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Between Reality and Imagination:
A Critical Typological Comparison between the Beads from the Early Historic site of Barikot and the Forms of Beads in Gandhāran Iconography

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Abstract: The archaeologically well-surveyed, excavated, and documented site of Barikot (Swat Valley, north-western Pakistan) has revealed a great range of material culture items from different areas and all chronological periods of the site. Various categories of ornaments including beads with both geometric and figurative forms have been found in the systematic excavations including from the cultural deposits linked to the Kushana phases of the settlement (1st – 3rd century CE), providing evidence of the cultural, economic, and artistic blooming of the Swat Valley at the time. From the same time and region, we find material evidence for the production and use of distinct stone art sculptures of male and female groups that are heavily bejewelled and are associated with the Gandhāran Buddhist tradition. We get the impression, based on the examination of the intricately carved ornamental objects, that traditions of personal adornment must have played an integral part in the identity construction and the daily lives of the inhabitants of the entire region during the Kushana periods. In order to try to verify this observation and reconstruct the prevailing adornment practices of the people of this dynamic time, this article critically cross compares selected types of archaeological beads that have been recovered from the excavations at Barikot with the forms of ornaments decorating the Gandhāran art sculptures, building upon existing research carried out in earlier work. The shape, size, and style of the sculpted ornaments are critically cross compared with the archaeological evidence to determine if they are based on real prototypes or if they are simply symbolic or imaginative. The interpretations produced in this article not only offer new insight into how ornaments were worn within the religio-cultural context of Gandhāra in the early centuries of the Common Era but also inform about the accurateness of iconographic depictions.

Keywords: Barikot, Swat, Beads, Kushana, Gandhāran art sculptures, Adornment

Introduction

As is common in contemporary times, items of jewellery including beads of various raw materials and forms were, for a variety of reasons, worn by men, women, children, and even used to adorn animals in the ancient world. As a result of being durable and portable, they are found in great numbers in the excavations of archaeological sites from around the world especially in South Asia, clearly representing one of the most important craft industries of the ancient past. Although the analysis of archaeological beads from well-stratified contexts has the potential to reveal important information especially in relation to the types of raw materials and shapes that were desired, favoured, and procured, they may, however, not necessarily inform us on the ways as to how the ornaments were strung and worn while the identity of the wearer may also remain elusive. In this regard, a systematic investigation of the artistic representations of beads from the local and/or regional art-historical archive, if available, may well represent one of the most useful and powerful proxies to enable us to reconstruct and understand aspects of adornment traditions as they existed in the past. Within the geo-cultural context of the ancient region of Gandhāra, it is of utmost relevance to draw upon the rich artistic collection of resource materials that we have in the form of carved schist stone figures and reliefs, associated with the distinctive Gandhāran Buddhist sculptural tradition, at our disposal. The sculpted images, especially the Bodhisattva types, embody a naturalistic and conspicuous appearance adorned elaborately with various categories of complex

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ornaments including jewelled necklaces, earrings, armbands, and amulet cases, which can be utilised to draw relevant inferences about idealised and possible actual ornamental traditions prevalent in Gandhāra during the first several centuries of the Common Era.

Although the most popular class of ornaments in Gandhāran visual art is composed of beads, it is important to stress at this point that there are several variables that may potentially affect our models of definitions and interpretations: The representations of the sculpted beads may be exaggerated, fictionally created, or deliberately omitted. The materials and shapes that we see in the visual art repertoire, hence, need to be subjected to a careful 'autopsy' to try to identify and interpret the evidence properly especially since we are aware of the coexistence of precious ornaments and cheap replicas in low-cost materials in the ancient history of South Asia such as during the Indus period (Kenoyer 1991, 2001; Vidale and Miller 2000). Although several studies have demonstrated the reproduction of a range of types of ornaments that are based on real prototypes (Fabrègues 1991; Micheli 2007; Rabbani 2020b; Schmidt 1995, 1997; Tissot 1999), the problem is related to the chronology. Compared to the excavated material from the Swat Valley, we are currently not in the position to propose secure dates for those sculptures that derive from other parts of the region, although the limits of their chronological bracket certainly fall within the 1st and the 3rd century CE (Olivieri and Filigenzi 2018). We must, as a result, agree with the conclusion drawn by F. Tissot when she noted, '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' (Tissot 1999: 402).

The series of studies carried out in earlier work have, nevertheless, demonstrated that at least some of the ornaments that we see depicted in the Gandhāran visual repertoire were based on real prototypes. The aim of this article is, therefore, to expand and build upon this earlier work by adopting another cross-comparative assessment. As such, the well-stratified beads recovered from the archaeological site of Barikot (Swat Valley, north-western Pakistan) are, through a series of case-studies, confronted with the forms of beads decorating the Gandhāran art sculptures especially the Bodhisattva images. In contrast to the earlier study (Rabbani 2020b), this contribution seeks to analyse the iconographic depictions of beads on both male and female images to provide new perspectives on aspects of gender roles during the vibrant Kushana periods of Gandhāra. Although much of the art historical material that is on display in museums and other institutions today derives from disturbed archaeological contexts and/or have an uncertain provenance source (Behrendt 2004: 112; Rienjang and Stewart 2018), they form the richest available repertoire to study aspects of adornment during the Kushana periods of Gandhāra. Although it is not possible to confidently identify the types of raw materials that are referenced in the art of Gandhāra, the analysis presented in this article remains important as it informs us on the accurateness of iconographic depictions and, in the process, about the potential ways beads were strung and worn by the inhabitants of the region. Any correlations and patterns would provide new perspectives on their potential function, meanings, raw material identifications, craft organisation, and/or cross-cultural links with other regions. It would allow us to determine how ancient communities may have used beads from both local as well as more distant cultural traditions to craft their own local identity.

Barikot

The fertile and resource-rich Swat Valley of north-western Pakistan is situated in the Hindu Kush-Karakoram foothill region (34°40'51"N, 72°12'46"E; ca. 799 m amsl), which is filled with widespread evidence of ancient occupation, most notably, in the form of archaeological and historical sites of various types from different chronological periods. In this regard, one of the most important key-sites of the entire region, in archaeological terms, is Barikot, covering nearly 20 hectares in size. It incorporates an upper mound area and a lower city on the adjacent part of the valley floor. Selected areas of the site have been both horizontally and vertically excavated in

a systematic way since 1984 under the direction of the Italian Archaeological Mission in Pakistan (now ISMEO) and currently led by Professor Luca M. Olivieri. The evidence for the beginning of the occupation at the site, in chronological terms, can be traced back to ca. 1700 BCE whereas the foundation of the establishment of the historical city (Table 1) dates to about 500 BCE (Macrophase 2a1), followed by the Achaemenid acculturation phase (Macrophase 2a2). Classical historians name the city as Βάζιρα (Bazira) in their chronicles informing about the siege and fall of the urban settlement to the armed forces of Alexander the Great in the autumn of 327 BCE (Baums 2019: 169; Olivieri and Iori 2021; Tribulato and Olivieri 2017). The Macedonian conquest and the succeeding Mauryan rule over the site fall into Macrophase 2b.

During the Indo-Greek contact phase (post-150 BCE) (Tribulato and Olivieri 2017; Zellman-Rohrer and Olivieri 2019), the pre-existing defences of the lower city and its acropolis were subjected to an extensive re-fortification building program, resulting in the construction of a massive stone masonry defensive wall (Macrophase 3a3). Eventually, the Saka-Parthians managed to gain control over the Swat Valley and the city was militarily reinforced and augmented between 50 BCE and 80 CE (Macrophase 3b) but lost its military function during the Kushana periods (Macrophases 4a-5a: 80-250 CE). As a result of shifting geo-political developments and a sequence of events of instability (the impact of a series of earthquakes and the disintegration of the Kushana political system), we see the retraction of the site onto the upper mound at the end of the 3rd century CE/early 4th century CE, transforming into an impressive, well-fortified complex (Macrophases 7 – 9: ca. 400-1500 CE) (Olivieri 2015; Olivieri and Iori 2020, 2021; Olivieri *et al.* 2019). The excavations have, consequently, revealed a great range of material culture items including various types of beads and pendants, which are supported with a comprehensive series of radiocarbon dates, providing a clear and very detailed chrono-cultural framework for the social evolution of ancient Swat (Olivieri and Iori 2020; Olivieri *et al.* 2019). An exceptional opportunity is, therefore, provided to critically cross compare a reliable and space-time demarcated assemblage of beads with the regional iconographic record.

Table 1. Chronology and cultural periods of Barikot

Macrophase	Chronology	Cultural period
9a – 9b	11th – 15th century CE	Ghaznavid – Dardic – Timurid
8a – 8b	ca. 600 – 1000 CE	Turki-Shahi – Hindu-Shahi
7	ca. 400 – 600 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 Kushana
4b	2nd century CE	Mature Kushana
4a	1st – 2nd century CE	Early Kushana
3b	1st BCE – 1st century CE	Saka-Parthian
3a2-3a4	end-2nd century BCE	Indo-Greek
3a1	mid-3rd – early-2nd BCE	Graeco-Bactrian
2b	end-4th – mid-3rd BCE	Mauryan
2a2	5th – mid-4th BCE	Achaemenid
2a1	6th – 5th century BCE	Pre-Achaemenid
1a-1b-1c	1300 – 800 BCE	Late Bronze Age – Early Iron Age
0	1700 – 1400 BCE	Bronze Age

Methodology

The beads recovered from Barikot were documented with photographs and measurements using a digital caliper. The raw materials were initially identified using specialist observation, which was provided by Professor Massimo Vidale and Professor Ivana Angelini (University of Padova and ISMEO, Italy) using a stereomicroscope (OM imaging) 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, USA). The beads of Barikot were analysed and classified according to the formats established by H. C. Beck (Beck 1928) and J. M. Kenoyer (Kenoyer 2017), supplemented by the author's own observations. In addition to the archaeological beads of Barikot, this study will discuss relevant beads from the excavations of other contemporaneous sites as potential matches with the sculptural evidence. This contribution is, therefore, not limited to the Barikot bead assemblages but expands the comparative beads to the many well published reports on beads from other sites that have also the data that is needed.

A high-resolution photographic protocol was adopted to document the most relevant Gandhāran art collections (depicting ornamentation) on display at the Guimet Museum in France (Musée national des arts asiatiques), the Taxila Museum, the Lahore Museum, the Swat Museum, as well as the Peshawar Museum in Pakistan. While the examination of these displayed pieces is the focus of this study, the corpus of art sculptures published in the reports of the key-sites of Butkara I and Tapa Sardār is also considered (Faccenna 1964; Taddei and Verardi 1978), which provides additional important evidence in terms of the artistic expression of some specific types of ornaments. To try to make a reliable correlation between the archaeological specimens and their proposed iconographic counterparts, the main variables considered were the shape, size, style, and chronology of the two. It is unlikely that materials of low-value were included in the richly adorned images in the presence of high-value metals, stones, and other materials.

Case Studies

The following six case studies provide examples of specific specimens that can be cross compared with the forms of ornaments carved on the regional art sculptures and are intended to promote new ideas and future debates.

Case Study 1: Perforated and Unperforated Cowrie shells

Shells of the genus *Cypraea*, commonly known as cowrie represent a group of small to large marine gastropods of the *Cypraeidae* family. They can be found, among other ways, modified by the removal of a small section of their dorsal side (dome-shaped) in order to facilitate stringing. The symbolism of the cowrie shell is connected with the appearance of its ventral side, resembling a female vulva or a squinting eye whereas their association with male groups seems to be sporadic as evidenced from the study of the wider archaeological record (Goalni 2014: 72-74). Cowries have, therefore, been commonly interpreted as amulets intended to increase fertility and to ward off the evil eye (Andrews 1994: 42; Yang 2018). The evidence for the import and use of cowrie shells is also documented at Barikot during the Saka-Parthian period – a trend that appears to have increased in volume during the Kushana periods (Rabbani 2020a; 2022), although a few cowrie shells (comparatively larger in dimensions) are also reported from the protohistoric period of the second millennium BCE (Stacul 1987: 223).

Perforated and unperforated cowrie shells have been found from the Kushana periods of Barikot (Macrophase 4a-b and 5a) while a cowrie shell necklace can be seen adorning a half-life size female sculpture discovered from the Buddhist site of Butkara I in Swat (Faccenna 1964: Pl. CDXXXII no. 3969). Although it is difficult to propose a precise date, the production of the sculpture certainly took place later than the early 1st century CE (Fig. 1). The archaeological cowrie shells (BKG 4415: Fig. 2) were probably imported through cross-cultural interactions along the long-distance trade and exchange networks of the time, linking the Swat Valley with the Arabian sea coast areas some 1200km to the south. They probably

originated from the waters surrounding the islands of the Maldives where they can be found in their natural habitats (Yang 2018). The association of the sculpture with the sacred Buddhist area of Butkara I and the symbolism related to the concept of female fertility suggest for a ceremonial use of cowrie shells in association with female groups in Swat, although a potential connection with male groups cannot be entirely ruled out at present.

Figure 1. Female adorned with a cowrie necklace (h. 32 cm; Faccenna 1964: Pl. CDXXXII no. 3969; Museo delle Civiltà, Rome inv. MNAOr 1180). (Courtesy ISMEO).

Figure 2. Perforated cowrie shell (*cypraea moneta*) from Barikot (BKG 4415: Macrophase 4b). Photograph by M. A. Rabbani.

Case Study 2: Long Barrel beads

Earlier studies have already demonstrated the popularity in the use of hexagonal faceted long barrel beads among the people of the Kushana periods, which we note not only among the assemblages of beads from contemporary regional sites but also in the adornment attire of the Bodhisattva images (Rabbani 2020b, 2022). Interestingly, a particular Bodhisattva statue has now been identified, which appears to be adorned with at least six visible long barrel beads that are possibly part of a long necklace (Fig. 3). These beads are potentially referencing a semi-precious stone like carnelian while a long barrel bead of carnelian has, as a matter of fact, been found in the excavations at Barikot (BKG 2630: Fig. 4), attributed to the first half of the 3rd century CE (Macrophase 5a). Carnelian was probably imbued, as already discussed in the earlier examples (Rabbani 2020b, 2022), with value and considered a wealth or prestige material (among other associations) at the time (see Rabbani 2022 for details). With regards to the dimensions, this figure is half-life size, so the carved beads are, therefore, equally small in size but very close to the dimensions of the proposed bead of carnelian from Barikot (within 1.0 – 0.8 cm).

This Bodhisattva image appears to be the only example in the examined assemblage of sculptures (see Rabbani 2022) that can be found adorned presumably with long barrel beads while the excavations at Barikot have, likewise, revealed only a single long barrel bead of carnelian from the Kushana periods thus far. On the other hand, since the sculpture is only half-life size, the depicted beads may have become subject to some degree of stylisation as opposed to the beads that

are more complex and finely carved on the larger Bodhisattva figures. As such, we may be actually looking at hexagonal faceted long barrel beads. The facets along the profile view of the carved beads may have been omitted while the facets that would characterise the cross-section may be concealed from the view of the observer as a result of the adjoining beads in the sequence. There is, therefore, a possibility that these carved beads may, in fact, represent a group of hexagonal faceted long barrel beads depicted in a stylised form rather than representing the simple long barrel beads.

Figure 3. Bodhisattva possibly adorned with long barrel beads (h. ca. 64 cm; Lahore Museum; provenance unknown). Photographs by M.A. Rabbani.

Figure 4. Long barrel bead of carnelian from Barikot (BKG 2630: Macrophase 5a). Photograph by M. A. Rabbani.

Case Study 3: Short Biconical beads

Few short biconical beads of carnelian have been found in the excavations at Barikot so, too, has been the case at several other sites such as Sonkh and Ahichchhatra (Dikshit 1952; Härtel 1993). Similarly, only one rare Gandhāran Bodhisattva sculpture of Siddhārtha Gautama is known, to my knowledge, to be adorned with a short biconical bead (Fig. 5). It is likely that the carved bead represents a material of high-value possibly semi-precious carnelian. A short biconical carnelian bead (BKG 3378: Fig. 6a) has been found in the excavations of the Saka-Parthian levels at Barikot (Macrophase 3b) while the later Kushano-Sasanian cultural deposits (Macrophase 5b) have also revealed a short biconical bead of carnelian (BKG 1178: Fig. 6b). No short biconical carnelian bead has been found yet in the excavations of the Kushana levels at Barikot (Macrophase 4a-b and 5a). Given the evidence, however, short biconical carnelian beads must have been in circulation in the region during the intervening Kushana periods as well and, although no comparable samples have been found thus far in the corresponding material record of the urban site, it is clear that the Gandhāran artist did not carve an imaginative form but faithfully reproduced a real, short biconical bead.

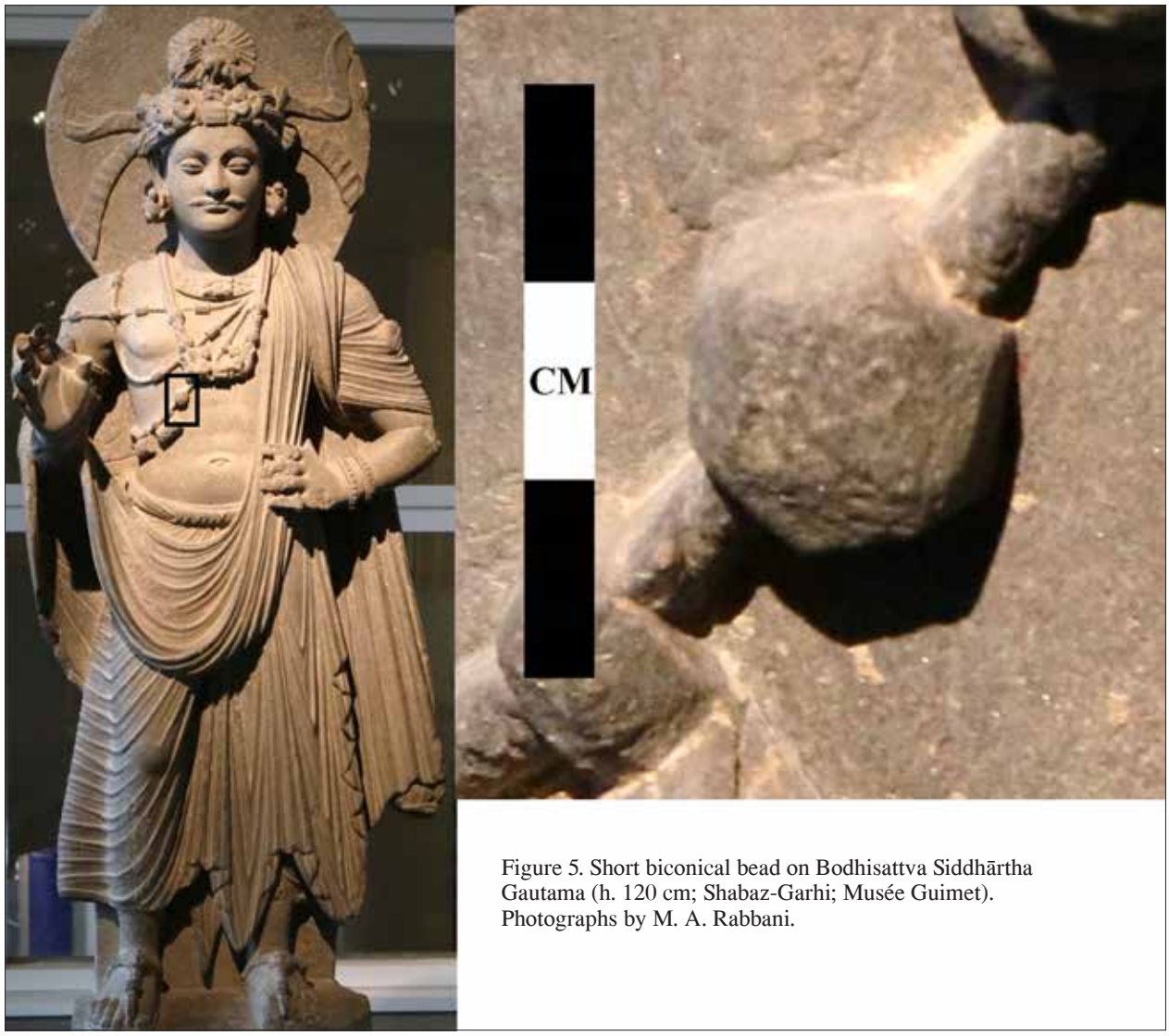

Figure 5. Short biconical bead on Bodhisattva Siddhārtha Gautama (h. 120 cm; Shabaz-Garhi; Musée Guimet). Photographs by M. A. Rabbani.

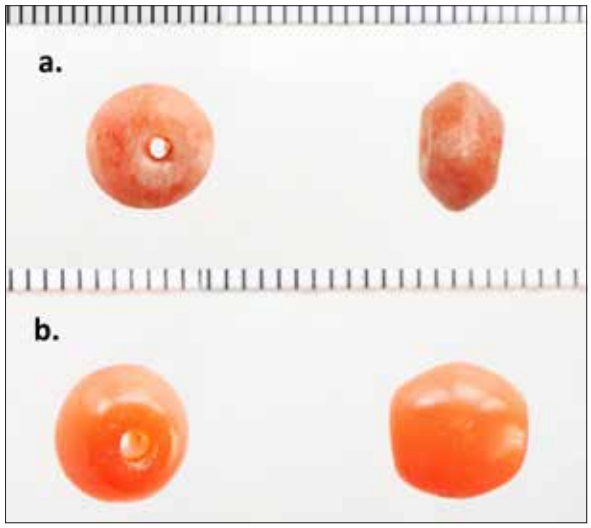

Figure 6. a) Short biconical bead of red carnelian from Barikot (BKG 3378: Macrophase 3b) b) Short biconical bead of orange carnelian from Barikot (BKG 1178: Macrophase 5b). Photographs by M. A. Rabbani.

Case Study 4: Hexagonal faceted Cylindrical/Barrel and Flower shaped 'beads'

A hexagonal faceted cylindrical or barrel bead can be seen as part of a headdress positioned in the centre on the forehead of a half-life size Bodhisattva image possibly framed by two other beads imitating the shape of flowers (Fig. 7a-b). The style and technique applied to produce the facets is reminiscent of rock crystal, although other stone varieties such as carnelian or amethyst that come archaeologically in a great range of shapes may equally represent potential matches. As already pointed out, faceted beads represent a characteristic feature of the ornamental traditions of the people of the Kushana periods of Gandhāra and other parts of the subcontinent (Beck 1941; Sinha and Roy 1969). The examination of the recovered beads from the various sites indicates that the number of facets and styles greatly varied from bead to bead, which consequently does not represent a limiting factor when attempting to correlate archaeological beads with the forms of beads carved on the Gandhāran imagery. There is no doubt that the highly skilled Gandhāran craftspeople were able to produce any type of bead with any number of facet combinations as the surviving archaeological evidence indicates. The excavations at Barikot have, as such, revealed an octagonal faceted long barrel bead of rock crystal (BKG 4359: Fig. 7c), which visually forms the closest typological match with the bead cut in stone of the Bodhisattva. The visible drilled holes of the rock crystal bead may appear, based on Fig. 7c, to be bent at the centre, in which case it would imply that BKG 4359 was used as a pendant in the past. When we examine the broken profile section of the bead, however, we find no evidence of bent drilled holes at the centre (see Rabbani 2022: 311).

With regard to the two flanking flowers, they seem to be perforated from their side sections rather than through their cross-section. Interestingly, several potential parallels have been discovered in the archaeological bead assemblages dated to the Kushana and Kushano-Sasanian periods of Barikot (Rabbani 2022). They usually have multiple perforations (spacer beads) and are made from marine shell (BKG 4352: Fig. 8a). The Kushana period of Barikot has also revealed gadrooned short barrel beads made from lapis lazuli (BKG 4333: Fig. 8b), which are reminiscent of the flower shape. Numerous small gold flowers have been found from Gandhāran reliquaries as well that were probably meant to be strung and worn (Brown 2006: 190). The use of flowers is, in fact, well-documented in the ancient history of South Asia where we see them, for example, commonly depicted on the headdresses of Indus figurines but also on the 'Baroque lady' terracotta figurines of the later periods.

It is somewhat challenging to identify with complete certainty the precise type of flower that was referenced in the illustrated examples. The sculpted flowers in the bodhisattva's headdress (Fig. 7b) appear to match the five-petalled rosette (rather than the lotus that is usually represented with more elongated petals), which quite commonly appears in the decorative repertoire of Gandhāran sculptures (Faccenna and Filigenzi 2007: 110-111). Based on the shape of the petals, the two archaeological samples from Barikot (Fig. 8a-b) also match with the form of the rosette but the sheer number of petals produced for the lapis lazuli specimen (Fig. 8b) suggest for a potential association with the lotus. References to lotus

flowers can also be found extensively in the art of Gandhāra and Mahāyāna Buddhist scriptures. If the intention of the Gandhāran artist was to reference lotus flowers here (although unlikely), then they may have been imbued with symbolic values of purity, fragrance, victory, immortality, and transcendent dominion (Rhi 2003; Schmidt 2012: 670). Flowers may, alternatively, symbolise the law or *Dharma* (teachings of the Buddha) due to their resemblance to a wheel (Fabrègues 1991: 318). It is, on the other hand, possible that the flowers that we see depicted in the iconography may simply represent real flowers or some other larger ornament (made of metal such as gold or silver) rather than actual small beads.

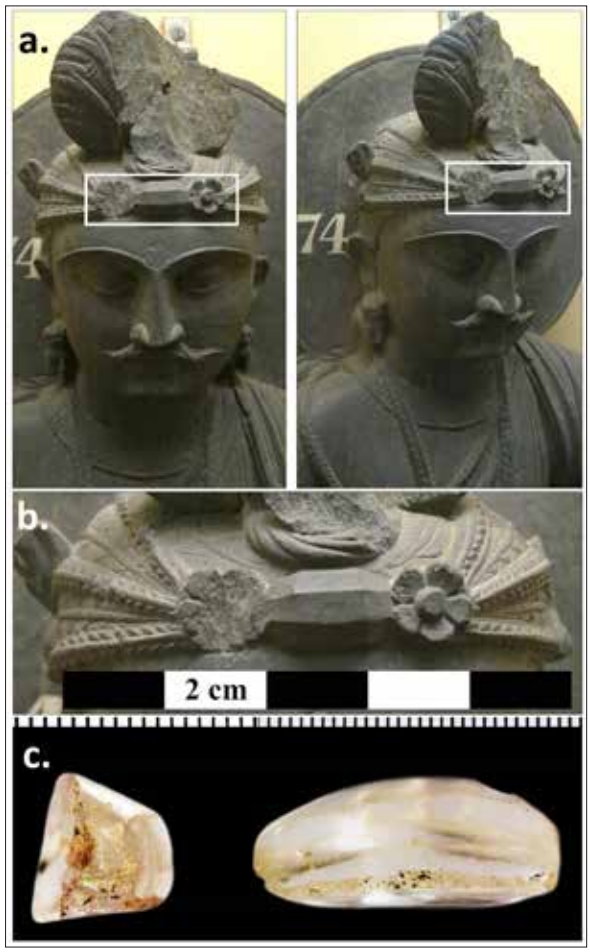

Figure 7. a-b) Carved hexagonal faceted cylindrical or barrel bead on Bodhisattva flanked by two potential flower shaped beads (h. 69.9 cm; provenance unknown; Lahore Museum) c) Octagonal faceted barrel bead of rock crystal from Barikot (BKG 4359: Macrophase 4b). Photographs by M. A. Rabbani.

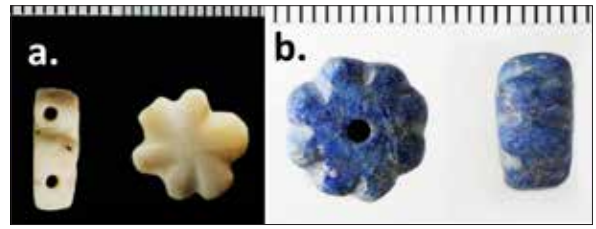

Figure 8. a) Flower shaped two hole spacer bead of marine shell from Barikot (BKG 4352: Macrophase 5a) b) Gadrooned short barrel bead of lapis lazuli from Barikot (BKG 4333: Macrophase 4b). Photographs by M. A. Rabbani.

Case Study 5: Short Spherical and Barrel beads

The next sculpture represents the Buddhist goddess of Hariti, which is adorned with a long necklace around her neck made of three strands of extremely small beads probably representing pearl beads as indicated by their shape, small size, and large quantity (Fig. 9a-b). Several long and short barrel beads of pearl have, in fact, been found in the excavations of the Kushana period contexts of Barikot (Macrophase 4b: 2nd century CE) probably representing materials that were imported through long-distance trading activities (Rabbani 2022: 199). The nearest sources of supply would have been the Persian Gulf nearly 2000 km to the southwest (Carter 2012: 10-21) or, alternatively, the beds of the Gulf of Mannar located between South India and Sri Lanka nearly 3000 km to the south (Carter 2012: 10 -21; Neelis 2001: 508; Ray 1994: 14).

The archaeological beads from Barikot are typologically similar to the iconographic depictions (see Rabbani 2022 for details) – the latter are found abundantly engraved on both male and female figures in Gandhāran art. The pearl has been interpreted, based upon its luminosity and brilliance, to symbolise the Buddha and the Doctrine. As a symbol of purity, it may represent the truthfulness of the Buddha and the veracity of the Law (Eitel 1888; Fabrègues 1991: 316; Saunders 1960). It should be stressed at this point, however, that textual studies dealing with the interpretation of symbols and motifs must be treated with caution as they should ideally derive from the same geographic area and time period

as the iconography under study. We note, in addition, that the proposed pearl beads meet three larger beads at the centre of the necklace, which are spherical in shape (Fig. 9b). It is likely that the artist was referencing three spherical beads made from semi-precious stone materials. Short spherical carnelian beads, for example, are well-documented from the Kushana periods of Barikot (BKG 1296: Fig. 9c).

Case Study 6: Drop shaped pendant

Established during the Kushana period, the excavations at the Gandhāran Buddhist site of Tapa Sardār have revealed a large stupa surrounded by several minor stupas and vihāras. Numerous sculptures of the Buddha, the Bodhisattvas and other figures were found during the excavations, forming the great majority of the finds. Rather than made from schist stone, they consist of

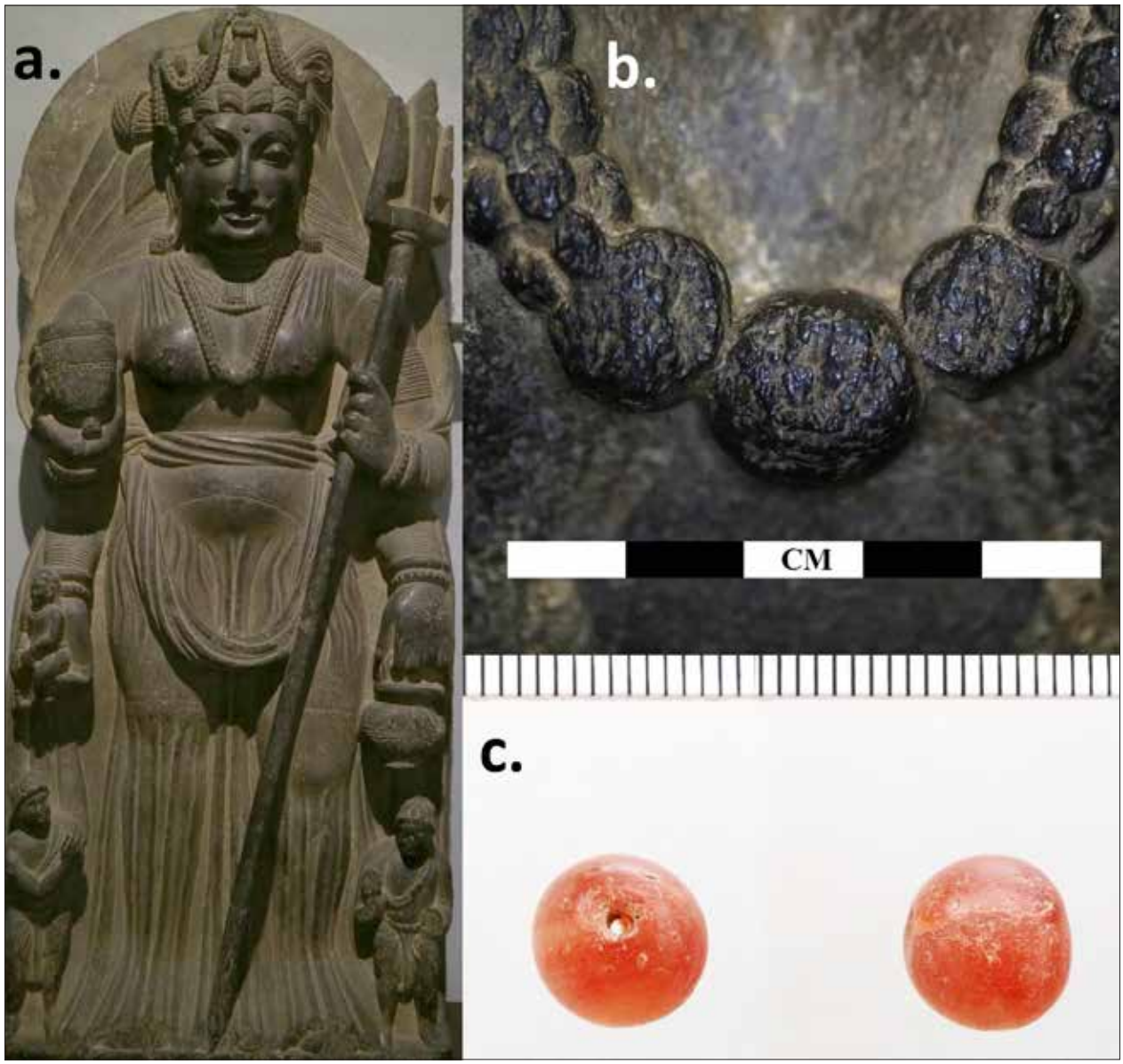

Figure 9. a-b) Hariti with a necklace consisting of short spherical and small barrel shaped beads (h. 122 cm; Shari-Bahlol; Peshawar Museum) c) Short spherical bead of red carnelian from Barikot (BKG 1296: Macrophase 4b). Photographs by M. A. Rabbani.

unbaked clay mixed with straw on the inside, while the outside layer, is of red clay - a material which was very suitable for modelling, hard-wearing, and gave a good consistency (Taddei 1968; Taddei and Verardi 1978). A precise dating for these buildings, monuments, and sculptures can currently not be proposed (Taddei 1968; Taddei and Verardi 1978). As far as the Late Period of Tapa Sardār is concerned (to which the sculpture illustrated in Fig. 10a belongs), however, it should not be dated earlier than the 7th century CE based upon both the archaeological stratigraphy and stylistic comparisons with the coeval production of sculptures (the excavations at the Buddhist monastic site of Fondukistan have, in fact, revealed a coin deposit that provides a very important chronological reference point; Göbl 1967: 313-314).

From vihāra 17, a unique sculpture was found (Fig. 10a) placed in front of a figure of the Buddha (TS. 900: Fig. 133). It shows a male torso with strongly emphasised musculature, wearing a necklace with a suspended drop shaped pendant (Taddei and Verardi 1978: 85, 101-102). Interestingly, three drop shaped pendants of banded agate have been found from Bhir Mound and the Dharmarajika stupa in Taxila while one agate pendant was recovered from the site of Rang Mahal as well (Beck 1941: Pl. III no. 12-13, 36; Rydh 1959: Pl. 82 no. 17; Uesugi and Rienjang 2018). The chronological uncertainties associated with the excavations at Taxila, Rang Mahal, and other sites, however, cannot provide a reliable date for the production and use of the archaeological pendants. On the other hand, the excavations at Barikot have revealed two unique drop shaped pendants of banded carnelian (BKG 1158: Fig. 10b) and marine shell (BKG 4196: Fig. 10c). The former is securely dated to the Kushano-Sasanian phase (Macrophase 6) while the latter is dated to the post-urban period of Barikot (Macrophase 7-8). This important discovery not only proves that the sculpted pendant from Tapa Sardār is based upon a real prototype but also indicates that later period artists continued to uphold the tradition of referencing actual forms of beads as late as the 7th or 8th century CE.

Conclusion

The data and interpretations produced in this contribution have provided growing evidence for the accurateness of iconographic depictions of ornaments as we see them in the art of Gandhāra. The images of both male and female groups are heavily adorned and make frequent references to a range of beads and pendants that appear to be based on real prototypes, probably reflecting the contemporary material culture of the time. Several questions remain, however, that need to be further explored and addressed in future studies including when it comes to the measurements of the size of some of the artistic ornaments. Are the bead sizes on the images realistic and to scale? The flower shaped beads, for example, are much smaller in size compared to their proposed iconographic parallels. As such, do the sculpted flowers represent actual beads or just some other larger ornament? Or are sculpted flower 'beads' so important that the Gandhāran artist enlarged them so significantly, so they could be seen and understood by viewers?

In addition, although uncertainties persist in the precise identification of the raw materials of the ornaments that are referenced in the iconography, we are looking at materials that were probably imbued with socio-economic value (in terms of rank, status display, and acquisition/cost value) as well as symbolic-ideological value (in terms of spiritual, cultic, or religious value) (see Rabbani 2022 for details). Carnelian, for example, is a semi-precious stone and would have been imported, through long-distance engagements, from several sources including the region of Gujarat to the south-east and possibly even the region of Sistān in Iran to the south-west (Law 2011; Rabbani 2022; Tosi 1969: 374). The use of gold, carnelian, lapis lazuli, rock crystal, cowrie shells, and other materials of value is, anyhow, well-documented from the study of the archaeological evidence from the Kushana periods of Barikot and the wider region (Rabbani 2020b, 2022).

Since at least some of the Gandhāran art sculptures were originally gilded, it may be useful to carry out a systematic pigment residue analysis of specific stone parts that we see carved into the

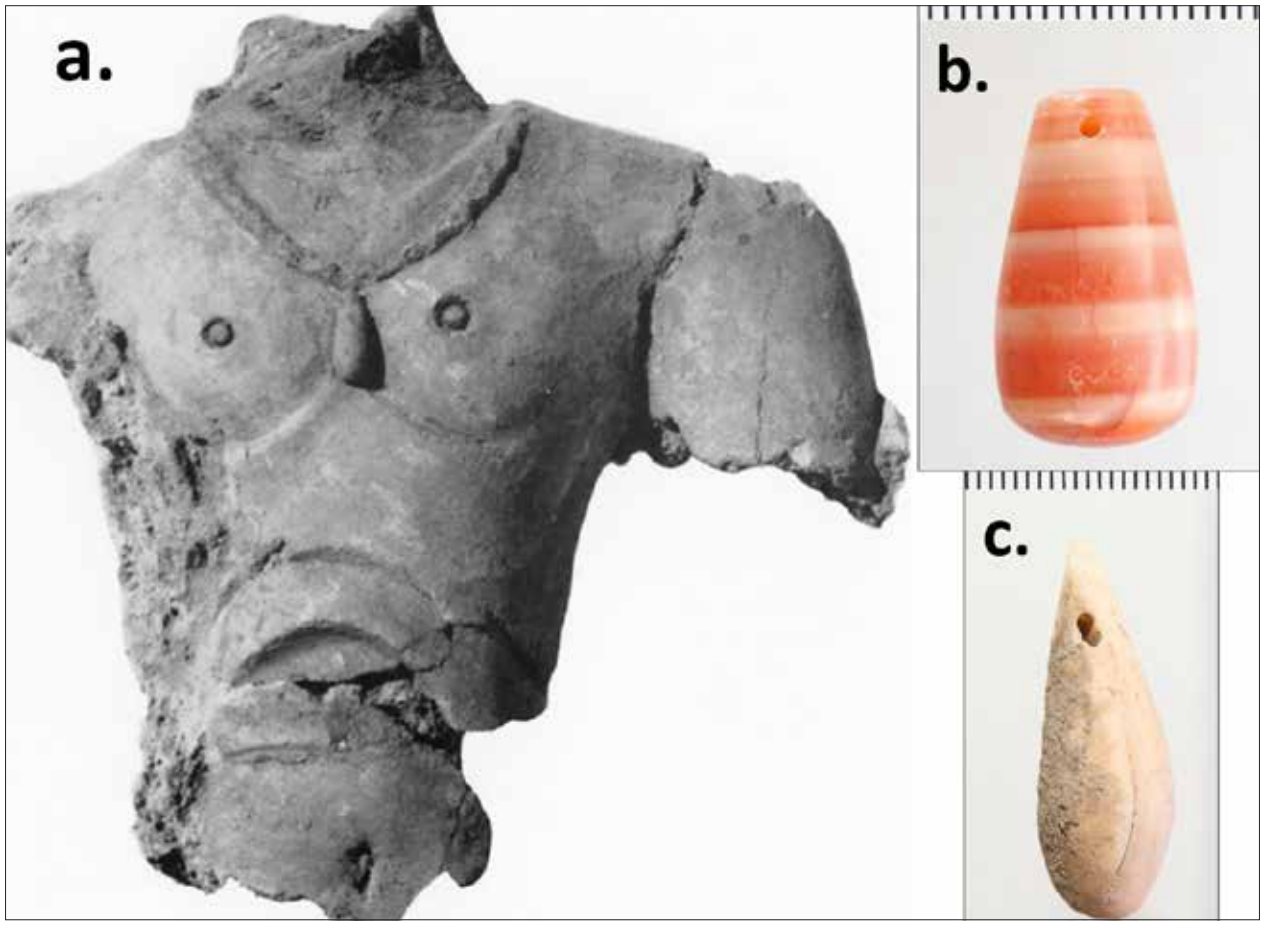

Figure 10. a) Male torso wearing a necklace with a drop shaped pendant (h. 30 cm; Tapa Sardār; Taddei and Verardi 1978: Fig. 133 TS 900) (Courtesy ISMEO). b) Drop shaped pendant of banded carnelian from Barikot (BKG 1158: Macrophase 6) c) Drop shaped pendant of marine shell (BKG 4196: Macrophase 7-8). Photographs by M. A. Rabbani.

form of beads in order to try to determine the colour that was selected to reflect the intended raw material. The results could provide a better understanding not only on the identification of the raw materials that were favoured and possibly utilised in reality, but also shed additional light on the interpretation of the wide range of meanings imbued in different raw materials during the dynamic Kushana period of Gandhāra. There are also other aspects that require further research and attention including the consideration of taking into account the minor variations that exist within specific types of sculpted bead ornaments. Faceted beads, for example, are depicted abundantly in Gandhāran art and it is important to better define them to be able to distinguish between the different sub-types, which may potentially allow us to better link them typologically with their archaeological counterparts. The study of the frequencies and sequences of the arrangements of the carved ornaments on a cord or in a necklace has also got the potential to eventually reveal, at least from an artistic point of view, distinct patterns in relation to the prevailing adornment traditions and practises in Gandhāran society.

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