edge of the glaze suggest that the glaze was ladled over the inverted vessel resting in a tub to catch the run-off. Large pieces were probably glazed in a variation of this process. On many iron-glazed pieces, the glaze was wiped off the lower body to avoid problems with excessively runny glaze (cat. no. 73).

Ash glaze alone appears on the earliest known glazed Khmer stonewares, which are assumed to come from the kilns on the Kulen Plateau and known to be from the kilns on the plains between the plateau and Angkor. (For this reason, the term “Kulen glaze” has sometimes been applied confusingly to all ash-glazed wares, regardless of their probable date and place of manufacture.) At the same time, larger vessels made from brown clay were fired without glaze. On some of those, wood ash deposited during firing melted to form a natural sheen that was formerly interpreted as an intentional glaze termed *lie de vin* (wine dregs) for its purplish brown color. A true brown or black glaze—the second major Khmer glaze—is not known from those sites, at least from surface finds. It appears to have developed at kilns within the far-flung complex located in modern Buriram Province, in Northeast Thailand. Bernard Groslier found brown-glazed wares in his excavations of sites in Angkor dating to the first half of the eleventh century and reported that such pieces outnumbered green-glazed in sites from the second half of the century.²⁵

In Khmer potters’ most distinctive approach to glazing, they sometimes combined the two basic glazes on a single vessel. Typically, the green glaze is applied to the upper portion (usually the neck) and the brown glaze to the lower, with the boundaries between glazes emphasizing the variations in the form (cat. no. 66). Small, two-color vessels may be made entirely from light-colored clay, but on larger vessels, which needed to be formed from red clay for strength, the potters invented a way of laminating white clay onto a rudimentary neck of red clay and throwing it to make the finished form. This lamination can be seen clearly in cross section on sherds of two-color vessels (fig. 14). Whereas the ash glaze would have appeared muddy over the dark clay, the underlying white clay showed it to best advantage, and its sparing use perhaps also conserved a scarce resource.²⁶ On many large, two-color vessels, white clay was also used to form applied ornaments arrayed below the neck. Groslier

found the greatest number of large, two-color vessels in excavations dating to the mid-eleventh century.²⁷

Firing

Khmer stonewares were fired in kilns, using wood as fuel. Three locales for Khmer ceramic production have been identified to date. Only a full elucidation—through careful archaeological excavation—of the kiln structures and associated kiln tools will reveal the firing technology used by Khmer potters, make possible a discussion of the chronology of the sites, and permit the discovery of resemblances, if any, to firing technologies used elsewhere in East and Southeast Asia. It is this technological evidence, rather than stylistic comparisons alone, which will answer questions about the source of Khmer kiln technology.

The first known Khmer kiln site was identified in the late nineteenth century atop Phnom Kulen, the expansive plateau that rises above the plains northeast of Angkor where Jayavarman II was proclaimed universal monarch in 802 and the sandstone for the monuments of Angkor was quarried. Visiting in 1883, French explorer Etienne Aymonier described an area on the plateau marked by two earthen dikes that met perpendicularly—the remains of Khmer hydraulic structures. The tops of the dikes were strewn with broken pieces of glazed pottery (“bowls, lids, tiles, pointed roof ornaments”), while piles of similar materials rose from a small pond nearby.²⁸ (Visits by archaeologists in 1999 confirmed this description.)

Aymonier also recorded a local tradition that the potters had been Chinese. Sherds collected on Phnom Kulen by a later visitor and given to the National Museum, Phnom Penh, in 1920, include several crisply carved ash-glazed lids from cylindrical containers similar to cat. no. 51, with relief-carved lotus petals on the shoulders and knobs in the form of stupas or lotus blossoms.²⁹ The finds also include roof tiles, hemispherical bases of small boxes, and a small bottle with flattened body, narrow neck, and heavy rim in the form of a truncated cone (see fig. 6).

A second center of Khmer ceramic production lies north of the current border between Cambodia and Thailand (which follows the Dangrek Escarpment), in Buriram Province of Northeast Thailand.³⁰ The kilns began to emerge around 1950 during logging

and clearing of land for new fields: large, freestanding mounds, often topped by a tall tree growing out of the old kiln cavity, were scattered across the landscape, and the soil on and around them was thickly studded with sherds.³¹ Surveys by archaeologists of the Fine Arts Department of Thailand documented several hundred kiln mounds dispersed throughout the province, although their excavations in the 1980s focused on three mounds in Ban Kruat and Lahansai districts, just north of the border.³² Interpretations of the excavated kiln structures have varied, but recent excavations of kilns near Angkor (to be discussed below) help confirm the description that follows.³³ The kilns were constructed on artificially made mounds (perhaps augmenting natural hillocks). Four or five kilns appear to have been built and used sequentially on the same mound, with later kilns partially reusing the side walls (made of stones mortared with clay) of earlier kilns. The total length of a kiln from firebox at the base of the mound to chimney at the crown was about fifteen meters, and the width of the single long ware chamber was about five meters. At the rear of the firebox, where the fuel was burned, was a vertical wall almost one meter high leading up to the ware chamber. The floor of the ware chamber rose up the slope in three shallow steps, and a single row of thick cylindrical columns, spaced about one meter apart, was constructed along the length of the ware chamber to support the roof, now missing. (Some fired clay debris indicates that the roof might have been constructed from clay smoothed over an arched bamboo framework.) The gentle slope of the ware chamber floor would have encouraged a neutral to oxidizing atmosphere during a firing of fairly long duration.

Sherds recovered from the excavated kilns and other mounds show that ash-glazed, iron-glazed, and two-color wares were all made at these sites. Some visitors in the 1970s commented on the apparent dominance of a particular type of glaze at a given site, but this observation has not been quantified. The only special kiln-stacking devices seem to have been round balls of very sandy white clay, two to three centimeters in diameter, used as setters in stacks of green-glazed bowls, positioned around the base of each bowl, resting on the interior of the bowl below. (Round scars left by the balls are visible in the glaze of cat. nos. 63 and 70.) There is no evidence that the potters placed any wares inside saggars of the sort that were common at kilns in southern China. Some surviving vessels bear grit

imbedded in the glaze on their shoulders, probably signs of a kiln roof's beginning to crumble (cat. no. 65).

In 1995, three new production sites for Khmer ceramics were identified in Siem Reap Province on the plains west of Phnom Kulen and east of the Angkor monuments, bordered by Rolous (the tenth-century royal city of Hariharalaya) to the south and Phnom Bok (site of an early tenth-century monument dedicated to the Hindu deity Shiva) to the north. Kilns in the hamlets of Tani, Kna Bos, and Bang Kong made large, unglazed stoneware bottles and jars and unglazed roof tiles. Only a few surface finds of brown-glazed wares have been reported, suggesting that these kilns did not produce them. Like the site on Phnom Kulen, the kilns in Tani Hamlet also made ash-glazed roof tiles and ash-glazed vessels, chiefly small bottles and boxes. A distinctive product said to be from the Tani kilns (according to treasure hunters, but not yet confirmed by archaeology) is a type of small round box with bird head, wings, and tail sculpted in relief on the lid. These boxes occur singly but also with two or three lids luted together to make a double- or triple-bodied box. Recognition of their similarity to boxes made at kilns in Guangdong Province during the Northern Song period (960–1127) has intensified the speculation on the relationship of early Khmer and southern Chinese ceramics.³⁴ The neatly trimmed bases of the ash-glazed vessels ascribed to the Tani kiln site are completely glazed, and most bear incised marks composed of multiple straight lines arranged in patterns that vary widely (see fig. 8). The purpose of these marks is not yet understood.

The Siem Reap kiln sites, particularly Tani, have been the subject of careful investigation by teams of Japanese archaeologists from the Sophia University Mission in Angkor and from the Nara National Research Institute for Cultural Properties.³⁵ Two kiln mounds from the five clusters of such mounds located atop a long, low, ancient dike running north-south with a road on it were excavated in 1999–2000. In March 1999, the Sophia team uncovered a kiln built on an artificial mound made of clay. The kiln, built of unfired clay blocks, consisted of a single oval ware chamber about three meters wide at most and measured about eight meters from the front of the firebox at the base of the kiln to the smoke exhaust opening at the rear. A steep vertical wall about one meter high separated the firebox below from the ware chamber above. A round

pillar constructed above the vertical wall at the opening to the ware chamber may have served both as a roof support and a flame divider. The Nara team's excavation of a second kiln mound confirmed these findings about the kiln structure, which shows substantial continuity with the larger and later kilns in Northeast Thailand.

Following a long period of inaccessibility, the Phnom Kulen site reported by Aymonier was explored by Japanese archaeologists working at the Tani site in August 1999. Their preliminary conclusions from the huge quantity and fine quality of ash-glazed sherds they found is that Phnom Kulen housed the primary ceramics production facility for the Angkor region and was active for an extended period, while the auxiliary kilns at Tani and elsewhere produced similar wares of lesser quality and for shorter durations. An excavation of the Phnom Kulen site is urgently awaited.

In addition to these three locales of ceramic production, others have been tentatively identified. Archaeologists working at the Khmer sacred site of Wat Phu (now in southern Laos) found what appears to be a row of kilns along a dike that formed part of the irrigation structure for the village at the foot of the sacred mountain whose inhabitants served the religious community. First announced publicly in 1998, this "kiln site" has not yet been excavated.³⁶ Groslier was convinced, on the evidence of clay bodies unlike those of Kulen or Buriram, that kilns must have operated at other Khmer settlements—in the tenth century near Sambor Pre Kuk and in the twelfth century near Preah Khan in Kompong Svay.³⁷ Indeed, it is reasonable and likely that quite a few more production sites for Khmer stonewares will come to light, if the case of Japan is any example. In the 1950s, just six regional kilns that produced stoneware in medieval Japan were known. Subsequently, however, large-scale infrastructure construction in rural areas has uncovered upwards of eighty such sites, requiring a thoroughgoing revision of the description of medieval ceramic production.

Meanwhile, the differences in types and quality of wares from the three known centers seem to suggest a sequence of activity. The initial activity of the kilns on the Kulen Plateau might be dated to the first half of the ninth century through assumed association with the religious monuments built when a capital of Jayavarman II was located there. This kiln center appears to have been active over several centuries. It has been proposed that the Tani kiln and others

on the plains east of Angkor operated roughly from the mid-tenth to the second half of the eleventh century.³⁸ This would agree with the concentration of early monuments in the eastern Angkor region.

Activity of the Buriram Province kilns may have coincided roughly with the period circa 1000–1300, when Phimai was a major regional administrative and religious center for the Angkorean state.³⁹

Although scholars disagree about whether Buriram ceramics were shipped to Angkor, Ban Kruat, at least, lay along the road connecting Phimai and Angkor, which provided access to long-distance distribution.⁴⁰ In the fourteenth century, as Angkorean power waned and its network of political, economic, and religious links frayed, the Buriram region came under control of the Thai kingdom based in Ayutthaya, which had more convenient sources of glazed stoneware at Si Satchanalai and other ceramic centers in north-central Thailand. Perhaps even earlier, demands for fuel not only by the potters but also by the competing large-scale industries of iron-smelting and salt-making may have led to deforestation of the region.⁴¹

A noteworthy characteristic of all the Khmer kilns identified so far is that they were built upon artificial mounds (rather than cut into a riverbank or natural hillside, as were historical kilns elsewhere in Thailand and Laos). In some cases the artificial mounds for the kilns were further elevated upon artificial dikes constructed to control water movement. Thus Khmer ceramic technology appears to have been integrated with the famed Khmer skill at constructing earthworks for purposes of agriculture and urban development. Whether this association had any meaning beyond engineering convenience remains to be explored.⁴²

PRODUCTION

Surviving Khmer inscriptions are silent on the place of potters in Khmer society (whether they were free citizens or slaves), the structure of ceramic workshops, or the ceramic industry as a whole.

Cumulatively they indicate in more general terms an organization of specialized craft villages, often associated through endowment grants with religious centers, that regularly turned over specified quantities of their output.⁴³ If contemporary stoneware production by Thai-Lao potters in Northeast Thailand can be taken as a model, Khmer potters operating in the same environment probably concentrated on



57, 60, 58, 59

CAT. NO. 57. BIRD-SHAPED LIME-PASTE JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH ASH GLAZE, 12.4 X 12.1. GIFT OF OSBORNE AND GRATIA HAUGE; S1996.145

CAT. NO. 60. BIRD-SHAPED LIME-PASTE JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH IRON GLAZE, 11.0 X 11.3. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.172

CAT. NO. 58. BIRD-SHAPED LIME-PASTE JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH ASH GLAZE, 7.0 X 9.0. GIFT OF OSBORNE AND GRATIA HAUGE, S1996.146

CAT. NO. 59. BIRD-SHAPED LIME-PASTE JAR, PROBABLY THAILAND, BURIRAM PROVINCE, 11TH–12TH CENTURY, WHITE STONEWARE WITH IRON GLAZE, 5.9 X 6.4. GIFT OF VICTOR AND TAKAKO HAUGE, S1996.171

ceramic production during the dry season—November through May—when the wares, kilns, and fuel were not affected by heavy rains. Khmer potters probably worked as farmers during the rainy season, as do Thai-Lao potters today. Thai-Lao stoneware makers are men, while earthenware production, as in Cambodia, is the specialty of women.⁴⁴ Judging from contemporary practice, a single kiln might have been shared in rotation by several workshop teams. A single mound could support a kiln repaired and rebuilt over decades.

No excavated kiln has yet been analyzed for a view of its repertory or range of output. Ash-glazed bowls seem remarkably uniform in size, although their forms vary, as though a single size suited all uses to which they were put. Bird-shaped pots for lime paste, on the other hand, are one of the vessel forms that come in varying sizes (as well as in both glaze colors), suggesting that some were used by a single betel-quid chewer, others by groups (cat. nos. 57–60).

The majority of Khmer glazed stoneware ceramics appears to have been used by the elite class of society, in ceremonial or ritual circumstances. Virtually no documentary evidence survives to describe the use of glazed stoneware ceramics during the Angkorean period, so all suppositions about use must be drawn by cautious inference from such sources as stone bas-relief murals on the Bayon and Angkor Wat monuments, archaeological excavations, and by analogy with modern-day practices.⁴⁵

The ewer provides a case in point. The Hauge collection includes two examples, one with ash glaze and a handle (cat. no. 68) and one with iron glaze (cat. no. 67). This spouted vessel form originates in Indian vessels for pouring water. Stone bas-relief murals show that vessels of this shape were used in circumstances that probably pertain to daily life—in the royal court, not the village. (In the case of such representations, there is no way of knowing whether the vessel depicted was made of metal or ceramic.) For example, an attendant carrying such a vessel appears in a bas-relief on the south side of the external gallery of the Bayon (circa 1200), depicting a royal banquet in the forest; the servant holds the vessel against his chest with one wrist beneath the body, the other around the neck, in what Groslier described as a gesture of respect.⁴⁶ A conical lid protects the contents of the vessel. In another Bayon bas-relief, showing a house on stilts accessed by a set of steps, a spouted ewer with conical lid sits on a low platform at the foot of the steps. It rests on a flat tray supported by three elaborately detailed recurving feet, probably made of cast bronze. The ewer presumably is there to be used for drinking water, or for washing the hands (and feet?) before ascending the stairs.⁴⁷

Ewers were also used in court rituals. A twelfth-century sandstone lintel from the main sanctuary at Phimai in Buriram Province, Northeast Thailand, now on view in the Phimai National Museum, depicts the Vedic *asvamedha* ceremony, originating in India and performed by a king to establish his domain (fig. 15). A chosen horse was consecrated and released to roam at will for a year. The king and his army followed the horse, challenged the rulers of foreign territory into which it wandered and, if successful, sacrificed the horse at the end of the year.⁴⁸ The lintel depicts two rows of men



FIG. 15. DETAIL OF KHMER SANDSTONE LINTEL SHOWING EWER USED IN ASVAMEDHA CEREMONY. PHIMAI NATIONAL MUSEUM

facing a horse's head in the center, above which one man (the victorious king?) pours water from a spouted ewer over the right hand of another (the vassal ruler?).⁴⁹

Spouted ewers also appear explicitly as Buddhist ritual vessels in stone relief sculptures of the Buddha calling the earth to witness, on view in the National Museum, Phnom Penh. In one, a sandstone piece from the Bayon, dated early thirteenth century, a ewer holding five lotus buds arranged side-by-side rests directly beneath the throne on which the Buddha is seated.⁵⁰ Probably this scene reflects the use of ewers on Buddhist altars, holding bouquets of lotus buds, Buddhist emblems of spiritual purity. Ewers were also part of the ritual equipment of Hindu temples, used for lustrations of the images.⁵¹

Spouted ewers were among the abundant Khmer glazed stoneware recovered from the archaeological site of Sras Srang, which Bernard Groslier excavated in 1964.⁵² The site, located along the north side of the Sras Srang *baray* (rectangular pool), was the first cemetery to be identified in the Angkor region.⁵³ It proved to contain more than two hundred burials, with some three hundred bronzes and over one thousand ceramics. The site was used during two periods, in the second half of the eleventh century and again from the early thirteenth through fifteenth century. In each period, the ritual area was defined by clusters of three large jars buried at the four corners. The cremated remains were interred in ceramic containers of various sorts, surrounded by offerings that included other ceramics (both Khmer and Chinese), clay votive plaques, bronze mirrors, iron weapons, and lead ingots. The bronze objects included both Mahayana Buddhist and Hindu images, demonstrating the eclecticism of personal religious practices in Angkor.

The Khmer stoneware ceramics from this site were of various shapes and, according to Groslier, of various dates. It appears that no standard shape was prescribed for use in burial; any appropriate vessel at hand, including pieces that might have been passed down in a household for several generations, could be put to use, especially for the supplementary offerings. Thus the earlier level of the Sras Srang burial yielded a single elephant-shaped vessel, broken in half but carefully placed within a larger jar.⁵⁴ It also produced a sole brown-glazed anthropomorphic vessel, the neck of which had been neatly sawn off.⁵⁵ From this find it has been surmised, but certainly not proven, that anthropomorphic vessels were made specifically for

funerary use. The “sacrifice” of ceramic vessels for ritual burial, by breaking the neck or puncturing the bottom, seems to have been a longstanding Khmer practice, which Groslier found at sites as early as the seventh century.⁵⁶

The Sras Srang burial may have yielded the one example of a clearly “functional” use of Khmer stoneware ceramics. From the upper level was unearthed a group of three large vats (similar to cat. nos. 74, 75) “stuffed to the breaking point” with bronze Buddhist votive objects ranging in date from the twelfth through the fifteenth century. It is possible that this was not part of the cemetery as such but an emergency deposit made in expectation of imminent catastrophe, such as one of the Siamese attacks on Angkor.⁵⁷

In contrast to the contents of the Sras Srang burial, the excavation of the eleventh-century stone temple of Prasat Ban Phluang, located in what is now Surin Province, Northeast Thailand, provides one of the few published inventories of ceramics found in association with a temple, albeit a small provincial one.⁵⁸ When erecting a sacred building it was customary to bury a group of objects, including ceramics (sometimes the vessels for the deposit), beneath an inscribed stone in the sanctuary.⁵⁹ Foundation deposits, like burials of cremated human remains, however, used a variety of materials, not all necessarily new. The foundation deposit of Prasat Ban Phluang had been disturbed sometime in the past, but fragments of nearly four hundred high-fired ceramics were found in the vicinity of the temple. (The majority of these vessels were Khmer stoneware, mostly products of kilns in Buriram Province, or Khmer earthenware; only a few Chinese ceramics were found.) From the location of the sherds, the investigators proposed that most had been used as offerings. In addition, it is possible that some were used by the temple priests for daily rituals. Ash-glazed pieces in a limited range of shapes, including wide-bottomed bowls, small jars, covered cylindrical jars, covered boxes, and two conch-shaped vessels (compare cat. no. 61), constituted one quarter of the glazed ceramics. Unglazed stoneware vessels included basins and wide-mouthed bottles of types now associated with the kilns near Angkor. The iron-glazed wares included, in addition to shapes also found with ash glaze, a bowl-shaped vessel with interior stand (compare cat. no. 72), narrow-footed cups (compare cat. no. 71), and a variety of large jars, both pedestal-based and flat-based, with wide mouths or trumpet-shaped mouths, and large vats

CAT. NO. 58. BIRD-SHAPED LIME-PASTE JAR,
PROBABLY THAILAND, BURIRAM PROVINCE,
11TH–12TH CENTURY, WHITE STONEWARE
WITH ASH GLAZE, 7.0 X 9.0. GIFT OF
OSBORNE AND GRATIA HAUGE, S1996.146



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(compare cat. no. 74). One two-color glazed pedestal-based jar was present. Notably absent were lime pots and zoomorphic vessels.

Many Khmer zoomorphic vessels have been found to contain hardened lime paste (calcium hydroxide), one of the primary ingredients in the betel quid (e.g., cat. no. 58). Assuming that the lime deposits in Khmer vessels date to the Angkorean period and are not the result of ongoing use of these vessels in later times, they show that Angkorean Khmers used the zoomorphic stonewares as well as a variety of plain covered jars (cat. no. 55), as “lime pots.” (The lime paste must be kept in a tightly closed container to prevent its drying out; therefore the opening in the back of an anthropomorphic vessel is small. The paste was removed with a little scoop or with a fingertip.) The betel quid is chewed as a digestive and stimulant, but it also

has an important role in hospitality to guests and in rituals such as weddings.⁶⁰ Thus the variety of lime pots among glazed Khmer stonewares may be more properly defined as “ritual” rather than as “utilitarian” ceramics. Although they appear to be based in form upon bronze or silver vessels, they, like the more costly metal versions, may well have been used in gift exchange.⁶¹

Another essential part of the formal set of betel-chewing paraphernalia was the spittoon. Cambodian bronze spittoons of unknown date on view in the National Museum, Phnom Penh, are flat-bottomed vessels with swelling shoulders and wide mouths, often ornamented by bands of incised lines just below the rim. Perhaps some of the similar bowl shapes in Khmer ash-glazed stoneware (cat. nos. 63, 70) were used for that purpose.

Zoomorphic vessels occur in many forms, including elephants, horses, cats, anteaters, various birds, rabbits, turtles, and frogs. Among pieces recovered from the Buriram Province kilns, birds and elephants appear most numerous. Art historian Jean Boisselier, writing from the perspective of his Angkor-centered research, however, noticed that frogs and turtles were numerous, while elephants and rabbits were rare.⁶² The majority of these pieces appear to have been used as lime pots. Many bird-shaped lime pots are characterized by a sharp, hooked beak, large round eyes, and tail modeled and attached to a wheel-thrown jar, with wings indicated by incising (cat. nos. 57–60). These vessels have commonly been identified as “owls.” Cambodian anthropologist Ang Choulean, however, identifies this bird as an *ak*, the raptor *Haliaetus leucogaster*, a white-bellied sea eagle common in the Angkor region. According to him, people in present-day Siem Reap Province refer to all lime-paste vessels as *ak kampo* (*kampo* is the Khmer term for lime paste).⁶³ Some versions of this type of bird vessel bear four such faces looking in four directions. The deeper meaning of this association between the *ak* and the betel-quinid remains to be explored.

The function of the largest zoomorphic vessel in the Hauge gift remains a puzzle. The elephant-shaped vessel (cat. no. 76) has a small opening on the back, but it also bears a spout on the proper right shoulder. Such spouts appear on a number of other zoomorphic Khmer vessels (including one in the form of a seated monkey holding the spout between its upraised front paws⁶⁴), as well as in the lotus held by the double-figured anthropomorphic vessel in the

Hauge gift (cat. no. 83), suggesting that the vessels are ewers. The possible association of the elephant-shaped pouring vessel with water suggests the Hindu iconography of Gaja Lakshmi, the lustration of the goddess by two flanking elephants. The anthropomorphic vessel in the form of two figures seated back-to-back, holding lotus blossoms (one of which is a spout), may, on the other hand, have Buddhist associations. The figures' posture, with hands folded in prayer and both legs bent to one side or the other, is that adopted by worshipers in present-day Theravada Buddhist worship. It echoes that of a well-known fifteenth- or sixteenth-century wooden figure in the National Museum, Phnom Penh, that is known to come from a post-Angkorean Theravada Buddhist context.⁶⁵ (Stone sculptures and murals from the Buddhist monument of the Bayon, circa 1300, by contrast, show people seated with one knee up or kneeling on both heels.) If the Theravada association is correct, this vessel might have been used for the Theravada ritual of pouring water for the spirits of the ancestors.

Whether any Khmer glazed stoneware vessels were "simply utilitarian" remains to be demonstrated through archaeological excavations of domestic sites. The sole first-hand observations of everyday life in Angkor were left by a Chinese envoy, Zhou Daguan, who spent 1296–97 in Angkor.⁶⁶ Observing the dining customs of the Khmer, Zhou was struck by the absence of tables and chairs: diners sat on mats spread on the floor. Zhou noted that they used "Chinese dishes of clay or copper" for serving rice but, for serving and sipping sauce, they used bowls and spoons folded from leaves that were discarded after every meal. (The very wealthy used vessels of silver or gold.) Diners were also provided with bowls of pewter or clay holding water used for washing their hands (because they ate rice with their fingers). Wealthy people drank wine from pewter cups, poor from clay.⁶⁷ Might some of the wide-based ash-glazed bowls produced in such quantities at the Buriram kilns in particular (cat. nos. 63, 70) have served as finger bowls for households situated socioeconomically between the pewter users and the clay users—or as provincial substitutes for metal? Could the small hemispherical brown-glazed cups (cat. no. 71) be vessels for wine? Since examples of both vessel types also appeared among the Prasat Ban Phluang finds, however, a multivariant definition of "use" might be imagined for them. (The National Museum, Phnom Penh, displays undated,

flat-bottomed brass bowls [with stands] described as “for ritual water.”)

Both anthropomorphic and zoomorphic vessels come to mind from Zhou’s account of a puberty ritual for daughters of wealthy Khmer families, for which was constructed a high platform used to display clay figures of humans and animals.⁶⁸ The Chinese term for clay indicates that the figures were unfired, and they may well have been related to the unfired clay images shaped over wood and straw armatures made for Hindu rituals in South Asia. If so, they would have been destroyed by immersion in water at the conclusion of the ritual. Nonetheless this documentation of clay figures made for ritual use further supports the likelihood of a non-utilitarian purpose for the glazed stoneware figures also.

Jean Boisselier pointed out that Khmer inscriptions list objects only in their roles as ritual utensils or as materials dedicated to a temple establishment, although many objects so listed might equally well have played a role in domestic settings.⁶⁹ In some cases inscriptions on the objects themselves identify that specific vessel as a cult object. One of the few known ceramic vessels with an inscription is a tall cylindrical jar (of the type represented by cat. nos. 74, 75), now in the Ubon National Museum in Northeast Thailand, that bears on its shoulder a proper name—presumably that of the elite donor.⁷⁰ Today in Puri, in the eastern Indian state of Orissa, potters prepare jars of this size and shape to be used both for storage of grain in households and for preparation of special cooling beverages presented as offerings to the Vishnuite deities of Jagannātha Temple.

RELATIONSHIPS TO OTHER INDIGENOUS MEDIA AND REGIONAL TRADITIONS

If the majestic form and presence of the monumental stone temple-mountains may be taken as the aesthetic apogee of Angkorean period art, Khmer stoneware ceramics can be seen as one of the many echoes of those forms in smaller scale, simpler form, and different material. The visual cohesiveness at all levels of Angkorean material culture is one of its remarkable features. These correspondences apply to both form and decoration.

Study of the stone monuments reveals, in turn, a reflection in more enduring materials of an architecture of wood, now almost entirely lost. The expressive carving on tenth-century stone monu-

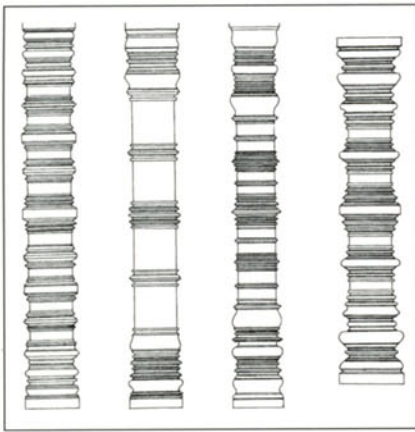


FIG. 16. LATHE-TURNED SANDSTONE BALUSTERS FROM WINDOWS OF KHMER MONUMENTS. AFTER JEAN BOISSELIER, *LE CAMBODGE* (PARIS: A. AND J. PICARD, 1966), FIG. 47

ments in particular shows that the stonecarver's aesthetic was shaped by the woodworker's approach to material, both in the crisp cutting of curving floral motifs around doorways and window frames and in the turning of the columns, pilasters, and balusters.⁷¹ (Later monuments lost this individual touch in repetitive, mechanical motifs.) The lathe-turned balusters, in particular—series of which filled window openings like a grill (fig. 16)—reflect the lathe-carved wooden forms that must have been their models, while both are echoed in the rhythmically undulating contours of many Khmer stoneware jars with their tiers of wheel-carved flanges. Jars with columnar necks and pedestal bases (cat. nos. 65–68) are aptly known as “baluster jars.” Surely the Khmer potters manipulated clay on their potters’ wheels with acute awareness of the forms turned out on woodworkers’ and stoneworkers’ lathes.

Khmer stoneware ceramics also show multiple levels of correspondence with metal. In the South Asian-influenced Khmer hierarchy of materials, metals stood above ceramics, with gold at the pinnacle. Very few gold or silver Angkorean vessels survive, but extant bronze vessels are sufficient to show a close relationship among many vessel forms executed in bronze and stoneware clay. Bronze bottles and ewers correspond to those forms in glazed stoneware, with details more finely rendered by virtue of the material. A number of small bronze zoomorphic vessels have been recovered from burials in the Phimai region of Northeast Thailand, including one in the shape of a songbird and another in the form of a reclining deer.⁷² Details of the faces and limbs of these vessels (cast using the lost-wax technique) are outlined with two parallel lines filled with hatching—such as also appear on some ceramic anthropomorphic and zoomorphic vessels (cat. nos. 62, 76, 83). Similarly, a correspondence can be seen between the schematic rendering of the faces on anthropomorphic vessels—especially the puffy eyes and swollen lips—and the faces of coarser varieties of cast-bronze images, perhaps the sorts of images that clay-workers had the most likelihood of seeing.⁷³

In these instances, the bronze and glazed ceramic versions of the same vessel forms appear destined for customers of differing social status, rather than the latter's being a “copy” of the former. It can be imagined that changes in style were reflected in both materials. Bernard Groslier felt that the pale green ash glaze over white clay

used in the small ceramic lime pots conveyed a relationship to silver: such ceramic vessels were “the ‘silverware’ of the poor.”⁷⁴ Similarly he saw large ceramic vessels with brown glaze as corresponding to the color of polished bronze vessels.

A different relationship is seen in the elephant-shaped ceramic vessels (cat. no. 76) that echo in greatly reduced size the monumental bronze sculpture of a three-headed elephant (vehicle of the Vedic god Indra) cast in the late twelfth or early thirteenth century and now in the Arakan pagoda in Mandalay, Burma (Myanmar).⁷⁵ (Monumental stone elephants are also known.⁷⁶) In this case, the elephant-shaped ceramic vessels reflect figural sculptural conventions followed in other materials in larger scale, much as Khmer ceramic vessel forms mirror architectural forms.

As rare surviving pieces of Khmer gold jewelry attest, and as three-dimensional stone images and the relief murals of the Bayon also show, the elite society of Angkor wore lavish sets of jewelry and followed established conventions for its variety and placement. Bands of gold encircled the noble wearer’s forehead, neck, upper arms, wrists, waist, and ankles, and heavy gold earrings stretched the ear lobes. Jewelry of this type is suggested on the anthropomorphic vessels (cat. nos. 54, 79, 83). In a more abstract sense, many Khmer vessels, particularly the varieties of “baluster jars,” may be said to be adorned in a similar fashion by the bands of incised or relief decoration that define the mouth rim, the angle between neck and shoulder, the shoulder, the hip, and the foot. Crosshatch combing in the ceramic version evokes the chased ornament on heavy gold belts or armlets. Some jars even wear “necklaces” of applied bits of clay that closely resemble the pendant ornaments on the jewelry of some carved stone figures (cat. no. 66).

Both bronze and glazed ceramic replicas exist of a precious imported object, the conch shell, that had dual ceremonial importance in Angkor, both as ritual lustration vessel and (with hole drilled in the crown) as horn. (Zhou Dagan described the resonating conch-shell horns that announced the approach of the ruler for his daily audience in the palace.⁷⁷) As we have seen, conch-form horns in glazed stoneware (cat. no. 61) faithfully replicated in clay the interior chambers of the shell that create its resonant sound.

Certain other aspects of the form of Khmer glazed stoneware vessels relate to the earthenware vessels that were produced in the



FIG. 17. POTTER HOLDING WATER JAR,
KOMPONG CHHNANG, CAMBODIA, 1997

region long before stoneware and have continued to be made to the present day. With regard to the prototypes for the forms of many distinctive Khmer ceramic jar forms, art historian John Guy has pointed out the likelihood of their being based on Indian metal prototypes—vessels that might have been brought to Southeast Asia during the early centuries of contact and created the repertory of ritual vessel forms in local usage.⁷⁸ We do not know when Khmer metalsmiths began casting and raising bronze vessels. Locally made earthenware replicas of Indian vessels (especially the wheel-turned earthenware found in excavations by the late sixth century, although hand-built pottery is perfectly capable of assuming such forms) may well have served as a bridge between the metal originals and the glazed stoneware forms, which seemingly do not appear in great numbers until the development of iron glaze sometime in the eleventh century.

A slightly separate question pertains to the ultimate origin of the “baluster jar” as a ceramic (or metal) vessel shape. It may be that the pedestal-footed vessel in either material originates with a round-bottomed earthenware vessel placed on a separate dumbbell-shaped stand when used as a ritual vessel. The Khmer pedestal base incorporated the stand into the vessel form.

An enduring and powerful aspect of Khmer ceramic jar form (also reflected in surviving bronze vessels) is the invariable placement of a horizontal line slightly above the fullest part of the body, which tends to occur well above the midpoint (cat. nos. 65–67, 73). This line effectively emphasizes the swelling fullness of the body beneath it, which often tapers to a narrow foot balanced on an everted base. This approach to formal design survives in earthenware drinking-water jars made by Cambodian village potters today (fig. 17).

EXCHANGE AND TRADE

The distribution of Khmer stoneware ceramics in archaeological sites and scattered finds seems to correspond closely to the outer boundaries of the territorial expanse of Angkorean influence within mainland Southeast Asia. There is little if any evidence that Khmer stonewares ever entered the dynamic network of international trade that swept up Vietnamese, Cham, and Thai ceramics by the mid-fourteenth century. Indeed, by that time, according to present inter-

pretation, Khmer glazed stoneware production seems to have ceased.

The distribution of Khmer ceramics within the outlines of the Angkorean domain reinforces the sense that their primary role was closely linked to the religious and social rituals identified with Khmer culture and their market was defined entirely by this function. The distribution of Khmer stoneware followed the spread of that culture, a process mapped most clearly by surviving remains of Khmer-style stone monuments and associated sculpture and inscriptions in present-day Vietnam, Laos, and Thailand.⁷⁹ No Khmer ceramics have been uncovered in the seaborne trade-route destinations of insular Southeast Asia, West Asia, or Japan. The Chinese envoy Zhou Daguan, listing trade goods sought by Chinese merchants in Angkor in the late thirteenth century, made no mention of ceramics. From the Chinese perspective, he saw value in the natural resources of the highlands, including rare wood, elephant ivory, rhinoceros horn, kingfisher feathers, and lacquer sap. All these raw materials were destined to be transformed at the hands of Chinese crafts specialists.

Conversely, imported trade goods, including ceramics, played an important role in Khmer material culture. In Zhou's list of the Chinese goods sought by the Khmer, finished products predominated—chief among which were multicolored silk textiles, pewter from Zhenzhou, lacquered trays from Wenzhou, and celadon ceramics from Quanzhou.⁸⁰ (The exceptions were unworked gold and silver, which Zhou said were not mined locally.) Zhou identified these products by the seaports from which they were shipped, reflecting the bureaucratic organization of Chinese foreign trade.⁸¹ The green-glazed ceramics dispatched to Angkor from Quanzhou were gathered from the numerous kilns operating in southern Fujian Province that produced celadon, white and *qingbai* porcelain, and brown and black-glazed ware. These wares found their way to diverse destinations including Japan and the Philippines.

Archaeological finds of Chinese ceramics within the Angkorean domain demonstrate that Khmers were eager consumers of Chinese ceramics and that quantities increased exponentially over time. In the excavations that Bernard Groslier conducted within the royal palace site, he found that for every one Northern Song (960–1127) Chinese ceramic sherd, there were two Southern Song (1127–1279) sherds, three Yuan (1279–1368) sherds, and four

early Ming (1368–1644) sherds.⁸² He felt that even the Northern Song sherds outnumbered those of local glazed stoneware.⁸³

Later levels of excavations also yielded the sorts of Southeast Asian glazed wares that entered the international trade network. Thai wares uncovered during the 1996–98 French excavations at the royal palace included celadon-glazed and brown-glazed stonewares from the Si Satchanalai (also known as Sawankhalok) kilns and dishes with iron-painted fish motifs from the Sukhothai kilns; Northern Vietnamese iron-decorated dishes were also found. These pieces date from the fourteenth century and later, presumably post-dating the latest production of Khmer glazed ceramics. The abundance of Thai wares in particular reflects not simply the absence of Khmer pieces but the increased cultural as well as political dominion of the Ayutthaya kingdom in the region. Found in abundance at Angkor sites are small, brown-glazed Si Satchanalai bottles, whose function in Ayutthayan culture is not understood. It might be reasonable to speculate that their presence in Cambodia offers evidence of a ritual role for such bottles in the Theravada Buddhist practices that spread to Angkor by the fourteenth century, largely replacing the Brahmanic and Mahayana Buddhist practices of earlier times.⁸⁴

The question of how to interpret the influence of the imported Chinese ceramics on Khmer glazed stoneware production involves both style and technology. Groslier believed that Angkorean production of glazed stoneware was complementary to imports coming from China, ceasing to make shapes (boxes and bowls especially) that were superior in their Chinese versions and concentrating on a limited number of forms for which Chinese imports provided no substitutes.⁸⁵ Fragments of Chinese qingbai porcelain boxes have been found mixed with Khmer stonewares at kiln sites in the Ban Kruat region, showing that Khmer potters sometimes had their models directly at hand.⁸⁶

Recently the Japanese scholar Tsuda Takenori has challenged this view of strictly one-way influence, pointing out that Chinese export-centered kilns were always highly pragmatic in their response to overseas markets.⁸⁷ Some shapes found among Chinese ceramics made largely for export at coastal kilns are not Chinese at all but instead replicate shapes preferred by their destination markets (for example, the *kendi* form of spouted ewer made for various Southeast Asian markets). Tsuda also notes that the shapes in early Khmer

glazed stonewares said to “imitate” forms imported from kilns in Guangdong Province—boxes and small bottles—constitute only one minor aspect of the highly diverse production at those Chinese kilns. He suggests that the Khmer market for Chinese ceramics was discriminating, accepting only the shapes that suited local needs.⁸⁸ Indeed, it is not impossible that Chinese merchants could have conveyed models to the Chinese kilns in the form of Khmer wheel-thrown earthenware bottles based on Indian-inspired metal shapes. The Phimai National Museum owns an eleventh-twelfth century Chinese qingbai porcelain vessel found in the Phimai sanctuary, whose cylindrical form with overlapping knobbed lid faithfully corresponds to the ash-glazed or unglazed cylindrical lidded vessel known from Khmer sites from as early as the ninth century (cat. no. 53). It remains to be established just where the form originated.

At the very least, the questions of stylistic relationships and technological relationships have to be considered separately, and the assumption that the technology package for glazed stoneware was introduced from a kiln in Guangdong Province just because early Khmer ash-glazed ceramics resemble wares from those kilns needs to be treated with caution. Archaeological excavations at the Khmer kiln sites in Buriram Province, Northeast Thailand, and in the Angkor region indicate that the Khmer kilns show some similarities to the “dragon” (*long*) kilns of southeastern China, including their construction atop artificial mounds. But the technological resemblances must extend to the kiln stacking devices before a precise “origin” for Khmer stoneware technology can be confirmed. Tsuda points out that the Tani kilns make use of small clay wedges for propping up vessels, whereas no such tools are reported for the Guangdong kilns. Conversely, the Guangdong kilns made use of a variety of other props not yet found at the Tani site.⁸⁹

The repertory of Khmer glazed stoneware richly represented in the Hauge collection gives us access to the makers and consumers of such wares in the Angkorean period in a way that stone monuments and royal chronologies cannot. Khmer stoneware ceramics demonstrate a preference for stately architectural forms underscored by geometric decoration and simple glazing in green, brown, or both colors. They also reveal the Khmer potter’s skill at deftly transforming vessels into human or animal shapes and suggest the users’ appreciation of such metaphorical vessels. Although ceramics constitute

just one aspect of Khmer material culture—a category presumably subordinate to vessels of precious metals or to imported Chinese ceramics—they have survived in the way that fired clay objects do, and they pose many unanswered questions surrounding their manufacture and use and the society that created them. Fortunately, the way is now open for renewed research that should bring us many new answers.

NOTES

1. See Stanley J. Tambiah, "World Conquerer and World Renouncer: A Study of Buddhism and Polity," in *Thailand Against a Historical Background* (Cambridge: Cambridge University Press, 1976), 102–11. Also see Charles Higham, "The Angkorian Mandala: A.D. 802–1431," *The Archaeology of Mainland Southeast Asia* (Cambridge: Cambridge University Press, 1989), 321–55; and David Chandler, *A History of Cambodia* (Boulder, Co.: Westview Press, 2000), 9–76. For a general discussion of early mainland Southeast Asia, see Keith Taylor, "The Early Kingdoms," *The Cambridge History of Southeast Asia* vol. 1, ed. Nicholas Tarling (Cambridge: Cambridge University Press, 1992), 137–82.

2. Thierry Zephir, *Khmer, the Lost Empire of Cambodia* (New York: Harry N. Abrams, 1998), 90.

3. Bernard P. Groslier, "Introduction to the Ceramic Wares of Angkor," in *Khmer Ceramics: 9th–14th Century*, ed. Diana Stock (Singapore: Oriental Ceramic Society, 1981); Roland Mourer, *La Poterie au Cambodge: Histoire et Développement. Essai d'Ethno-technologie* (Paris: École des Hautes Études en Sciences Sociales, 1986), doctoral dissertation, 3 vols.

4. Groslier, "Introduction to the Ceramic Wares of Angkor," 14–15. An earlier date for the first appearance of wheel-thrown earthenware ceramics in the Mekong Delta has been indicated by recent work of archaeologists at the pre-Angkorean site of Angkor Borei (Miriam Stark et al., "Results of the 1995–1996 Archaeological Field Investigations at Angkor Borei, Cambodia," *Asian Perspectives* 38, no. 1 [1999], 29).

5. The presence of updraft kilns used to fired earthenware has been reported for the kiln sites in Buriram Province, Northeast Thailand (Tharapong Srisuchat and Amara Srisuchat, "Introducing Buriram Ceramics

and Kilns," *The Silpakorn Journal*, 33, no. 2 [May–June 1989], 52). The two earthenware vessels in the Hauge collection probably were made at a site in Northeast Thailand.

6. See Roxanna M. Brown, *The Ceramics of South-East Asia*, 2d ed. (Singapore: Oxford University Press, 1988), pls. XX-a (jar) and 25-a (basin).

7. Groslier, "Introduction to the Ceramic Wares of Angkor," 27.

8. The posture of these figures, associated with Theravada Buddhist worship, differs from the position of veneration (with one knee up) represented in murals in Angkorean monuments; this may help date the vessel to the late Angkorean or even post-Angkorean period.

9. Sculptures in human form include an iron-glazed Buddha seated in meditation on the serpent Mucalinda in the Art Gallery of South Australia (John Guy, "A Reassessment of Khmer Ceramics," *Transactions of the Oriental Ceramic Society* 61 [1996–97], fig. 32), an ash-glazed male torso wearing a loin-cloth (Sathaporn Khwanyuen, "The Excavation of Baranae Kiln Site, Thailand," in *SPAFA Final Report, Technical Workshop on Ceramics* [Bangkok: SPAFA, 1985], 142, 165), and an iron-glazed male torso, probably a deity (Hiroshi Fujiwara, *Khmer Ceramics from the Kamratan Collection in the Southeast Asian Ceramics Museum, Kyoto* [Singapore: Oxford University Press, 1990], fig. 126). An unpublished ash-glazed female seated figure is in the collection of the Wittayakan School, Ban Kruat District, Buriram Province.

10. The three cow bells excavated from the Khok Lin Fa kiln site, Ban Baranae, Lahansai District, Buriram Province, are shown in Sathaporn, "The Excavation of Baranae Kiln Site, Thailand," 142, 166. One bell found at another Ban Baranae

kiln site bore a three-character Khmer inscription that has not been interpreted (Tharapong Srisuchat and Amara Srisuchat, "Introducing Buriram Ceramics and Kilns," *The Silpakorn Journal* 33 no. 2, fig. 10).

11. Groslier, "Introduction to the Ceramic Wares of Angkor." The French-language text of Groslier's essay was published posthumously, with some notes and amendments, as "Introduction à la Céramique Angkorienne (fin IXe—début XVe s.)," *Péninsule* 31 (1995), 5–59.

12. Brown, *The Ceramics of South-East Asia*, 50–53.

13. Working at the very beginning of serious study of trade ceramics, Groslier also was obliged to develop his own chronology for Chinese provincial ceramics of the sort found in Angkorean sites. P. Groslier, "Our Knowledge of Khmer Civilization, a Re-appraisal," *Journal of the Siam Society* 48, part 1 (June 1960), 17–18.

14. This study is being conducted by Marc Franiatte of the French Archaeological Mission in Cambodia. Marc Franiatte, "Nouvelles analyses de la céramique khmère du Palais royal d'Angkor Thom: Étude préliminaire," *Udaya, Journal of Khmer Studies* 1 (2000). On imported ceramics in the palace site, see Marie-France Dupoizat, "La céramique importée à Angkor: étude préliminaire," *Arts Asiatiques* 54 (1999), 103–16.

15. I am grateful to Pamela Vandiver, Smithsonian Center for Materials Research and Education, for illuminating discussions of the properties and technology of Khmer stoneware ceramics.

16. Khmer potters may well have followed procedures similar to those used by potters making unglazed stoneware in Northeast Thailand today, mining their clay from underground veins reached from deep pits and soaking the hard chunks in

water to make a workable mass that was kneaded and used without any additions. Archaeologists who excavated at the Khok Lin Fa kiln site (cf. n. 10) in Ban Baranae, Lahansai District, Buriram Province, in 1984, found a large pit with a diameter of fifteen to twenty meters that they interpreted as the clay pit for the workshops connected to the thirty kilns in that site. Sathaporn, "The Excavation of Baranae Kiln Site, Thailand," 143.

17. A Japanese example is shown in Louise Allison Cort, *Shigaraki, Potters' Valley* (Tokyo: Kodansha International, 1979), figs. 267–73.

18. An alternative hypothesis, not yet confirmed by experimentation, is that molds (perhaps made of low-fired clay) attached to the wheel head were used to shape the base of bowls and other small vessels: with the wheel spinning, a lump of clay was pressed into the mold, then thrown to form the vessel. This would account for the low but pronounced "foot rim" around the perimeter, seemingly not formed by trimming yet higher than the wrinkled surface of the base. This time-saving procedure would eliminate a separate step to trim the base. It would also help to account for the characteristic presence of a tall bevel on the wall above the base of many Khmer ceramic forms, most notably bowls, but also small jars; the height of the bevel might represent the height of the mold, over the upper edge of which the potter inserted a cutting tool to incise a groove in the vessel wall. Typical of Khmer ceramic decoration, such a bevel might also have helped control the flow of glaze toward the foot.

19. The most striking example of this ornamental use of incised lines filled with iron pigment under an ash glaze appears on an elephant-shaped lime pot in the National Museum of Cambodia, Phnom Penh (illustrated in John Guy, *Ceramic Traditions of South-East Asia* [Singapore: Oxford University Press, 1989], pl. 7).

20. *A Ceramic Legacy of Asia's Maritime Trade* (Kuala Lumpur: Southeast Asian Ceramic Society and Oxford University Press, 1985), 5–6 and nos. 105–11.

21. John Stevenson and John Guy, *Vietnamese Ceramics, A Separate Tradition* (Chicago: Art Media Resources with Avery Press, 1997), no. 155 and others following.

22. *Ibid.*, no. 61 and others following.

23. According to Roxanna Brown (*The Ceramics of South-East Asia*, 44), combed decoration appears on ceramics from the Northeast Thai kilns by the mid-eleventh century.

24. Tsuda Takenori, "Khmer Green Glazed Wares in the Early Period," *Oriental Ceramics* 28 (1998–99), 123.

25. Groslier, "Introduction to the Ceramic Wares of Angkor," 23, 27. Groslier proposed, but did not have excavated evidence to prove, that the brown glaze appeared by the end of the tenth century.

26. When Roy Galloway visited the Ban Kruat kiln site in 1973, villagers told him that the nearest known source of white clay lay several kilometers to the south, across the present border with Cambodia.

27. Groslier, "Introduction to the Ceramic Wares of Angkor," 26–27.

28. Etienne Aymonier, *Les Provinces Siamoises. Le Cambodge*, vol. 2 (Paris: Ernest Leroux, 1901), 414.

29. Some of these finds from Phnom Kulen were published in A. Silice and George Groslier, "La Céramique dans l'Ancien Cambodge (Essai d'Inventaire Général)," *Arts et Archéologie Khmers* 2 (1924–26), pl. 10, nos. 9–13. Similar pieces appear in Brown, *The Ceramics of South-East Asia*, 43, fig. 30.

30. While archaeological investigations have focused on kilns within Buriram Province, leading to use of the term "Buriram kilns" as equivalent to Khmer kilns sites in Northeast Thailand, finds of Khmer ceramics have been made much more widely and kilns may be located elsewhere as well. Traveling through Khorat Province (to the west of Buriram) in the 1880s, Etienne Aymonier described a ruined sanctuary surrounded by a wall and moat and, nearby, an earthen dike running east-west with "debris of glazed pottery"

scattered along the top, much as he described the finds on Phnom Kulen—although he did not mention kiln debris (Aymonier, *Les Provinces Siamoises*, 104). I am grateful to Leedom Lefferts for this reference.

31. Mrs. Suwanna Bansom, a teacher at the Wittayakan School, Ban Kruat District, recalled how villagers happily sold kiln mounds "by the truckload" to outside people (agents of Bangkok antique dealers?) willing to pay to clear their fields. Realizing the loss to the local cultural record, she initiated the formation of a collection of sherds to be kept at the school. The debris from kiln mounds became the source of nearly complete pieces but also of fragments that were artfully joined together and sold to unsuspecting collectors. Many pastiches appear in collections formed in the 1960s and 1970s.

32. Sathaporn, "The Excavation of Baranae Kiln Site, Thailand," 137–68; Brown, *The Ceramics of South-East Asia*, 44–47; and Natthapatra Chandavij, "Ancient Kiln Sites in Buriram Province, Northeastern Thailand," in *Ancient Ceramic Kiln Technology in Asia*, ed. Ho Chuimei (Hong Kong: Centre of Asian Studies, University of Hong Kong, 1990), 230–43.

33. The Nai Jian kiln (excavated 1987) and Sawai kiln (excavated 1988), both in Ban Kruat District, are now protected as open-air museums. This interpretation is based on observation of these sites in the company of archaeologist Narasaki Shoichi and potter Matsubayashi Hosai XV and also draws upon an unpublished document kindly provided by archaeologist Don Hein.

34. No examples of the Guangdong boxes have been documented in Cambodia, but they were exported to Indonesia and the Philippines. James C. Y. Watt, "Hsi-ts'un, Ch'ao-an and other Ceramic Wares of Kwangtung in the Northern Sung Period," in *Guangdong Ceramics from Butuan and Other Philippine Sites*, ed. Roxanna M. Brown (Manila: Oriental Ceramic Society of the Philippines, 1989), 40, figs. 10, 12, nos. 81–83. The Khmer-Guangdong connec-

tion was discussed in Roxanna M. Brown, "Guangdong: A Missing Link to Southeast Asia," in *Guangdong Ceramics*, 81–85. Tsuda Takenori has cautioned, however, that kiln-stacking technology at the Tani kilns (as deduced from surface finds) differs from that reported for the Guangdong kilns. Tsuda, "Khmer Green Glazed Wares in the Early Period," 123–25.

35. In addition to Tsuda, "Khmer Green Glazed Wares in the Early Period," publications on the three sites include Aoyagi Yoji et. al., "Investigation of Tani Kiln Site Group, Angkor 6–18 August 1996," trans. Louise Cort, *Renaissance Culturelle du Cambodge* 15 (1998), 257–66, and Aoyagi Yoji et. al., "Report of the Fourth Investigation of Kiln B1, Tani Kiln Complex, Angkor Region," trans. Louise Cort, *Renaissance Culturelle du Cambodge* 16 (1999), 271–77.

36. I am indebted to Dr. Patrizia Zolse, head of the Wat Phu project, for showing me this site in 1997. Some archaeologists have proposed that the deposits indicate a rubbish heap rather than a kiln site.

37. Groslier, "Introduction to the Ceramic Wares of Angkor," 17.

38. Tsuda, "Khmer Green Glazed Wares," 124.

39. David J. Welch, "Archaeology of Northeast Thailand in Relation to the Pre-Khmer and Khmer Historical Records," *International Journal of Historical Archaeology* 2, no. 3 (1998), 208.

40. In present-day Cambodia, the long-distance distribution of earthenware produced in villages in Kompong Chhnang (Pot Province) is a striking feature of the economy—and one quite distinct from practices in Thailand and Laos—although it may represent a relatively recent concentration of production as other sources of earthenware closed down.

41. Nitta Eiji, "Ancient Industries, Ecosystem, and Environment: Special Reference to the Northeast of Thailand," *Historical Science Reports, Kagoshima University* 39 (1992), 610–80, quoted in Welch, "Archaeology of Northeast

Thailand," 229.

42. This issue is a focus of ongoing research by Dr. Elizabeth Moore, School of Oriental and African Studies, University of London.

43. Groslier, "Introduction to the Ceramic Wares of Angkor," 21.

44. Stoneware produced in Cambodia today is made by Vietnamese potters.

45. Visiting the ruins of Khmer sacred sites in Northeast Thailand in the 1880s, Etienne Aymonier noticed "numerous fragments of ancient pottery" strewn all around the major shrine of Phnom Rung. Aymonier, *Les Provinces Siamois. Le Cambodge*, vol. 2, 414. By contrast, archaeologist David Welch was struck that his excavation of Khmer habitation sites in the Phimai region yielded mostly undecorated earthenware, with glazed Khmer stoneware amounting to only one to three percent of the sherds. He interpreted this to mean that Khmer vessels were passed down as heirlooms—but it is equally possible that they simply did not reach this level of the population. Welch, "Archaeology of Northeast Thailand in Relation to the Pre-Khmer and Khmer Historical Records," 216–17.

46. Groslier, "Introduction to the Ceramic Wares of Angkor," fig. C.

47. Chou Ta-Kuan, *The Customs of Cambodia*, 2nd ed. (Bangkok: Siam Society, 1992), 60. Cast bronze bases of similar form are published in George Groslier, *Arts et Archaeologie Khmers* I, fasc. 2 (1921–22), pl. XIII.

48. John Dowson, *A Classical Dictionary of Hindu Mythology and Religion, Geography, History, and Literature* (London: Trubner, 1879), 28.

49. Published in Michael Freeman, *A Guide to Khmer Temples in Thailand and Laos* (Bangkok: River Books, 1996), 91.

50. Published in George Groslier, "Les Collections Khmères du Musée Albert Sarraut a Phnom-Penh," *Ars Asiatica* 16 (1931), pl. X.

51. An ash-glazed ewer (or bottle—the physical description is minimal), said to have been found in Siem Reap Province and now in a private Japanese collection, bears an inscription on the body, in script

associated with the eleventh century, that records the dedication of the vessel for the illustration of the sacred image by a government official. Ishizawa Yoshiaki, "Bin no hyomen ni kizamareta hikokumon ni tsuite (Concerning an epitaph inscribed on a bottle surface)," *Renaissance Culturelle du Cambodge* 14 (1997), 53–55.

52. Two ewers are published in Brown, *The Ceramics of South-East Asia*, pl. XXII-a, 26-c. The excavation is described in Paul Courbin, *La Fouille du Sras-Srang*, Collection de Textes et Documents sur L'Indochine XVII (Paris: École Française d'Extrême-Orient, 1988). Unfortunately almost all documentation for the excavation was destroyed after Bernard Groslier was forced to leave Angkor in 1972. For other objects recovered from the site, see Bernard Philippe Groslier, *Indochina* (London: Muller, 1967), pls. 71, 139–45, and Brown, *The Ceramics of South-East Asia*, pls. XVI, XX–XXIII, 24, 26–28.

53. Courbin, *La Fouille du Sras-Srang*, 21.

54. *Ibid.*, 23.

55. Groslier, *Indochina*, pl. 144; Brown, *The Ceramics of South-East Asia*, pl. 28-c.

56. Groslier, "Introduction to the Ceramic Wares of Angkor," 14.

57. Courbin, *La Fouille du Sras-Srang*, 21, 25, fig. 42.

58. Vance Childress and Roxanna Brown, "Khmer Ceramics at Prasat Ban Phluang," *Arts of Asia* 8, no. 1 (January–February 1978), 66–73.

59. For example, a Khmer ash-glazed stoneware cylindrical lidded urn was used to bury a sacred deposit found in a mound in a rice field in Buriram Province, Northeast Thailand. The deposit included a silver bowl with Khmer inscription giving a twelfth-century date, a small stone image, a miniature turtle carved from a tuber and bound with silver foil, a wax candle, several cords, some bronze bells, and a number of stones and stone beads. This deposit was interpreted as a personal offering to Shiva as Lord of Phnom Rung, the major Khmer sanctuary located nearby (Nandana Chutiwongs, "To Kammratan Jaget Vnam Run," *The Silpakorn Journal* 33, no. 2

(May–June 1989), 56–63.

60. Present-day uses of betel in Cambodia (undoubtedly influenced by the predominance of Theravada Buddhism) are described in Solange Thierry, *Le Bétel. Inde et Asie du Sud-Est*, supplement to *Objets et Mondes*, 10, no. 3 (Paris: Musée de l'Homme, 1969), 229–54.

61. Socio-ritual aspects of the betel quid are discussed in P. A. Reichart and H. P. Philipsen, *Betel and Miang* (Bangkok: White Lotus, 1996), 23–32. In the nineteenth century the Siamese king and queen presented silver boxes for betel-quid paraphernalia to favored courtiers (50).

62. J. Boisselier, *Le Cambodge*, Manuel d'Archéologie d'Extrême-Orient part 1, *Asie du Sud-Est*, vol. 1 (Paris: Picard, 1966), 370. Boisselier also noted the abundance of fish-shaped objects.

63. The *ak* is said to cry loudly for its absent mate. An eighth-century temple on the edge of the West Baray in Angkor is called Ak Yum, "weeping *ak*." I am grateful to Ang Choulean for this identification, to Frank Huffman for providing the Latin name, and to Pamela C. Rasmussen, National Museum of Natural History, Smithsonian Institution, for giving me the common name. The term is mentioned by Boisselier, *Le Cambodge*, 344 and 351, with regard to metal lime-paste containers but is not applied to zoomorphic ceramic containers.

64. Dawn Rooney, *Khmer Ceramics* (Singapore: Oxford University Press, 1984), pl. 48.

65. Helen Ibbitson Jessup and Thierry Zephir, eds., *Sculpture of Angkor and Ancient Cambodia: Millennium of Glory* (Washington, D.C.: National Gallery of Art, 1997), no. 117.

66. Zhou Dagan's memoir was translated by Paul Pelliot in 1902 and reprinted as *Mémoires sur les Coutumes du Cambodge de Tchou Ta-kouan*, Oeuvres Posthumes de Paul Pelliot III (Paris: Librairie d'Amérique et d'Orient, 1951). An English translation is available as Chou, *The Customs of Cambodia*.

67. Pelliot, *Mémoires sur les Coutumes du*

Cambodge, 30–31.

68. *Ibid.*, 18; Chou, *Customs of Cambodia*, 18. I am grateful to archaeologist Miriam T. Stark, University of Hawaii, for first drawing my attention to this passage, and for her introduction to Geoff Wade, University of Hong Kong, who kindly provided the original Chinese text and his English version, part of a new translation of the Zhou Dagan document that he is preparing.

69. Boisselier, *Le Cambodge*, 330–31.

70. The inscription reads "Vrah kamraten an Sut Stuk." George Coedès, *Les collections archéologiques du Musée national de Bangkok*, *Ars Asiatica* 12 (Paris and Brussels: Editions G. van Oest, 1928), pl. XXVIII. The jar (with missing rim) is 45.0 centimeters high. "Vrah kamraten an" means "holy man of high rank"; Sut Stuk is taken to be a personal name. See also note 51 for another inscribed vessel.

71. Boisselier, *Le Cambodge*, 139–204.

72. The deer-shaped vessel was excavated from the Phimai site of Meru Brahmata, a stupa erected to commemorate the death of Angkorean ruler Jayavarman VII (reigned 1181–1219). I am grateful to the director of the Phimai National Museum, Khun Tassanee Bhikul, for providing information on these pieces in the museum collection. A bronze vessel in the shape of a kneeling water buffalo in the Suan Phka Tevoda Collection is published in Piriya Krairiksh, *Khmer Bronzes* (Lugano, Switzerland: Corner Bank, 1981–82), no. 21.

73. Jessup and Zephir, *Sculpture of Angkor and Ancient Cambodia*, no. 108.

74. Groslier, "Introduction to the Ceramic Wares of Angkor," 35.

75. Boisselier, *Le Cambodge*, pl. LVII, 3.

76. Jessup and Zephir, *Sculpture of Angkor and Ancient Cambodia*, no. 84.

77. Pelliot, *Mémoires sur les Coutumes du Cambodge*, 35.

78. Guy, "A Reassessment of Khmer Ceramics," 43–44.

79. The distribution of Khmer monuments in modern-day Thailand and Laos is detailed in Michael Freeman, *A Guide to Khmer Temples in Thailand and Laos*

(Bangkok: River Books, 1996). The greatest density of Khmer ceramic finds has occurred in Northeast Thailand, and the wares are well represented in the national museums in Khon Kaen, Ubon, and Phimai, as well as at the Center for Northeast Thai Culture at Wat Mahachai, in Mahasarakham. Roxanna Brown recorded a group of Khmer ceramics found along the eastern coast of peninsular Thailand ("The South-East Asian Wares—Introduction," in *South-East Asian and Chinese Trade Pottery* [Hong Kong: Oriental Ceramic Society, 1979], 146). Very few if any Khmer ceramics appear to have been recovered from the mountaintop burial sites along the border between northern Thailand and Burma, which in the mid-1980s yielded great quantities of Chinese, Thai, Vietnamese, and Burmese ceramics dating to the 14th through 16th centuries. (John Shaw, "Tak Hilltop Burial Sites," *Arts of Asia*, 15, no. 4 [July–August 1985], 95–102, mentions just one Khmer elephant-shaped vessel allegedly found in a grave in this area.)

The presence of Khmer ceramics and associated monuments in southern Vietnam is becoming clearer through renewed excavations at Oc Eo, conducted jointly by the Center of Archaeology, Institute of Social Sciences, Ho Chi Minh City, and the École Française d'Extrême-Orient. See Pierre-Yves Manguin and Vo Si Khai, "Excavations at the Ba The/Oc Eo Complex (Viet Nam): A Preliminary Report of the 1998 Campaign," *Proceedings, 7th International Conference, European Association of Southeast Asian Archaeologists*, Berlin, 1998 (in press).

80. Pelliot, *Mémoires sur les Coutumes du Cambodge*, 27. Pelliot translated the Chinese term *qingzhi* literally as "green porcelain" and provided the gloss for celadon. It is probable, however—as suggested by the finds of Chinese ceramics at Khmer sites—that Zhou was referring both to "celadon" (green-glazed stoneware, in Euroamerican terms) and to *qingbai*, porcelain with translucent pale blue glaze.

81. A Maritime Trade Bureau had been established in Quanzhou by the Song in

1087 and reestablished by the Yuan in 1277. Elizabeth Endicott-West, "The Yuan government and society," in *The Cambridge History of China*, vol. 6, ed. Herbert Franke and Denis Twitchett (Cambridge: Cambridge University Press, 1994), 599.

82. Groslier, "Introduction to the Ceramics Wares of Angkor," 30. David Chandler has pointed out that Groslier did not acknowledge the implications of his own discovery of the abundance of Chinese ceramics dating to the fourteenth and perhaps fifteenth century (early Ming)—that the active occupation of Angkor extended well beyond the "decline" in the thirteenth century assumed by earlier historians.

83. Groslier, "Introduction to the Ceramics Wares of Angkor," 21.

84. Until recently such pieces were mistakenly identified as Khmer if they were found within Cambodia.

85. Groslier, "Introduction to the Ceramics Wares of Angkor," 21.

86. Sherds of Chinese qingbai porcelain boxes found at Ban Kruat kiln sites are in the Freer Gallery of Art Study Collection (FSC-P4754-4761, gift of Roy Galloway).

87. This point has been made more generally by Ho Chuimei, "Intercultural Influence between China and South East Asia as seen in Historical Ceramics," in Rosemary Scott and John Guy, eds., *South East Asia & China: Art, Interaction & Commerce*, Colloquies on Art & Archaeology in Asia no. 17 (London: Percival David Foundation of Chinese Art, 1995), 118–40.

88. Tsuda, "Khmer Green Glazed Wares in the Early Period," 124.

89. *Ibid.*

CATALOGUE

Note to readers: All of these ceramics were made within the Khmer Empire during the Angkorean period (802–1431). In the absence of comparable material dated by archaeological excavation, all dates are approximate.



50



51



52



53



54



55



56



57



58



59

- 50 CYLINDRICAL BOX WITH DOMED LID
Probably Cambodia, Siem Reap Province, 10th century
White stoneware with ash glaze
10.5 x 14.0
Gift of Osborne and Gratia Hauge
S1996.152

- 51 CYLINDRICAL LIDDED VESSEL WITH LOTUS SEED-POD KNOB
Probably Cambodia, Siem Reap Province, 10th–11th century
Light gray stoneware with ash glaze
8.6 x 7.5
Gift of Victor and Takako Hauge
S1996.165

- 52 BALUSTER-FORM BOTTLE
Probably Thailand, Buriram Province, 11th century
White stoneware with ash glaze
10.9 x 5.9
Gift of Osborne and Gratia Hauge
S1996.139

- 53 CYLINDRICAL LIDDED VESSEL WITH POINTED KNOB
Probably Thailand, Buriram Province, 11th–12th century
Earthenware with traces of white coating
18.8 x 12.7
Gift of Victor and Takako Hauge
S1996.167

- 54 GOURD-SHAPED BOTTLE IN THE FORM OF A WORSHIPER
Probably Thailand, Buriram Province, 11th–12th century
Light gray stoneware with ash glaze
29.1 x 16.7 x 17.2
Gift of Osborne and Gratia Hauge
S1996.110

- 55 BUD-SHAPED JAR
Probably Thailand, Buriram Province, 11th–12th century
White stoneware with ash glaze
7.3 x 6.9
Gift of Osborne and Gratia Hauge
S1996.142

- 56 BUD-SHAPED JAR
Probably Thailand, Buriram Province, 11th–12th century
White stoneware with iron glaze
8.1 x 8.3
Gift of Osborne and Gratia Hauge
S1996.135

- 57 BIRD-SHAPED LIME-PASTE JAR
Probably Thailand, Buriram Province, 11th–12th century
White stoneware with ash glaze
12.4 x 12.1
Gift of Osborne and Gratia Hauge
S1996.145

- 58 BIRD-SHAPED LIME-PASTE JAR
Probably Thailand, Buriram Province, 11th–12th century
White stoneware with ash glaze
7.0 x 9.0
Gift of Osborne and Gratia Hauge
S1996.146

- 59 BIRD-SHAPED LIME-PASTE JAR
Probably Thailand, Buriram Province, 11th–12th century
White stoneware with iron glaze
5.9 x 6.4
Gift of Victor and Takako Hauge
S1996.171

60 BIRD-SHAPED LIME-PASTE JAR
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with iron glaze
11.0 x 11.3
Gift of Victor and Takako Hauge
S1996.172

61 CONCH SHELL-SHAPED VESSEL
WITH ANIMAL FACE
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with ash glaze
9.6 x 18.0 x 11.4
Gift of Victor and Takako Hauge
S1996.168

62 RABBIT-SHAPED LIME-PASTE JAR
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with iron pigment
under ash glaze
9.7 x 13.2 x 11.1
Gift of Victor and Takako Hauge
S1996.170

63 BOWL
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with ash glaze
9.1 x 19.5
Gift of Osborne and Gratia Hauge
S1996.128

64 BOWL WITH INCISED DECOR
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with iron glaze
10.6 x 15.5
Gift of Victor and Takako Hauge
S1996.173

65 BALUSTER-FORM JAR
Probably Thailand, Buriram Province,
11th–12th century
Brown stoneware with iron glaze
36.8 x 23.0
Gift of Osborne and Gratia Hauge
S1996.117

66 BALUSTER-FORM JAR WITH TWO-
COLOR GLAZE
Probably Thailand, Buriram Province,
11th–12th century
Brown stoneware with iron glaze;
lamine of white stoneware over
neck, with ash glaze
44.3 x 27.3
Gift of Osborne and Gratia Hauge
S1996.112

67 EWER
Probably Thailand, Buriram Province,
11th–12th century
Brown stoneware with iron glaze
28.7 x 20.9 x 19.9
Gift of Osborne and Gratia Hauge
S1996.118

68 EWER
Probably Thailand, Buriram Province,
11th–12th century
White stoneware with ash glaze
(spout and ring-handle damaged)
36.0 x 21.1 x 20.1
Gift of Victor and Takako Hauge
S1997.131

69 LENTICULAR BOTTLE
Probably Thailand, Buriram Province,
11th–13th century
Brown stoneware with iron glaze
8.8 x 15.9
Gift of Osborne and Gratia Hauge
S1996.132



60



61



62



63



64



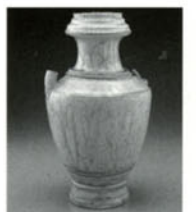
65



66



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70 BOWL WITH INCISED LINES
Probably Thailand, Buriram Province,
11th–13th century
White stoneware with ash glaze
9.3 x 15.7
Gift of Victor and Takako Hauge
S1996.175

71 CUP
Probably Thailand, Buriram Province,
late 11th–12th century
Brown stoneware with iron glaze
6.5 x 9.0
Gift of Osborne and Gratia Hauge
S1996.121.2

72 PEDESTAL BOWL WITH INTERIOR
STAND
Probably Thailand, Buriram Province,
late 11th–12th century
Brown stoneware with iron glaze
13.4 x 19.6
Gift of Osborne and Gratia Hauge
S1996.121.1

73 BOTTLE
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
28.7 x 20.0
Gift of Osborne and Gratia Hauge
S1996.113

74 CYLINDRICAL JAR
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
48.4 x 35.7
Gift of Osborne and Gratia Hauge
S1996.115

75 CYLINDRICAL JAR
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
66.1 x 39.4
Gift of Osborne and Gratia Hauge
S1996.114

76 ELEPHANT-SHAPED VESSEL WITH
SPOUT
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
22.2 x 20.8 x 25.2
Gift of Osborne and Gratia Hauge
S1996.124

77 FROG-SHAPED LIME-PASTE VESSEL
Probably Thailand, Buriram Province,
12th–13th century
Light brown stoneware with iron glaze
4.5 x 4.9 x 6.5
Gift of Osborne and Gratia Hauge
S1996.149

78 LION-SHAPED LIME-PASTE VESSEL (?)
Probably Thailand, Buriram Province,
12th–13th century
White stoneware with ash glaze
10.1 x 5.0 x 6.8
Gift of Osborne and Gratia Hauge
S1996.150

79 GOURD-SHAPED BOTTLE IN FORM
OF A WORSHIPER
Probably Thailand, Buriram Province,
12th–13th century
Light brown stoneware with iron glaze
(neck broken, lid a modern addition)
26.1 x 16.2
Gift of Osborne and Gratia Hauge
S1996.109

80 FRUIT-SHAPED BOX WITH LOBED LID AND STEM-SHAPED KNOB
Probably Thailand, Buriram Province,
12th–13th century
White stoneware with ash glaze
7.1 x 11.7
Gift of Osborne and Gratia Hauge
S1996.151

81 JAR
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
40.0 x 30.1
Gift of Victor and Takako Hauge
S1997.132

82 JAR
Probably Thailand, Buriram Province,
12th–13th century
Brown stoneware with iron glaze
34.1 x 30.9
Gift of Victor and Takako Hauge
S1996.157

83 VESSEL IN FORM OF TWO HUMAN FIGURES SEATED BACK-TO-BACK, HOLDING LOTUS BLOSSOMS (one of which is a spout)
Probably Thailand, Buriram Province,
12th century or later
Light gray stoneware with iron glaze
25 x 19.5 x 19.6
Gift of Osborne and Gratia Hauge
S1996.107

84 BOTTLE WITH FOUR MALE FACES ABOVE FOUR FEMALE TORSOS
Probably Thailand, Buriram Province,
12th century or later
White stoneware with iron pigment under ash glaze
23.5 x 16.2
Gift of Victor and Takako Hauge
S1997.133



80



81



82



83



84

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