BARIKOT BEADS AND GANDHARAN ART ORNAMENTS: A CRITICAL STUDY OF ADORNMENT PRACTICES DURING THE KUSHANA PERIOD OF PAKISTAN

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To reconstruct and understand adornment practices during the Kushana period of Gandhara (1st-3rd centuries CE), this article compares selected examples of beads recovered from the stratigraphically excavated site of Barikot (Swat Valley, Pakistan) with the forms of beads carved into regional iconography, i.e., sculptures of Bodhisattva (Buddhist divine beings) deriving from the Gandharan world. This article evaluates bead shape, size, and style to determine if the carved depictions represent actual ornaments or if they are simply symbolic or imaginative. This analysis can provide new insight into how ornaments were worn in the early historic period of South Asia and into the accuracy of iconographic depictions.

INTRODUCTION

Ornaments, including beads, form important parts in the reconstruction of adornment practices existing in the past. Although numerous archaeological sites have yielded a great range of beads in the northwestern part of the Indo-Pakistani subcontinent over the past 100 years, research on Gandharan bead ornaments is relatively limited. The key sites of Bhir Mound and Sirkap in Taxila (Marshall 1951), for example, have revealed a large variety of beads and were the basis for some of the earliest systematic studies of stone beads carried out by Horace Beck (1928, 1941). Recent attempts to restudy beads from Dharmarajika Stupa in Taxila have provided important new data on raw material identification and drilling (Uesugi and Rienjang 2018), but stylistic comparisons with sculptures were not carried out. A clear chronology is also still lacking for the occupation phases of both Bhir Mound and Sirkap (Allchin 1993; Petrie 2013). As Khan et al. (2000:58) argue, "difficult to date even roughly, beads from sites in the northwest are almost always out of archaeological context... and may represent periods from the beginning of the occupation of a site to the present." Another key site for understanding stone beads and bead production for this general period is Arikamedu, a trading post and seaport site in South India (Francis 1991). Unfortunately, because the excavation was not stratigraphically controlled and investigators failed to recognize the accumulation of disturbed deposits, all the recovered artifacts were assigned to one period (mid-1st century BCE) (Ravitchandirane 2007:207). Such chronological limitations hinder an accurate reconstruction of the diachronic development of beads, and make it difficult to understand the chronological and cultural context of any bead.

Several Kushana-period coins and seals depict human figures and/or deities adorned with bead ornaments of various materials, shapes, and sizes (Baumer 2014:46; Callieri 1997). The number of bead depictions is limited, however, and their precise rendering may be affected by interpretative biases. The depictions may be exaggerated, fictionally created, or reflect omissions. Drawing simplistic deductions about bead materials and forms from any artistic depiction may also prove hazardous considering the well-documented coexistence of precious ornaments and cheap replicas in low-cost materials in South Asian contexts such as in the Indus traditions (Kenoyer 1991, 2001; Vidale and Miller 2000). Art figurines, sculptures, and iconographic depictions on coins or seals that depict bead ornaments are often produced smaller or larger than actual size, making it a challenge to extrapolate the probable material and/or shape of any portrayed bead. The size of the Gandharan sculptures, for instance, is not consistent or standardized. Also, the portrayed ornaments may include representations of organic materials such as leather, silk, wood, and vegetal fibers that do not survive in the archaeological record. Furthermore, with regard to seals, despite incorporating specific physiognomic features, some of the engraved figures may represent generalized/idealized human images rather than specific individuals as Lerner (2010) has argued regarding the portraits on the seals from Bactria and the Indo-Iranian borderlands. Hence, any portrayed jewelry on

any particular seal, coin, or sculpture may similarly reflect generalized images of beads rather than specific real objects.

Although several studies have proven that Gandharan artists reproduced ornaments as they truly appeared (Fabrègues 1991; Schmidt 1995, 1997; Tissot 1999) – especially a seminal article on the ear plugs from Barikot (Micheli 2007) – the problem of chronology remains. With the exception of the excavated material from Swat, no precise dates can be proposed for the Gandharan sculptures, although their chronological bracket cannot exceed the 1st-3rd centuries CE (Olivieri and Filigenzi 2018). As Tissot (1999:402) comments, "we cannot tell when the carvers of the statues copied the real jewels, and if these jewels were new in fashion, or ancient princely belongings, treasured for centuries by their families." Nevertheless, the studies carried out by scholars such as Tissot, Schmidt, Fabrègues, and Micheli have shown that at least some of the ornaments depicted on the Gandharan sculptures were based on real prototypes, which is why this article aims to carry out an additional comparison between the beads from Barikot and the forms of beads decorating Gandharan Bodhisattva religious statues. As Morphy (2010:266) states: "art production is too important to be neglected because it reflects emotional and experimental dimensions of being in the world."

While it is likely that the elaborately adorned images reflect ideals of adornment in ancient Gandhara, some scholars have proposed that the native nobility and aristocracy of Gandhara may have used images of Bodhisattva as a model to create their own appearance (Baumer 2014; Rosenfield 1967; Tissot 1999). This proposal is difficult to test as few ornaments have been recovered from well-dated sites. The many available representations of Kushan aristocratic types in statues, coins, and seals show no resemblance to the attire found on the different types of Bodhisattva images (Callieri 1997:256; Rowland 1961), suggesting that the Bodhisattva ornaments are indeed highly stylized. Nevertheless, it is useful to compare the archaeologically recovered beads and ornaments with those on these sculptures.

The latest stratigraphically controlled excavations at Barikot conducted by the ISMEO Italian Archaeological Mission in Pakistan revealed a great range of bead ornaments from contexts dated by a substantial series of radiocarbon analyses that provide a detailed chrono-cultural framework for the social evolution of ancient Swat (Olivieri and Iori 2020; Olivieri et al. 2019). Hence, Barikot is one of the few archaeological sites from this period that has a chronology supported by numerous radiocarbon dates. It provides an exceptional opportunity to attempt a critical comparison with the regional iconographic record of Gandharan Bodhisattva sculptures. In addition to the beads of Barikot, this study will include relevant beads from the excavations of other contemporaneous sites as potential matches with the sculptural evidence.

BARIKOT

Located in northwestern Pakistan (34°40'51"N, 72°12'46"E; ca. 799 m amsl) (Figure 1), the site of Barikot (Bir-Kot-Ghwandai) has been excavated systematically since 1984 under the direction of the Italian Archaeological Mission in Pakistan (now ISMEO) and currently by Professor Luca M. Olivieri. The site occupies an area of 12 ha and is bound to the north by a crescent-shaped hill and the Swat River. The urban settlement is located in a strategic position and the site has an impressive stratigraphic sequence that shows an astonishing occupational continuity divided into cultural phases or "macrophases" (Table 1) from the Bronze Age (1700 BCE) until the Medieval period (1500 CE). The site is identified as the city of Bazira that was conquered, according to classical historians, by Alexander the Great in 327 BCE (Baums 2019:169; Tribulato and Olivieri 2017). It has, however, a much earlier occupation extending back to the protohistoric period (Stacul 1987).

Macrophase 1 marks the second cultural phase of Barikot (1300-800 BCE) which corresponds to periods V-VIII of the Ghalegai sequence. The beginning of the

Figure 1. The Indian subcontinent showing the location of Barikot and historical sites mentioned in the text (all images by author).

Table 1. Barikot Chronology and Cultural Periods.

Macrophase	Chronology	Cultural Period
9a-9b	11th-15th centuries CE	Ghaznavid, Dardic, Timurid
8a-8b	ca. 7th-11th centuries CE	Turki-Shahi, Hindu-Shahi
7	ca. 5th-7th centuries CE	Post-urban phase
6	4th century CE	Kushano-Sasanian
5b	2nd half of the 3rd century CE	Kushano-Sasanian
5a	1st half of the 3rd century CE	Late Kushan
4b	2nd century CE	Mature Kushan
4a	1st-2nd centuries CE	Early Kushan
3b	1st century BCE to 1st century CE	Saka-Parthian
3a2-3a4	end of the 2nd century BCE	Indo-Greek
3a1	mid-3rd to early 2nd century BCE	Greco-Bactrian
2b	late 4th to mid-3rd century BCE	Mauryan
2a2	5th to mid-4th century BCE	Achaemenid
2a1	6th-5th centuries BCE	Pre-Achaemenid
1a-1b-1c	1300-800 BCE	Late Bronze & Early Iron ages

historical city dates to around 500 BCE (Macrophase 2a1), followed by the Achaemenid acculturation phase (Macrophase 2a2). The Macedonian siege of Barikot (autumn 327 BCE) and the succeeding Mauryan rule of the site occurred during Macrophase 2b. During the Indo-Greek phase (post-150 BCE) (Tribulato and Olivieri 2017; Zellman-Rohrer and Olivieri 2019), the lower city and its acropolis were refortified with the construction of a massive defensive wall (Macrophase 3a3). Eventually, Swat was annexed and maintained as a military stronghold by the invading Saka and Parthian dynasties between 50 BCE and 80 CE (Macrophase 3b) but lost its military significance during the Kushana phases (Macrophases 4a-5a: 80-250 CE).

It was during the Kushana period that the ancient city reached the pinnacle of its development, and became part of the "metropolitan" territory of a larger Kushan empire (Olivieri 1996). Barikot grew into a large, thriving settlement whose economy was largely based on agriculture and long-distance trade. Workshops and storage rooms were built around large well-constructed mansions along with Buddhist urban sanctuaries. A high level of veneration prevailed for the Buddha, the Bodhisattvas, and various local "deities" as evidenced by the recovery of numerous small stone stelae and narrative art panels in the excavated parts of the city. The city was probably under the political control of local Kushan vassal chiefs who were also the patrons of the Buddhist monasteries in the countryside (Olivieri 2014, 2016). After the Kushan political system fragmented, resulting from the emerging Sasanian power (Macrophase 5b: 250-270 CE), the lower city was abandoned (Macrophase 6; 300 CE) and the settlement was reduced to a fortified complex covering the whole hill (Macrophases 7 and 8: 400-1000 CE and Macrophase 9: 1000-1500 CE) (Olivieri 2015; Olivieri and Iori 2020; Olivieri et al. 2019).

GANDHARAN ART SCULPTURES

The iconographic assemblage of the Gandharan region is preserved in the form of stone and stucco sculptures in various narrative or static panels that depict the Buddha (without any ornaments), as well as elaborately ornamented images of male and female elites who worshiped or interacted with the Buddha. Among the most highly ornamented images in Mahayana Buddhist iconography are the Bodhisattvas, beings who have delayed their passage to *nirvana* or enlightenment (Fogelin 2015:151-152) in order to help the world and generally depicted as princely male figures. The Maitreya Bodhisattva is considered to be a divine being who will come in the future. Images of this

being are often among the most highly ornamented in the Gandharan repertoire. Another type of Bodhisattva who was part of the Mahayana Buddhist pantheon is Avalokiteshvara, a Bodhisattva of compassion and protection (Behrendt 2007; Rhi 2006).

Although many of the Gandharan sculptures found in the major museums today derive from disturbed contexts or have an uncertain provenience (Behrendt 2004:112; Rienjang and Stewart 2018), they form the richest available repertoire to study features of adornment during the Kushana phases of Gandhara. They include intricately carved ornamental objects that we can use to draw inferences about idealized and possibly actual ornament traditions between the 1st and the 3rd century CE. Any distinctive patterns and findings can provide new perspectives on their function, possible meanings, raw materials, craft organization, and trade connections with other geographical regions.

METHODOLOGY

A high-resolution photographic protocol was adopted to document the most relevant Gandharan art collections that depict ornamentation on display in five museums: the Guimet Museum (Musée national des arts asiatiques) in Paris, and the Taxila Museum, Lahore Museum, Swat Museum, and Peshawar Museum in Pakistan. The Barikot beads were documented with photographs and measurements using a digital caliper, and the raw materials were initially identified with the expertise of Professor Massimo Vidale and Professor Ivana Angelini (University of Padova and ISMEO, Italy) using a stereomicroscope equipped with a digital camera. The final raw material identifications of the stone beads of Barikot and the forms of beads produced on the sculptures were confirmed with the assistance of Professor J.M. Kenoyer, University of Wisconsin, Madison. The beads of Barikot were analyzed and classified according to the systems developed by H.C. Beck (1928) and J.M. Kenoyer (2017), supplemented by the author's own observations.

In order to make a reliable correlation between an archaeological bead from Barikot and the carved image of a bead in a stone sculpture, the main variables considered were the shape, size, style, and chronology of the two. It was also possible to address the challenging concept of "value" as viewed in the past (Kenoyer 2000; Miller 2008; Moffett and Chirikure 2016; Papadopoulos and Urton 2012). Several factors increased the value of an object in the past, including the availability or rarity of raw materials, elite control, and the technological skills required for its manufacture. These aspects clearly mattered in the ancient world as, for example, research on the Indus Valley Civilization by J.M. Kenoyer has exemplified (Glover and Kenoyer 2019:182; Kenoyer 2000:91; Miller 2008; Vidale and Miller 2000). It is unlikely that materials of low value were included in the richly adorned Bodhisattva sculptures alongside high-value stones and metals. Gandharan artisans appear to have adorned the Bodhisattva statues with depictions of beads of both "exotic" materials such as carnelian, as well as locally available materials such as garnet and rock crystal, probably because of their physical and symbolic properties. Furthermore, artisans used locally available materials such as rock crystal, garnet, beryl/aquamarine, and amethyst for the first time during the Saka-Parthian and early Kushan phases (Macrophases 3b-4a), possibly exerting some ritual or cultic function. This function may be another factor that made these materials valuable in the eyes of the Gandharan patrons and artisans associated with the Bodhisattva sculptural tradition.

CASE STUDIES

The following seven case studies compare specific bead types with ornaments carved on stone sculptures, giving rise to new ideas and discussions.

Case Study 1

We begin with the vase- or *ghata*-shaped beads seen on Maitreya Bodhisattva sculptures (Figures 2-3). At Barikot, we first see these beads in terra cotta during the Indo-Greek period (Macrophases 3a2-3a4: end of the 2nd century BCE) while those made of stones such as garnet (Figure 4) arise during the Kushana phases (Macrophases 4a-b: 1st-2nd centuries CE). These beads usually have a globular shape with a distinct collar or rim at one end, defined by Beck (1941:33) as resembling a globular vase or pot. They are now called *ghata* or *ghara*, the Hindi word for a traditional terra cotta water pot (Dikshit 1952:52-63; Gosh 1947-1948: Plates 43-46). Several of the Bodhisattva sculptures wear various sizes of *ghata*-shaped beads (e.g., Bodhisattva Maitreya and Avalokiteshvara from Sahri Bahlol, Peshawar Museum). On the sculptures, we usually see this bead suspended as a pendant along with other amulets worn together on a long cord that drapes across the torso from the left shoulder to the right hip (Figure 2). The archaeologically recovered stone beads of this type are usually made of garnet, rock crystal, beryl, or carnelian. The *ghata* may have represented a container of sacred water or some other offering, but its precise significance will remain uncertain until a reference is found in one of the Buddhist texts.

Figure 2. Carved *ghata*-shaped bead (delineated) on a Bodhisattva Maitreya (Dhamani, ca. 2.43 m high) (courtesy of Department of Archaeology, Lahore Museum, Government of Punjab).

Figure 3. Detail of the *ghata*-shaped bead in Figure 2.

Case Study 2

Another Bodhisattva appears to exhibit a bead with circular motifs or depressions (Figures 5-6) that resemble glass eye beads which are found widely distributed across the region (Beck 1941). Eye beads made of faience and agate, probably imbued with apotropaic power to avert the evil eye, come from Indus Tradition sites such as Harappa, Sanauli, and Mohenjo-daro (Kenoyer 2014; Prabhakar 2014; Vidale 1987). The carved bead on the Bodhisattva is clearly visible on the chest of the figure, possibly to ward off evil rather than to display prestige and wealth. Although the carved object is without doubt an eye bead, we cannot directly link it with eye beads made of glass. There are depressions on the surface of the engraved bead, which were probably inlaid with stones to form the eye design. Excavation has uncovered similar inlaid eye beads at Sirkap and other parts of Taxila, but not at Barikot. Beck (1941: Plate I, no. 8 and Plate II, nos. 36, 38-39, 43-45) defines them as cemented stone eye beads while Marshall (1951:746) details that they are stone to which pieces of differently colored stone are cemented in order to form the eyes. The inlaid stones were probably also high-quality materials such as carnelian, agate,

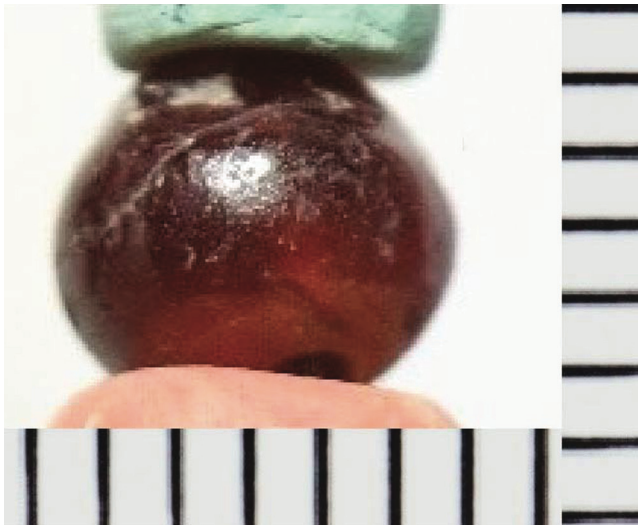

Figure 4. *Ghata*-shaped garnet bead from Barikot, BKG 4175 (Macrophase 4b: 2nd century CE).

Figure 5. Carved eye bead (delineated) on a Bodhisattva Avalokiteshvara (2nd-3rd centuries CE; Sahri Bahlol, ca. 1.02 m high) (courtesy of Directorate of Archaeology, Peshawar Museum, Khyber Pakhtunkhwa).

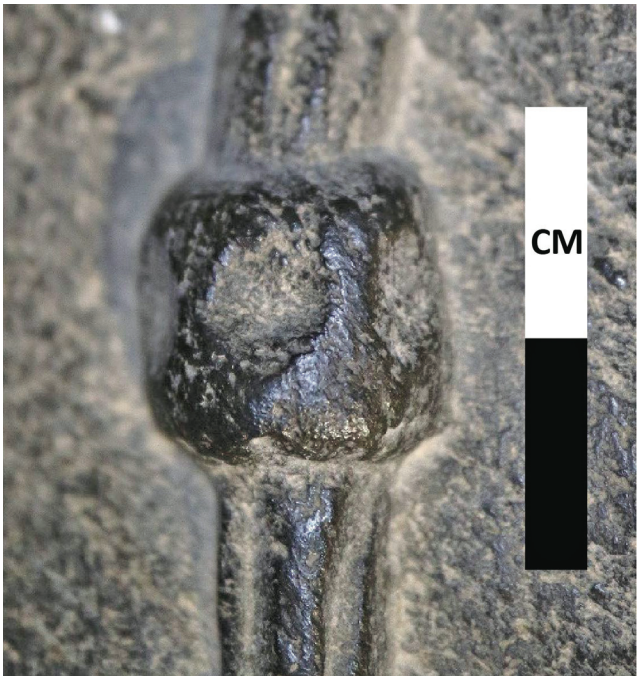

Figure 6. Detail of the carved eye bead in Figure 5.

or chalcedony, if we may judge by the recovered cemented stone beads from Taxila. Hence, we cannot identify the bead on the sculpture as representing a glass bead.

Case Study 3

Beads carved on a Bodhisattva Avalokiteshvara may be representations of long, hexagonal, barrel beads (Figures 7-8). A similar bead (Figure 9) found at Barikot (BKG 2453) was made of carnelian, a high-value material. Although this bead belongs to the later Kushano-Sasanian phase (Macrophase 5b: second half of the 3rd century CE), such bead types could reasonably derive from the Kushan phases as well, which the example discussed in case study 6 shows. The carnelian bead from Barikot is the only known specimen of this type, supporting the idea that there was a demand for rare types of wealth items to display prestige and high status. Hexagonal barrel beads were also made of other stones such as rock crystal and amethyst, as seen in many examples from sites at Taxila (Beck 1941: Plate VI, no. 53) and Vaisali (Sinha and Roy 1969: Plate LXIIA, nos. 172-173).

Examination of the carved beads shows that the exterior facets have a slightly concave section (Figure 8). So far, we have no archaeological examples of concave faceted surfaces on beads and this feature may reflect specific stone-carving styles rather than copies of actual beads. Although their precise meaning remains unclear, faceted beads were certainly manufactured to reflect light, possibly with the intention to create a symbolic effect as outlined in Buddhist

Figure 7. Carved hexagonal barrel beads (delineated) adorning a Bodhisattva Avalokiteshvara (2nd-3rd centuries CE; Sahri Bahlol, 1.53 m high) (courtesy of Directorate of Archaeology, Peshawar Museum, Khyber Pakhtunkhwa)

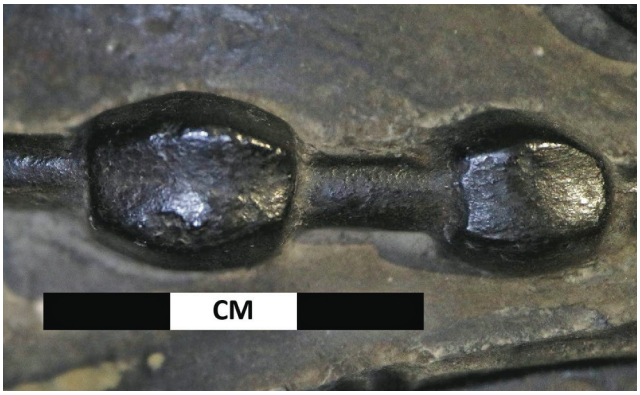

Figure 8. Detail of the carved hexagonal barrel beads in Figure 7.

literary traditions (Granoff 1998). The popularity of creating six facets may have a significance that the vast body of Buddhist literature might illuminate.

Case Study 4

A unique type of bead carved on a Bodhisattva Maitreya sculpture clearly represents another faceted stone bead, probably carnelian or rock crystal. It is biconical rather than barrel shaped (Figures 10-11). Although the Kushana period at Barikot has revealed no long hexagonal bicones, archaeologists have recovered similar beads made of carnelian at other contemporaneous sites such as Vaisali (Sinha and Roy 1969: Figure 57B, no. 11). Thus far, only six carnelian and four agate beads have been recovered from Kushana-phase contexts in different parts of Barikot (Macrophases 4a-b and 5a: between the 1st century and the first half of the 3rd century CE), probably reflecting their status as prestige objects in Kushan society. In fact, a variety of faceted beads, probably representing originals made of carnelian or rock crystal, are common not only on Bodhisattva statues but also on other Gandharan sculptures such as those of Hariti (Sikri) and Panchika (Tahkal, Lahore Museum).

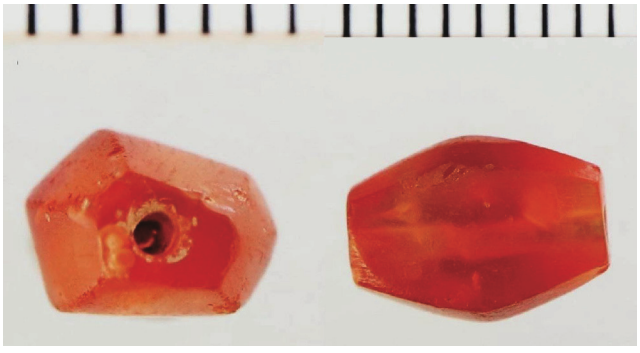

Figure 9. Faceted barrel bead of carnelian from Barikot, BKG 2453 (Macrophase 5b: second half of 3rd century CE).

Figure 10. Long hexagonal bicone bead (delineated) adorning a Bodhisattva Maitreya (2nd-3rd centuries CE; Mohra Moradu, ca. 1.02 m high) (courtesy of Department of Archaeology, Taxila Museum, Government of Punjab).

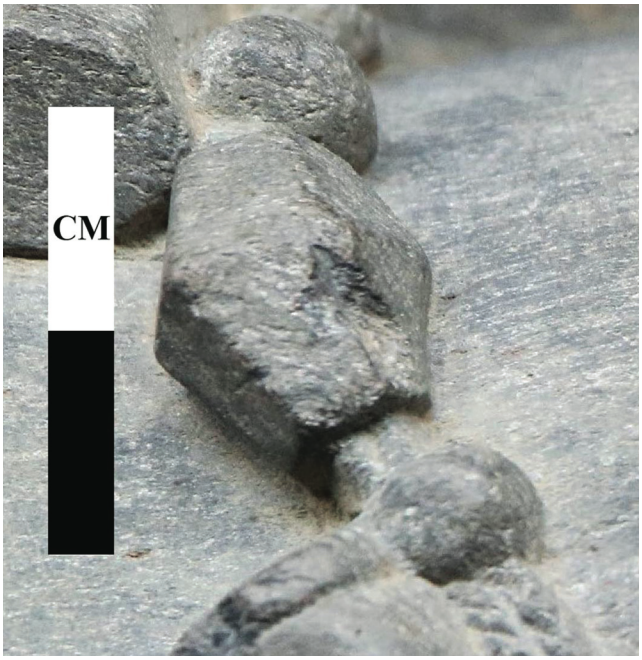

Figure 11. Detail of the carved hexagonal bicone bead in Figure 10.

Case Study 5

The adornments on a Bodhisattva Maitreya sculpture include at least one collar bead. Made in various forms, these beads all have a "collar" around each end. Although artisans of the Indus Tradition already produced them, such beads only became common during the early historic period (Francis 1986:117, 2002:42). A single collar bead of shell was found in the Saka-Parthian levels at Barikot, but no example has come to light from the Kushana period. Archaeologists have found greater quantities of collar beads of stone and glass in South India compared to other locations, while Arikamedu has yielded evidence of their production (Francis 2002:42).

There are two major types of collar beads: flat and barrel. The former have a flat section, a round or lozenge-shaped body, and protruding collars at the ends (Francis 1986:117), as do some glass collar beads from Sirkap, Ahichchhatra, Sonkh, and Alagankulam (Beck 1941: Plate IX, no. 14; Dikshit 1952: Figure 5, no. 112; Gunasena 2018:315; Härtel 1993:302, no. 33). Wheeler, Ghosh, and Krishna Deva (1946:97) define them as "lug-collared."

Barrel collar beads have a round cross section, a barrel-shaped body, and collars which are little more than incised lines around the ends (Beck 1941: Plate VI, no. 20; Francis 1986:117). Wheeler, Ghosh, and Krishna Deva (1946:97) call them "groove-collared." The example which appears in the center of the chest of the Bodhisattva sculpture is gadrooned (Figures 12-13). A similar bead made of glass was found at Sirkap in Taxila (Beck 1941: Plate IX, no. 15).

Figure 12. Gadrooned collar bead (delineated) on a Bodhisattva Maitreya (2nd-3rd centuries CE; Sahri Bahlol, ca. 1.28 m high) (courtesy of Directorate of Archaeology, Peshawar Museum, Khyber Pakhtunkhwa).

Figure 13. Detail of the gadrooned collar bead in Figure 12.

A possible collar bead is situated over the sculpture's right armpit (Figures 14-15). Its collars are not aligned, but point upwards at an angle. An apparent parallel is a unique carnelian bead from Taxila (Figure 16) called a "collared ball" by Beck (1941: Pl. IV, no. 11). The carver may thus have copied in stone a real collared ball bead, possibly made of a high-value stone such as carnelian or garnet. Various types of collar beads adorn numerous figures in Gandharan art, for example, the right-hand-side "guard" figure in narrative relief from the Shotorak monastery in the Musée Guimet. Alternatively, the possible "collared ball" may be a globular bead flanked by short barrel-shaped beads, as its configuration is reminiscent of the natural curve of beads strung together. The best interpretation will depend on the finding of a collared ball bead at Barikot.

Case Study 6

From the 3rd-2nd centuries BCE onwards, the Buddhist Sangha began favoring new symbolic associations with natural forms, possibly in reaction to preexisting "orthodox" ideological associations stressing the dominance of artificial, abstract bead forms (Vidale 2005:324). We see this archaeologically in evidence coming from the Kushana period at Barikot, in the form of beads made from coral, pearls, and marine and cowrie shells. Interestingly, Bodhisattva statuary may also show unmodified or

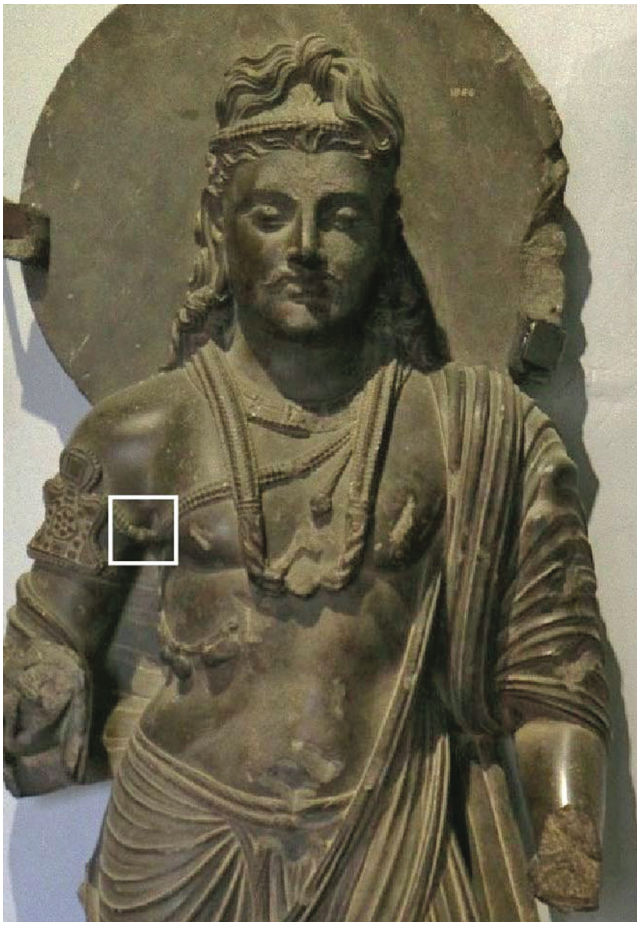

Figure 14. Possible collar bead (delineated) on the Bodhisattva Maitreya.

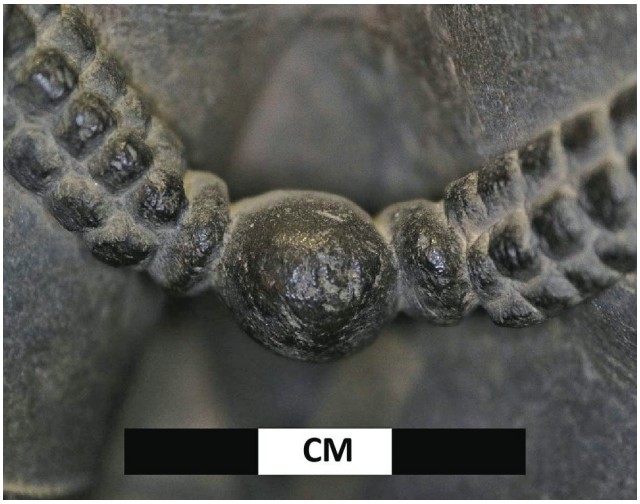

Figure 15. Detail of the possible collar bead in Figure 14.

minimally modified forms of materials. Figures 17-18 show a carved, long, hexagonal, cylinder flanked by short barrel-shaped beads. The material of the beads on which the carving is based was probably not emerald, judging from the relatively smaller crystals produced in the emerald mines of Swat that are still in operation. Rather, the carved depictions may represent aquamarine, a color variant of beryl. Aquamarine is commonly found in many areas of the Karakorum Range and occurs in relatively large crystals in the Gilgit-Baltistan region, as represented on the sculptures (Grande and Augustyn 2009:125-126; Wenk and Bulakh 2004: Plate 15, c). Beryl crystals would have required little modification to transform them into beads, supporting the carvers' taste for natural forms. Excavations at Barikot have revealed what appears to be a long, hexagonal, barrel bead, made of beryl/aquamarine with a slightly bluish-purple color (Figure 19). Likely, the beryl/aquamarine was acquired from other regions and not from Swat, as this material is common in the stupa deposits of Bimaran and Hadda in Afghanistan, as well as Dharmarajika in Taxila (Rienjang, Kenoyer, and Sax 2017; Uesugi and Rienjang 2018). A distant source may explain the apparent rarity of beryl/aquamarine beads at Barikot.

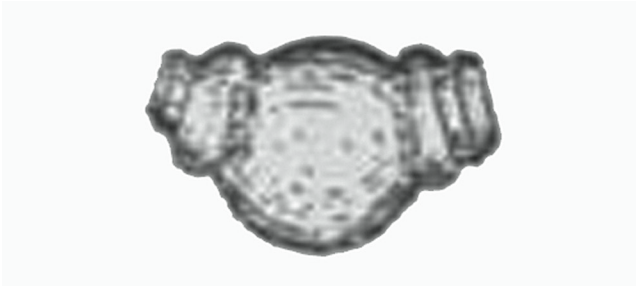

Figure 16. Collared ball of carnelian, Bhiṛ Mound, Taxila (Beck 1941: Plate IV, no. 11).

Case Study 7

The hairnet of another Bodhisattva image is loaded with repeated sequences of what appear to be short, faceted, biconical and/or barrel-shaped beads (Figures 20-21). The models for these beads were most likely faceted rock crystal, amethyst, carnelian, or agate, examples of which exist at Taxila and other contemporaneous sites (Beck 1941: Plate III, no. 32; Sinha and Roy 1969: Figure 50, nos. 6, 8; Uesugi and Rienjang 2018). These types of beads are also found in Southeast Asia and Korea during this time period (Carter 2013; Glover and Kenoyer 2019; Heo 2018). Due to the sheer variability in bead shapes, we must carefully ground our comparison between the short faceted forms excavated at the various archaeological sites and the beads decorating the hairnet. Long, faceted, barrel-shaped beads of rock crystal are associated with the Kushana period at Barikot but they do not match the short, faceted, biconical and/or barrel-shaped beads depicted on the Bodhisattva

Figure 17. Carved, long, hexagonal, bead (delineated) on a Bodhisattva Maitreya (2nd-3rd centuries CE; Mohra Muradu, ca. 1.02 m high) (courtesy of Department of Archaeology, Taxila Museum, Government of Punjab).

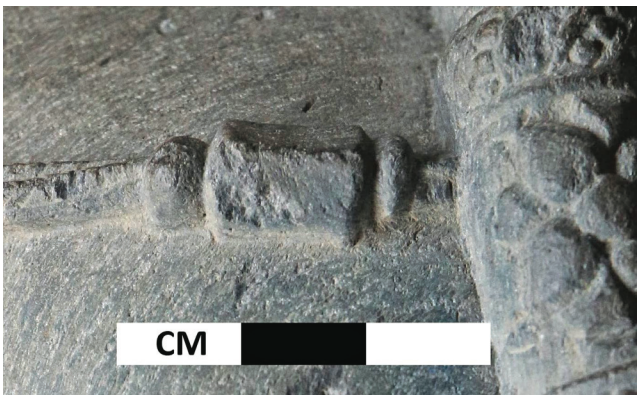

Figure 18. Detail of the hexagonal bead in Figure 17.

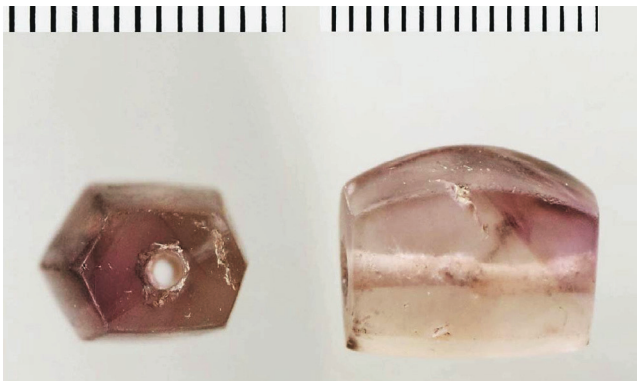

Figure 19. Long, hexagonal, barrel bead from Barikot, probably beryl/aquamarine, BKG 3181 (Macrophase 4a: 1st-2nd centuries CE).

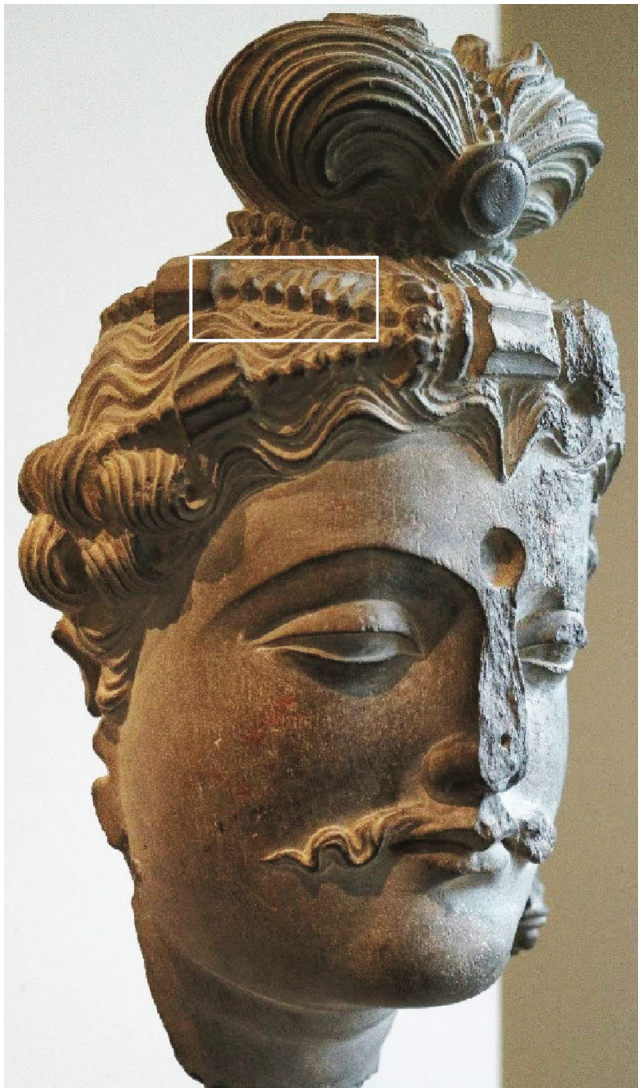

Figure 20. Short faceted beads (delineated) on a Bodhisattva Maitreya (1st-3rd centuries CE; Buner Valley, ca. 0.33 m high) (courtesy of Musée national des arts asiatiques, Paris).

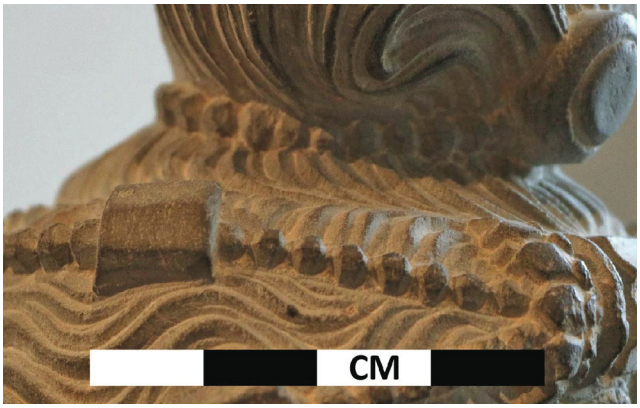

Figure 21. Detail of the faceted beads in Figure 20.

image. Possibly, future excavations at Barikot will reveal such beads of rock crystal or other materials. Black or deep red garnet crystals, found in the schist deposits of Swat, may constitute a match especially since the use of garnet by the Great Kushans is well attested by garnet seals and an eight-sided gold amulet case decorated with several inset garnet stones (Adams 2011:20; Schmidt 1995:33). Nonetheless, although the use of garnet is well documented during the Kushana period, beads were never made from the naturally faceted garnets that come from schist deposits. Further, the few faceted garnet beads are usually extremely small and not the size that is depicted on the Bodhisattva headdress.

CONCLUSION

There is no doubt that at least some of the beads depicted on the Bodhisattva images represent real-life prototypes. From a visual perspective, there are several strong parallels between the two sources of evidence with only minor differences reflecting the sheer variability among the bead types as well as the weathered condition of the carved ornaments. It is highly likely that all of the proposed beads were highly valued and well-polished to create not only a reflective effect but also to symbolize purity, luminous qualities, and divine properties. Further, the identification of the portrayed beads has shed light on the long-distance trade network that operated at the time with carnelian, for example, imported from either the Sistān region in Iran to the west or Gujarat to the southeast (Law 2011; Tosi 1969:374). Since the Bodhisattva sculptures represent the male gender, representations of women, children, and animals are excluded from this analysis. Consequently, only a limited selection of bead types appear on the Bodhisattva sculptures, resulting in few correlations. From the richly decorated narrative panels and female sculptures, however, we do know that females wore bead ornaments at Gandhara as they did in other parts of the subcontinent during the same time range (Fabrègues 1991).

In fact, several additional beads from Barikot show positive correlations with ornaments carved on various art sculptures of Gandhara including short biconical and short spherical beads of carnelian, perforated cowrie shells, and pearls. Several perforated cowrie shells, for example, come from the Kushana phases of Barikot (Macrophases 4a-b and 5a: between the 1st century and the first half of the 3rd century CE), while a necklace of perforated cowries adorns a female sculpture discovered in the sacred stupa area of Butkara I at Swat (Faccenna 1964: Plate CDXXXII, no. 3969). Although it is difficult to assign a precise date to it, the sculpture does not belong to the earliest stylistic group, but to a production that is certainly later than the early 1st century CE. In fact, a great variety of bead materials with both geometric and figurative forms derive from the Kushana layers of Barikot (Figure 22) signifying a period of sustained growth and prosperity. Deeper study should be conducted on the bead assemblages from Taxila, a key metropolitan site of greater archaeological significance, taking its chronological limitations into account. At the same time, there is a need for more stratigraphically controlled excavations of historical sites across the subcontinent to obtain reliable information on the chronology of each new bead.

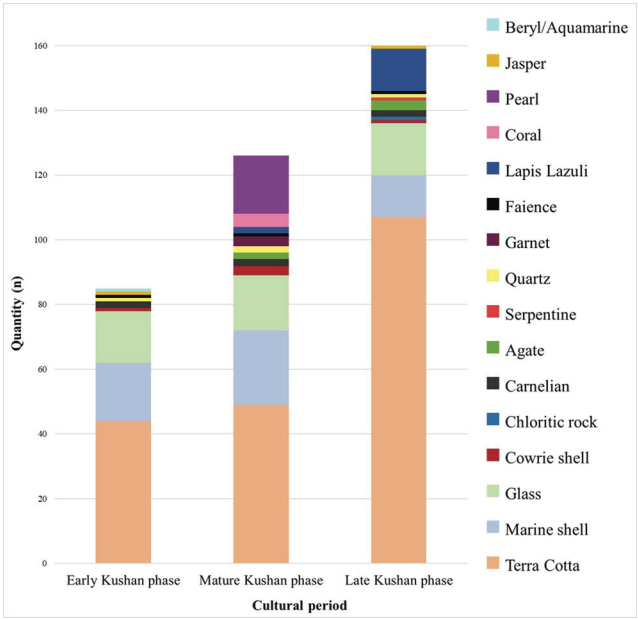

Figure 22. Distribution of raw materials during the Early, Mature, and Late Kushan phases of Barikot (Macrophases 4a-4b and 5a: between the 1st century and the first half of the 3rd century CE).

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