

The Buddhist Decorative Glazed Tiles of Mrauk U: The Arakanese Appropriation of Islamic Glazed Tiling

မြောက်ဦးမြို့ရှိ ဗုဒ္ဓသာသနိက အလှဆင် စဉ်ချပ်များ

အစ္စလမ်မစ် စဉ်ချပ်အလှဆင်မှုစလေ့ကို

ရခိုင်ဒေသယဉ်ကျေးမှုနှင့်လိုက်ဖက်စွာ ပြန်လည်အသုံးချမှု

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Abstract

Mrauk U is situated in the western part of modern Myanmar and was the capital of Arakan (Rakhine) from 1430 CE until the Burmese conquest in 1784 CE. Its unique position in the Bay of Bengal via the Kaladan river and its tributaries resulted in the development of a commercial and cultural center in its heyday. European travel accounts and chronicles describe Mrauk U as a prosperous cosmopolitan city with a polyglot court, not only using native Arakanese language but also Persian and Bengali. Consequently, the remnants of art and archaeology reveal that the artisans drew much of their inspiration from Indian, European and Burmese traditions (Gutman 2001; 2002; Leider 2002:83). This paper contextualizes decorative glazed tiles of Arakanese Buddhist monuments in relation to the historical, political and cultural situation of Mrauk U. Regional interaction will be taken into account to identify the origins and development of Arakanese glazing technology. Previous research has mainly focused on the art and architecture of the Mrauk U period and the origin of the glazing technique remains vague. The comparative analysis reveals that significant elements in Arakanese glazing art, such as the use of stylized, geometric, floral or vegetal designs and animal poses seem to be borrowed from Islamic art. This article argues that Islamic tile tradition exerted considerable influence on the Arakanese glazing technique, probably via Bengal.

မြန်မာနိုင်ငံ အနောက်ဘက်ပိုင်းတွင်တည်ရှိသော မြောက်ဦးမြို့သည် 1430 AD မှစ၍ 1784 AD ဗမာမင်းများ သိမ်းပိုက်ခဲ့သည့်အချိန်တိုင်အောင် ရခိုင်လူမျိုးတို့၏ မြို့တော်ဖြစ်ခဲ့ပါသည်။ ဥရောပ ခရီးသွားမှတ်တမ်းများနှင့် ရာဇဝင်များတွင် ဖော်ပြချက်များအရ မြောက်ဦးသည် လူမျိုးပေါင်းစုံ အခြေချနေထိုင်ပြီး မိခင် ရခိုင်ဘာသာစကား သာမက ပါရှန်းနှင့် ဘင်္ဂါလီဘာသာစကားများပါ အသုံးပြုသော

နန်းတော်တည်ရှိရာမြို့လည်း ဖြစ်သည်။ ၎င်း၏ အကျိုးဆက် အနေဖြင့် မြောက်ဦးမြို့ရှိ ကျွင်းကျန်ရစ်သော ရှေးဟောင်းသုတေသနနှင့် အနုပညာလက်ရာများသည် အိန္ဒိယ၊ ဥရောပ နှင့် မြန်မာ့ယဉ်ကျေးမှုဟန်များ ရောယှက်လျက်ရှိပါသည်။ ယခုစာတမ်းသည် မြောက်ဦးမြို့ရှိ ဗုဒ္ဓသာသနိက အဆောက်အဦးများတွင် အလှဆင်ထားသော စဉ်ချပ်များအကြောင်းကို မြောက်ဦးခေတ် သမိုင်း၊ နိုင်ငံရေးနှင့် ယဉ်ကျေးမှု အခြေအနေများနှင့် ချိန်ထိုး၍ လေ့လာသွားမည်ဖြစ်သည်။ စဉ်ပြုလုပ်သည့် အတတ်ပညာကို မည်သို့မည်ပုံ ကျွမ်းကျင်တတ်မြောက်ခဲ့ကြောင်းကို ဒေသတွင်းအခြား ခေတ်ပြိုင် စဉ်လုပ်ငန်းများနှင့် ချင့်ချိန် လေ့လာသွားပါမည်။ ယခင်လေ့လာခဲ့သော သုတေသနများသည် မြောက်ဦးခေတ် ဗိသုကာနှင့် အနုပညာရပ်များအပေါ် အဓိကစောင်းပေးခဲ့ပြီး စဉ်အတတ်ပညာမည်သို့ ရရှိတတ်မြောက်ခဲ့ကြောင်း လေ့လာရန်လိုအပ်လျက်ရှိပါသည်။ နှိုင်းယှဉ်လေ့လာ ချက်များအရ ရခိုင် စဉ်ချပ်များပေါ်ရှိ ပန်းခက်ပန်းနွယ်၊ ဂျီဩမေတြီ ဟန်ပန် ဒီဇိုင်းများနှင့် တိရိစ္ဆာန် ကိုယ်နေဟန်ထား ပုံစံများသည် အစ္စလမ်မစ် အနုပညာ လက်ရာများနှင့် တူညီသော အင်္ဂါရပ်များစွာတွေ့ရပါသည်။ အစ္စလမ်ဘာသာရေး အဆောက်အဦးများတွင် စဉ်ချပ် အလှဆင်သောစလေ့သည် မြောက်ဦးစဉ်ချပ် အလှဆင်မှု စလေ့အပေါ်တွင် လွှမ်းမိုးမှုရှိခဲ့ပြီး ၎င်းနည်းပညာမှာ အိန္ဒိယနိုင်ငံ ဘင်္ဂလားဒေသမှ ဆင်းသက် လာသည်ဟု ယူဆရ နိုင်ကြောင်းကို ယခုစာတမ်းတွင် ဆွေးနွေးတင်ပြသွားပါမည်။

Keywords: Arakan, Bengal, Glazed tiles, Islamic tiling, Mrauk U | ရခိုင်၊ ဘင်္ဂလား၊ စဉ်၊ အစ္စလမ်မစ် စဉ်ချပ်အလှဆင်မှု၊ မြောက်ဦး

Introduction

Mrauk U (formerly known as Mrohaung) which flourished from the early 15th to late 18th centuries CE in western Myanmar (Figure 1), was an important area for the production of glazed ceramics. Few works in the literature demonstrate the aspects of Mrauk U glazed wares in the last two decades because of its hard-to-reach location and internal conflict in the region. The art of glazing was completely unknown in Arakan before the centuries preceding the Mrauk U Kingdom, although glazed tiles were known in Bagan by the 11th century. The presence of glazed tiles was first noticed by Forchhammer in the late 19th century but he did not make any substantial contribution regarding their technology, production and origin (Forchhammer 1892). Later local scholars discovered more Buddhist monuments decorated with glazed tiles but their attention did not focus on glazed art (Shwe Zan 1997; Tun Shwe Khine 1992).

Don Hein (1996:188; 2003; 2008:22) discovered evidence relating to the ceramic production such as kiln furniture and wasters and he identified kilns which seem to be of the inground crossdraft type. None of them have been excavated. He deduced from the available evidence that these kilns

produced lead-glazed high-fired earthenware, mainly small U-shaped bowls either of monochrome color or with painted design. Other debris at kiln sites are further confirmation that architectural glazed tiles for decorating temples were produced locally. The department of archaeology (Mrauk U branch) has recently recorded additional kiln sites in Mrauk U (Department of Archaeology and National Museum 2015; Nomination dossier for inscription on the world heritage list: Mrauk U (Vol. 1), 2019).

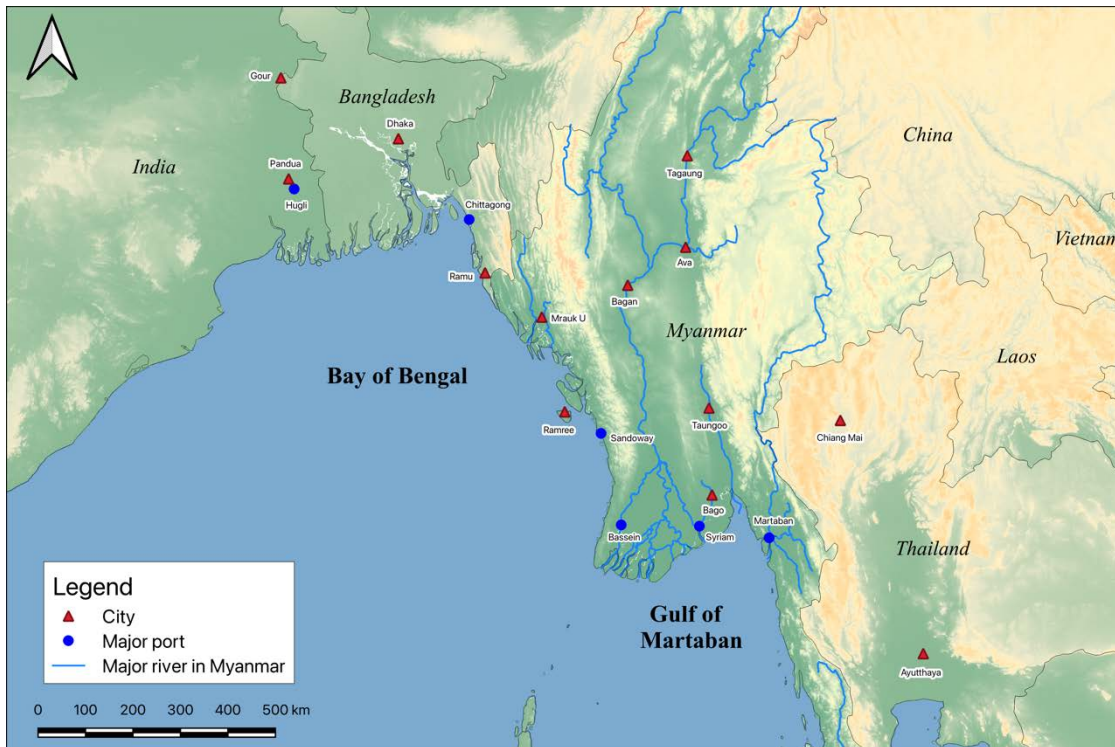


Fig. 1 Map showing Mrauk U and its neighbors. Source: Saw Tun Lin.

In Gutman's *'Burma Lost Kingdoms Splendours of Arakan'*, only one page mentions the ceramics at Mrauk U (Gutman 2001:162). She suggests that the same glazing technique, which seems to have been acquired from the Middle East, was used for domestic wares and decorative glazed tiles. She does not identify any glazed wares from production sites, apart from a jar with underglaze blue painted on white in the Mrauk U Museum¹. More work is necessary to answer the basic question of their origin, production and consumption of the ceramic history of Mrauk U.

Glazed decorative tiles at Mrauk U is the further significant aspect to be explored to understand the ceramic history of Myanmar. However, this topic has rarely been studied directly. Few studies on the Buddhist art of Mrauk U provide the description of colorful glazed tiles, both terracotta and sandstone, decorated on religious monuments (Forchhammer 1892:31-32; Myo Thant Tyn & Thaw Kaung 2003:299; Shwe Zan 1997:81, 111; Than Tun 2003:11-12; Tun Shwe Khine 1992:58). These studies have merely mentioned the existence of decorative tiles on religious edifices. Hein (2008:22) has recognized that considerable evidence of tiles from kiln debris confirms the production of glazed architectural fittings in local kilns in Mrauk U and its vicinity. However, temple plaques of Bago and Bagan were apparently produced in local kilns but the assertion is unproven by any material evidence.

¹ The jar is supposedly not a local product.

According to Gutman (2001; 2002), the Arakanese glazing technique actually originates in the Middle eastern lead glaze tradition and those tiles are decorated with Sassanid and Hindu-Buddhist designs. The main problem for this notion is that the artistic designs of the Sassanian, whose empire ended in the 7th century, would not be adopted into Arakanese ceramics until the 15th century. As her focus is on the architecture and iconography of the Buddhist monuments in Mrauk U, her assertion about technological and artistic influence is rather vague as to exactly how the Arakanese acquired the techniques in which way and at what time. Until now, the complex issue of the origin and production of architectural glazed tiles in Mrauk U has not yet been satisfactorily addressed. To illuminate this uncharted area, it first needs to examine the production technology of these decorative glazed tiles.

Unfortunately, few glazed tiles have now remained in situ and most of them, discussed in this work, are now in the collection of the Mrauk U archaeological museum. A total of seventeenth Buddhist monuments decorated with glazed tiles are recorded in Mrauk U (See Table 1). The Mrauk U archaeological museum has compiled the collections of mostly glazed floor tiles, apart from wall tiles of Laungbanpyauk, and from six Buddhist monuments in and around Mrauk U. Except for several glazed wall tiles of Laungbanpyauk pagoda and very small remnants of floor tiles from Koe Thaug temple, no glazed artwork can be found on other monuments listed in Table 1 below. The tiles recorded in some scholars' reports and articles can no longer be traced, for example, Htupayon, Min Paung and Kadothein. Our knowledge of Arakanese ceramics at this moment has too many gaps so that no reliable periodization has yet been established. Apart from some prominent pagodas with dated inscriptions, for example, Shitthaung, most of the monuments decorated with glazed tiles are traditionally dated according to oral histories and chronicles.

| No. | Name | Date | Donor | Glaze type | References and notes on data sources |
|-----|------------------------|--------------------------|-------------------------|----------------|--------------------------------------|
| 1. | Nagar Ceti | 1430 AD | Min Saw Mon (1404-1433) | - | |
| 2. | Shwe Kyar Thein (Sema) | 1471 AD | Princess Saw Shwe Kyar | - | |
| 3. | Ratana Mhan Kin | 1492 AD | Ba Saw Nyo (1492-1494) | - | |
| 4. | Htupayon | 1494 AD | Min Ran Aung (1494) | MC | (Than Tun 2002:24-26) |
| 5. | Alal Ceti or Min Paung | 15 th century | - | MC, UG | (Aung Bo 2014) |
| 6. | Darpinegyi | 15 th century | - | Blue and white | Museum collection/ AC (22.12.1996) |
| 7. | Pyi Soe Gyi | 15 th century | Pyi Soe Gyi, minister | UG | Museum collection/ AC (22.8.1962) |

| | | | | | |
|-----|-------------------------------|--------------------------|--|--------|---|
| 8. | Taung Phyu Laymyat Nhar | 15 th century | - | MC | (Khin Ma Ma Mu & Thein Tun Aung, forthcoming) |
| 9. | Laungbanpyauk | 1525 AD | Min Khaung Raja (1521-1531) | MC | Museum collection/ AC (15.5.1959) |
| 10. | Thettawra | 1525 AD | Min Khaung Raja | MC, UG | Museum collection/ AC (12.12.1961) |
| 11. | Shitthaung | 1535 AD | Min Pa (1531-1553) | MC | Museum collection/ AC (1.7.1959) |
| 12. | Ratana Ceti (ordination hall) | 1537 AD | Min Pa | - | |
| 13. | Koe Thaung | 1553 AD | Min Taikkha (1553-1555) | MC, UG | |
| 14. | Ratanapon | 1612 AD | Min Khamoung (1612-1622) and chief queen Shong Htway | PC, MC | Museum collection/ AC (13.6.1985) |
| 15. | Min Khaung Shwe Htu | 1629 AD | Queen Nat Shin Mal of king Maha Sirisudhammaraja (1622-1638) | - | |
| 16. | Pitakataik (library) | 17 th century | Narapatigyi (1638-1645) | MC | (Forchhammer 1892:31-32) |
| 17. | Kadothein (Sema) | 1723 AD | Canda Vijaya (1710-1731) | MC, UG | (Forchhammer 1892:52; Fraser-Lu 1994:203) |

Table 1 Lists of Buddhist monuments embellished with glazed tiles at Mrauk U. (MC = Monochrome, PC = Polychrome, UG = Underglaze, AC = Acquisition Date)

Production technology

The visual examination of decorative tiles in Mrauk U reveals three types of techniques used for glaze applications, inconsistent with those known to be utilized for the Burmese and Mon tile-work in general. The most common and ubiquitous is the application of monochrome floor or wall tiles, which vary in colors: white, yellow, red, brown, green and blue. While such techniques of monochrome glazes are employed in other regions, the cobalt blue glaze only exists in Mrauk U tradition. This cobalt blue color is found abundantly in Islamic glazed ornamentation in the Indian subcontinent as well as Bengal. Other unique features of Arakanese glazing techniques are underglaze and polychrome paintings. They are brush-painted designs, commonly of floral and geometric patterns and animal figures, in underglaze white on a green background and in polychrome, particularly green and blue colors, on white glaze. Probably as a consequence of close political and social ties with Islamic India, there had been a gradual improvement in the Arakanese

glazing technique, originally from the simplest form of monochrome glaze to more sophisticated and elaborate underglaze painted designs. This development will be later discussed in detail.

Two types of pastes are identified – red earthenware and grey earthenware. Red earthenware fabrics usually contain a distinctive form of sand, angular quartz and crushed rocks, which are clearly visible to the naked eye. Although sand and quartz might be a natural inclusion in clay, crushed rocks could be deliberately added by the potters as tempers. In some tiles, especially polychrome painted tiles, it is clearly visible a grey paste as a result of high temperature rather than the use of different clay sources because both red and grey pastes in one piece of tile, indicating the fluctuation of the kiln temperature, can also be identified. The analysis of glazed bowls and tiles from Mrauk U shows that the concentration of chemical elements contained in Arakanese glaze, especially lead which is relatively low, is quite distinct from those of Bagan and other regions in Myanmar (Htun Hlaing 2002).

The glass bangles and glass frit abundantly found in the immediate vicinity of kiln sites (Aung Bo 2014) were probably used to make glazing, in addition to the utilization of raw materials such as cobalt and copper. For glazing, ready-made glass frits are ground to produce a fine powder. Then the powdered frit is liquefied with water into slurries and applied to the clay body. This practice still survives in upper Myanmar's pottery production; glass frits and glass bottles are used to make glazing (Khin Oo Maung 2007:87-88). In the traditional practice of the Middle East and India, glass or glaze frits are produced in the same kiln used to fire tiles and other wares or special small frit furnaces usually in updraft shape (Gill 2015). The kilns used to produce ceramic tiles in Arakan are cross-draft types which differ from Middle Eastern frit furnaces. Moreover, no evidence of glaze frit production has yet been discovered in Mrauk U.

Don Hein (1996; 2003; 2008) has identified the seven production sites of lead-glazed high-fired earthenware in Mrauk U. Based on kiln bricks and debris around the sites, these kilns seem to be an inground cross-draft type which could produce high-fired earthenware. Hein postulates that Mrauk U kilns could have produced architectural glazed tiles for Buddhist monuments (2008:22). Traditional kilns used to manufacture glazed tiles in Islamic countries are mainly beehive-updraft type (Gill 2015:115-135). Based on similar ware supports found at Kalaktaung kiln site in Ayeyarwady delta region (Hein 2003), there might have been some production technology linkages between Mrauk U and lower Myanmar. Hein (2003) asserts that the Arakanese glazing technology has had some impact on the Mon territories of lower Myanmar, rather than reciprocal relationship. Yet, kilns in lower Myanmar mainly produced stoneware celadons and no evidence of floor and wall tiles like Mrauk U has been discovered in any site there.

More kiln sites, at least thirteen, with kiln furniture, glazed bowls and glazed bangles have been discovered by the department of archaeology in Mrauk U areas and further five miles north-west, near Vesali ancient city (Nomination dossier for inscription on the world heritage list: Mrauk U 2019:81-83; Khin Ma Ma Mu and Thein Tun Aung forthcoming). None of these kilns has been properly excavated. The abundant findings of kiln wasters and debris, chiefly domestic glazed earthenware indicate that the primary purpose of these kilns appears to be the manufacture of glazed utensils, rather than decorative tiles. No floor or wall tiles like underglaze painted or polychrome tiles are found in any kiln site. However, some monochrome glazed floor tiles, used in religious monuments as well as secular complexes, are discovered among kiln debris, suggesting that architectural tiles could be fired together with other domestic glazed wares. Although it is hard to

draw any conclusion from the present evidence, in Arakan no kilns could have been specially designated for Buddhist decorative glazed tiles, like their counterparts of the 18th century Burmese and Mon of Lower Myanmar.

Islamic tradition of glazed tiling in the Indian Subcontinent

Before discussing the Arakanese glazed tiles tradition in detail, this section provides a brief overview of the glazed tiling tradition that came in medieval and post-medieval Islamic India. The art of glazing in the Indian subcontinent seems to predate Islamic dominion over the region in the 12th century. The discovery of glazed bricks from early Buddhist sites and glazed wares and tiles from Pre-Islamic sites, chiefly Brahmanbad in Sindh and Gauda and Pandua in Bengal, indicate the practice of glazing much earlier, probably the first or second century AD (Furnival 1904:116-119; Nath 1970:10-14). From the time of the Muslim conquest, the Islamic rulers founded an empire centered on Delhi and introduced new creeds and cultures in favor of Islam. The adoption of new types of buildings and architectural ornamentation occurred in accordance with the spirit and manner of Islamic art and architecture (Blair & Bloom 1995:149-160; Brown 1981:1-5). Indeed, glazed tiling technique, which is most likely Persian in origin, rapidly flourished in the subcontinent after the Muslim conquest. Centuries of invasions and migration allowed Persian culture to spread its influence on the Muslim sultanates and the Mughals, as evidenced by the art, architecture and literature in India (Brown 1981; Eaton 1996; Michell 2011:144-75, 264-73). Persian sphere of influence extended as far as Mrauk U; this often manifested in the Persian-inspired decoration and glazing technology (Gutman 2002:175).

The technique of glazing and tilework brought by Muslims penetrated into the various regions of India and varies locally depending on the availability of material and construction techniques. Two different methods such as glazing on terracotta or stone paste are used in the Sultanate centers of Delhi, Malwa, Deccan and Kashmir while only terracotta tiles are known in the Indus region and Bengal (Hasan 1995), with the latter having close cultural and historical contact with the Mrauk U kingdom. Under the Mughals (1526-1858), the common use of bricks and tiles to decorate mosques, tombs, forts, etc. was noticeably replaced by stone decoration (Blair & Bloom 1995:267) and glazed tilework became the secondary choice of ornamental material in central India (O’Kane 2019). However, depending on the availability of stone and marble, the tile tradition continued to be used as a primary decorative element in some regions. The use of glazed tiling previously centered on Delhi shifted to Punjab in the 17th century. Here, tiles in a greater number of colors and forms were extensively used to cover much larger proportions of a monument’s surface. With the introduction of more diverse colors, white and light blue became more common during the reign of Akbar (1542-1605) (O’Kane 2019:38); coincidentally in the 17th century, the Arakanese also used these two colors, probably in reference to Mughal tilework. The Mughal artisans had adopted a blending of the Islamic mode of ornamentation with the ancient Indian architectural tradition as well as the amalgamation of Islamic and indigenous glazing techniques (Gill et al. 2014; Nath 1970). This kind of acculturation was also reflected in Arakanese tile-work adapted from Islamic glaze technology and designs blended with local arts to create distinct styles. Close geographical boundary to flourishing Islamic Bengal and a long-lasting political and historical relationship between the Mrauk U kingdom and the Islamic Bengal would have a cultural impact on the Arakanese community.

Appropriation of Islamic technique

The visual characteristics of Arakanese glazed tiles notably highlight their technological distinctiveness, in relation to forms or colors or styles of tile-work, from Mon and Burmese

examples. Unlike the Buddhist narrative tiles of the two other regions, the Arakanese embellished the floors and exterior surfaces of the walls of Buddhist monuments with glazed tiles. Tile forms can be categorized as follows; floor tiles are usually a square or asymmetrical shape and wall tiles are commonly made up of individual pieces of monochrome tiles cut into intricate shapes. These cut tiles are placed next to each other to create a single multicolored motif (Figure 2). This recalls the architecture of Bagan where, for instance, the interior and exterior of Nagayon temple were once floored in green glazed bricks, and square and cut tiles were used abundantly to decorate the pediments and crenellations with monochrome and bichrome glazed tiles (Figure 3) (see Bagan examples in Saw Tun Lin 2018, Stadtner 2005:180). Gutman (2001; 2002) points out that the architectural plan of early monuments at Mrauk U was inspired by Bagan models. One might argue that this close connection with Bagan seems to have impacted glaze technology at Arakan. Only green, white and mustard yellow glaze (Figure 4) was known in the Bagan ornamentation while the Arakanese used different ranges of colors: white, yellow, red, brown, green and blue and the pavements of stupas and temples, as well as the palace, were once floored in multicolored glazed tiles, not like single green-colored floors of Bagan temple. Moreover, the Bagan technique of separate cut tiles usually embedded in the stucco clearly differs from the Arakanese cut tiles arranged like a jigsaw which are more likely in an Islamic manner.

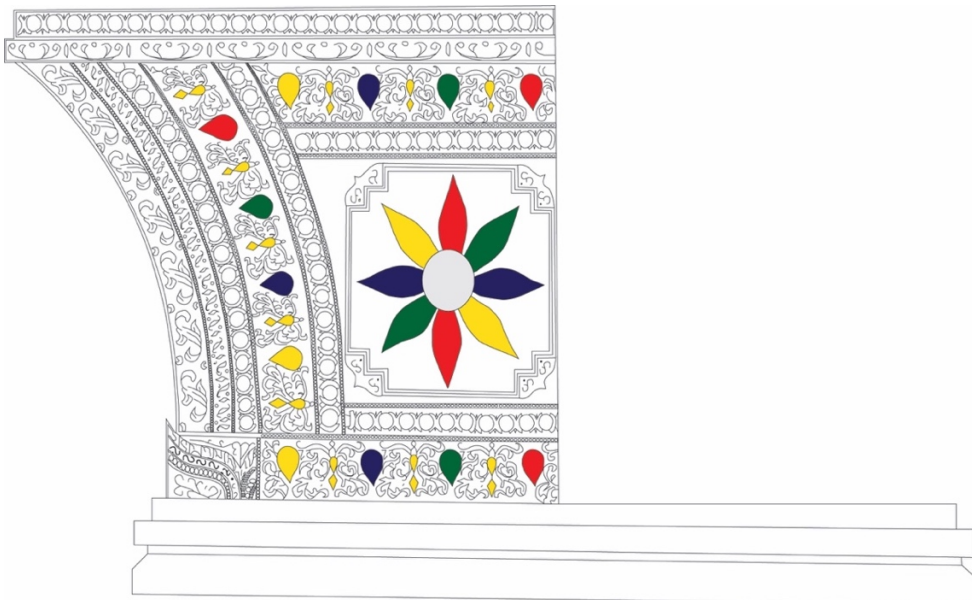


Fig. 2 Combination of cut tiles into a multicolored flower motif, Pitakataik. Source: Saw Tun Lin retraced from Forchhammer 1892:Plate XX, no.36.



Fig. 3 Pediment decorated with glazed cut tiles, Sulamani temple (1183 AD), Bagan. Source: Saw Tun Lin.



Fig. 4 Bichrome glazed decorative tiles, Sulamani temple, Bagan. Source: Saw Tun Lin.

The influence of Islamic tradition, especially that of Sultanate and Mughal Bengal, is apparent in features such as colors, style and motifs on glazed tiles. The most notable feature of Arakanese tiles is the extensive use of dark blue which was completely unknown in other regions of Myanmar. Copper and cobalt blue tiles can be copiously found on mosques and tombs in traditional Islamic art of glazed tiling. As the copper blue is lighter in color, cobalt pigment seems to be used for the dark blue glaze colorant in Mrauk U. However, chemical analysis needs to be carried out to confirm this hypothesis. Cobalt, if used to create the intense blue, as well as other pigments, could be imported from a foreign country, perhaps from the Khetri mines in India.

In Mrauk U, decorative tilework normally takes the form of mosaic upon the floor and wall of a building. The test excavation of the platform (Figure 5) of the Laungbanpyauk pagoda dated 1525 CE has exposed the colorful glazed floor tiles in which jigsaw-like designs are made by fitting

pieces of different colored tiles together. The enclosure walls are also covered with cut glazed tiles forming flower patterns with petals (Figure 6). The profuse employment of variegated color tiles in the mosaic pattern in India is attested by the Islamic monuments in Pandua and Gauḍa (Gaur), the 14th-16th century capital cities of the Bengal Sultanate (Hasan 1979:180-182; Sinha 2013, Fig-11). Although the designs of cut tiles are a local innovation, the technique of glazed tiling as observed in the Buddhist monuments of Mrauk U is apparently from the Islamic tradition which was perhaps transferred from Bengal.



Fig. 5 Colourful glazed floor tiles of Laungbanpyauk pagoda, Mrauk U. Source: Thein Tun Aung.



Fig. 6 Glazed tiles decorated the enclosure wall of the Laungbanpyauk pagoda, Mrauk U. Source: Saw Tun Lin.

During the late 15th and 16th centuries, another remarkable achievement of glaze art was the technique of bichrome glaze (blue and white) and underglaze painting, commonly white painted on a green background. Their designs are crude and less complex, compared to later polychrome painted tiles but they are reflective of the developmental period of the Arakanese glazing technique. Like the floral motif of multicolored cut tiles, the Arakanese favored a single flower painted design surrounded by square borders (Figure 7). This repetition of style reflects the local tradition which the Arakanese today call “*Cīṭṭa Lankāra*”, an artistic creation of imagery and floral and arabesque designs on cloth, painting, sculpture, wood carving, et cetera (Htoo Hla 2015). It shows how Arakanese artisans adopted the Islamic mode of decoration and blended it with traditional motifs. There occur motifs borrowed or adopted from Islamic art, such as certain geometric designs and figural forms (animal and human). The most noticeable one is a lozenge pattern with a surface of diagonal parallel ridges, frequently found either in cut tiles or underglaze painting (Figure 8). This simple design often embellishing brickwork, ceramics and tiles is one of the most dominant decorative motifs in traditional Islamic art (Baer 1998:41-43; Michell 2011:148). Another significant example can be observed on blue and white tiles where the individual pieces of lozenge tiles are reassembled in the form of a five-pointed star (Figure 9). The star as ornamentation is not common in the Buddhist repertoire. However, there was widespread use of this ornament throughout the Muslim architectural realm, and it symbolically represents the cosmological connotation or the principle and ideology of Islam (Abdullahi and Embi 2013; Baer 1998:100-101).

Animals such as the lion, tiger, fish and parrot, mostly inside a semicircular panel like a mihrab shape were favored ornaments on Arakanese tiles (Figure 10). According to Buddhist beliefs, these animals generally symbolize auspiciousness or they are in some way related to previous lives of the Buddha. In Mon and Burmese traditions, they are never used to decorate on the floor that everyone can walk on. The meaning associated with the use of these animals is difficult to interpret. This preference for individual animal figures appears to have largely excluded narrative context, opting merely for decorative purposes. Fraser-Lu (1994:203) has also argued that the glazed tiles of Mrauk U are entirely dedicated for a decorative purpose which differs from their counterparts of Bagan and Bago tiles intended for didactic aspiration.

Animals in heraldic poses² (Figure 10) were one of the components of the Islamic ornamental repertoire, particularly in Persian tradition where these tiles were used to cover either floors or walls (Carboni and Masuya 1993). Between the 14th and 15th centuries, the Islamic expansion of trade along the shores of the Indian Ocean resulted in the growing presence of Muslim mercantile communities in the region. Moreover, Persian presence in the Bay of Bengal lent itself to the diffusion of Persianate technology and culture (Subrahmanyam 1999). Coins bearing Persian script (Phayre 1846; 1882; San Tha Aung 1979; Serajuddin 1986) and Persian-inspired decorative motifs on stone thrones of Buddha images (Gutman 2002) clearly reflect the close association between Arakan and Indo-Persian culture where the potential of the Islamic influence on glazed-tile production is further realized.



Fig.7 Painted flower designs on green glazed tiles, Mrauk U museum. Source: Saw Tun Lin.

² See also a photo from Mrauk U in Shwe Zan 1997:111 and Islamic glazed tiles of similar animals in heraldic poses in Metropolitan Museum of Art, accession no.1975.193.2 and 1975.193.



Fig. 8 Lozenge pattern, Mrauk U Museum. Source: Saw Tun Lin.



Fig. 9 Blue and white star tiles from Darpinegyi pagoda, Mrauk U museum. Source: Saw Tun Lin.



Fig. 10 Animals in heraldic poses (left) Mrauk U museum. Source: Saw Tun Lin.

By the 17th century, the development of Arakanese glaze art reached its culmination in terms of decorative motifs and polychrome painting techniques. Polychrome underglaze painted tiles with white stone paste bodies were used at the 15th-century capitals of Mandu in Malwa and Bidar in Deccan under the Sultanate but this tradition was later discontinued (Hasan 1995). The method seems to be completely different from that of the Arakanese. In Mrauk U tiles, three basic colours were used, normally green and blue painted on the white tin-glazed background (Figure 11). The Islamic influence is increasingly apparent in the late Mrauk U period when the underglaze painted designs were created in more sophisticated patterns like those in Islamic tilework. The integration of floral and other geometric elements into compact and complex patterns encircling an animal figure (Figure 12), can also be seen in various artistic media all over Myanmar, but they are not in the manner of Islamic art. This particular use as glazed floor tiles only appears in Arakanese Buddhist art. The use of lotus blossoms, vine bands, floral medallions, birds holding a vegetal scroll in their beaks, and fish (Figure 13) was common to countries in South Asia and the Middle East. The combination of floral patterns and motifs was borrowed from Islamic artistic production but tended to include many local elements as well. It is suggested that the combination of artistic innovation and glazing techniques probably derived from Islamic India or Bengal. At the same time, the Mughal conquest of the Indian subcontinent led to an increase in their cultural influence in the region. Close political ties with Mughal India are apparent in the Mughal-inspired construction technique of the arched roofing of the aisles in Buddhist temples at Mrauk U (Gutman 2002). This connection is also evidenced by a fragmentary tile with a man wearing a turban probably in Mughal style (Figure 14).



Fig. 11 Polychrome painted tiles with three basic colors; white, blue and green, Mrauk U Museum. Source: Saw Tun Lin.



Fig. 12 Tiles decorated with intricate floral patterns and animal figures, from Ratanapon pagoda, Mrauk U Museum. Source: Saw Tun Lin.



Fig. 13 Combination of geometric and floral patterns and petal blending with the bird's beak, from Ratanapon pagoda, Mrauk U Museum. Source: Saw Tun Lin.



Fig. 14 Fragmented tiles depicting a man wearing a turban, from Ratanapon pagoda. Source: Saw Tun Lin retraced from Shwe Zan 1997:111 (photo).

Muslim relations with Arakan

Mrauk U's geographical location at the boundary of flourishing Islamic Bengal and their political relationship would have a cultural impact on the Arakanese community. The Islamic settlement at Mrauk U played a pivotal role in the acculturation and adoption of advanced Islamic technology. According to the *Na Mañ* chronicle, a famous narrative about the foundation of Mrauk U, the Burmese invasion of Arakan in 1404 repelled king Min Saw Mon or Naramaikhla who abandoned the throne and fled to the west, which would mean somewhere in Bengal or India. Some chronicles state that the king fled to the court of Delhi (Kawisarābhisuripawāra 1881; Tha Htun Aung 1927) while another source just mentions the king taking refuge under the *Thuratan* (Sultan) king (Sandamaralankara 2017:263-274). Based on the term 'the West' in the *Na Mañ* chronicle, most historians believe that, without any concrete evidence, the king was granted asylum at Gaur, the capital of the Sultanate of Bengal (Collis and San Shwe Bu 1925:40; Phayre 1844:45). Both Bengal and Delhi at that time were under the rule of Muslim sultanates. After twenty years living in the west, the exiled king regained the throne with the help of the sultanate king and his army and then founded Mrauk U in 1430.

In some colourful exile stories written by British colonial historians, the king returned to Arakan with the 'Mohammedan followers' including artisans who later built the Sandikhan mosque, which was recently destroyed at Mrauk U (Forchhammer 1892:39; Harvey 1925:139). Leider and Kyaw Minn Htin (2015) have doubted this exile story due to the apparent inconsistency in the historiography. They seem rather dubious about the notion of Muslim settlement in the early 15th century associated with the exile story as there is no concrete archaeological, epigraphic and literary evidence. However, there might have been a Muslim community in Arakan due to flourishing trade

along the coast. Moreover, Chittagong, about 150 miles northwest of Mrauk U, was a prominent trade port dominated by the Muslims since that time. It was a strategically important place and also the inland gateway to Mrauk U from Bengal. Whether or not the king Min Saw Mon brought back a Muslim community from Bengal, it seems likely that the Islamic tradition of glazed tiling can be witnessed from the 15th century; the most visible evidence is the glazed floor tiles in Mrauk U palace built by the king³.

From the 15th century onward, Islamic culture would play an important role in the Arakanese court. One intimate connection between the Mrauk U kingdom and the Islamic tradition is that some Arakanese Buddhist rulers adopted dual titles, as evidenced by the coins bearing the Arakanese name on one side and the Muslim name (kalima) in Persian or Bengali scripts on the other⁴. While the use of Muslim titles on Arakanese coins over almost two decades cannot be assumed as a factor of religious policy in the Buddhist takeover of Mrauk U, this imitation of Bengali coinage is a reasonable indication of the influence of the flourishing court of Sultanate Bengal on the small but prosperous Arakanese court (Leider 1998:201-202).

Historians generally agree that the period of about a hundred and fifty years between King Min Pa (1531-1553) and Candasudhammaraja (1652-1684) was the apogee of their political power, territorial boundary and economic success. By this period, the Arakanese tradition reached the culmination of the development of the technology of decorative tilework with polychromatic glazes. Muslims significantly contributed to the Arakan court as ministers, treasurers, guards, servants and artists during the late 16th and 17th centuries. Their presence in the Arakanese administration was associated with the expansion of the kingdom towards Islamic Bengal in the 16th century (Leider 2002; Leider & Kyaw Minn Htin 2015:394). The Arakanese chronicle (Sandamaralankara 2017:288-303, Kawisarābhisuripawāra 1881) asserts that in 1532 King Min Pa declared war on Delhi and conquered a large part of Bengal. Following the peace negotiation, the king married a daughter of the Delhi Sultanate and took four thousand salt producers from Sandwip island, who were later donated to the pagodas built by the king.

While there is no material proof that Min Pa invaded Bengal, it is reasonable to believe that Chittagong under Arakanese control was a cosmopolitan port, the gateway to Mrauk U for Muslims from Bengal, whose political situation was unstable under the reign of the Afghan Sher Khan (1539-1545). During this time several Muslim traders plying the Indian Ocean and the 'pirs' (Muslim saint) as missionaries spreading the Islamic faith along the coast of Arakan were further evidence of a growing Muslim community in Mrauk U (Temple 1925; Yegar 1972).

Another important aspect of Muslim influence during the 17th century is the presence of two famous Bengali poets in the Arakanese court under the patronage of Muslim ministers, as known from the literary works of these poets (Chowdhury 2004:160-194; Habibullah 1945:35). San Baw U (1933:17) noted that ministers in those days were not only influential and independent in the court but they were also able to restrain the king's power.

³ The Palace had been repaired and extended several times during the Mrauk U kingdom and the major repair was conducted by the King Min Bin in 1531 (Tun Shwe Khine 1992:27).

⁴ Sixteenth out of 48 kings in Mrauk U kingdom, from Min Khari or Ali Khan (1434-59) to Thirithudhamma Raja or Salim Shah (1622-38), almost successively struck coins with Muslim title (San Tha Aung 1979).

The Muslim presence further increased in the mid-17th century as a result of the historical event in which the governor of Mughal Bengal, Prince Shah Shuja sought asylum in Mrauk U with his family and a retinue of several hundred people, after having been defeated by his brother Aurangzeb in a decisive battle (Bernier 1891:108-115). According to Niccolao Manucci's (1907:369-376) account, an Italian writer and traveller, Shuja conceived the idea of deposing the Arakanese king and then took the throne with the support of Muslims, especially Moguls and Pathans (Afghans) who had settled in Arakan. However, his effort to slay the king was unsuccessful and he was killed in an undetermined situation during his flight from the country (Hall 1936:22-23; Harvey, 1922). After Shuja's death, his soldiers later pledged allegiance to the Arakanese king as a special archer force known as Kamans or Kamanci (Khan 1937:253; Yegar 1972:23).

The Muslim communities were progressively integrated into Arakanese society until the Burmese conquest of the whole country in 1784. In the Muslim sources, the Arakanese are notorious for their piracy and slave raids along the Bay of Bengal. As stated by the East Indian chronicle, the Arakanese pirates⁵ carried off about 1800 people from the southern parts of Bengal in 1717. They were brought back to Arakan, where the king selected the artisans to become his slaves (O'Malley 1914:39). Tilemakers from the Bengal region could have been chosen for the court, where they created styles and designs to conform with the tastes of new patrons.

While much of this history is unproven, given these possible historical and cultural roots, the Islamic influence on the glaze art tradition of Mrauk U is significant, resulting from the close overland and sea ties between India and Arakan. It should also be noted that the Portuguese imparted and introduced a new technology for the construction of temples and fortifications in Mrauk U, in addition to the manufacture and use of weaponry in the 16th century. One could possibly imagine that the Arakanese were encouraged to create such glazed tiles for decoration, by the Portuguese who already had the technical knowledge of production and utilization of ceramic tiles in medieval Europe and also witnessed the Islamic tradition of glazed tiling in the Indian subcontinent. However, the Arakanese technique of tile decoration had already been practiced long before the arrival of the Portuguese around the early 16th century.

Conclusion

Based on ceramics and historical analysis, this research has chronologically and regionally traced the origin and development of Arakanese glazing technology. Various modes of technological transmission have been discussed in the article but the precise way of transfer remains unclear. However, it is plausible to infer that the Arakanese potters could not have obtained the technology through a direct exchange with Islamic potters since early pieces of ceramic tiles from Mrauk U were rough and lack of sophistication. Perhaps it might be similar to the case of Khmer glazed ceramic development where the technological transmission seems to take place indirectly through someone who witnessed the operation of Chinese kilns but did not entirely recognize how they worked (Wong 2010). In this similar way, the Arakanese development of decorative tiles appears to have occurred indirectly through traders and Muslim communities in Mrauk U who witnessed the Islamic kilns in operation and the designs and arrangement of glazed tiles in mosques at Bengal and elsewhere.

⁵ In many older writings, the term 'Magh' used in Bengal to call the Arakanese pirates.

The significant influence of Islamic glazing technology on Arakanese ceramics does not mean that there was no technological relationship with Bagan and Mon in lower Myanmar. Little archaeological evidence shows technological connection, i.e. kiln construction and the use of kiln furniture, with other parts of Myanmar (Mon and Bagan). However, surface application technique, placement and the choice of subject matter somewhat differ from their counterparts. To better understand technological relationships, archaeological excavation of kiln sites in Mrauk U and chemical analysis of glaze is essential for further studies.

In summary, it is evident that Arakanese potter borrowed some stylistic elements from Islamic art. They used distinct and divergent glaze colorants from the Burmese and the Mon, especially cobalt blue, and glazing techniques - underglaze white painted on green and polychrome painting. The most distinguishing feature of Arakanese glazed tilework is the arrangement of small pieces of different colored glazed tiles in Jigsaw patterns. These remarkable styles and techniques of Arakanese tilework reflected the Islamic tradition of glazed tiling as a result of close ties with the Islamic Bengal. Indeed, this architectural faience had originated and developed in the Islamic world long before the Arakanese adopted it. The historical and political relationship between Mrauk U and Bengal and the resettlement of the Muslim community in Mrauk U had fostered the gradual development in the glazing technique and surface application of tilework. Perhaps, the Muslim artisan could have participated in the tile production process in the later Mrauk U period as the historical narratives provide evidence for the existence of Muslim craftsmen. This may lead to the enhancement of technology in the later Mrauk U period, evidenced by the sophisticated designs and patterns on polychrome painted tiles. Arakanese potters transferred these skills and techniques into their respective contexts and adapted particular motifs and styles to their architectural needs.

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