Beads and pendants from Inqitat (Dhofar, Sultanate of Oman)

Abstract: The assemblage of personal adornments made of various materials, excavated from the archaeological site of Inqitat (Al Hamr al-Sharqiya) in the Khor Rori area (Dhofar) in the 2016 and 2017 seasons, spans the entire period of occupation of the site from prehistoric times through the Islamic period. Its significance stems from the location of Inqitat near Sumhuram and its socio-political setting. The use of specific stones suggests links with the Gulf and the eastern Indian Ocean. Furthermore, the discovery of tools used for bead-making demonstrates the existence of a local craft in the case of at least some of the adornments. The long occupation of the site could help to identify typical materials for each period, contributing to a more comprehensive understanding of the Dhofar area and its international connections.

Keywords: Dhofar, Oman, personal adornments, pre-Islamic Arabia, Inqitat

The first year of excavation at the site of Inqitat (Al Hamr al-Sharqiya), carried out by the Italian Mission to Oman, yielded a bead assemblage that is the subject of this paper. The Inqitat site is located in Dhofar (southern Oman), close to the South Arabian city of Sumhuram (Albright 1982; Avanzini 2002; 2008) [*Fig. 1* inset]. It occupies a rocky hill, rising about 30 m asl. The

Silvia Lischi

Department of Civiltà e Forme del Sapere, University of Pisa

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top consists of two plateaus, northern and southern, about 600 m by 120 m in area, separated by a rift. Structures belonging to a Classical and later an early Islamic settlement have been mapped practically all over the northern plateau [*Fig. 1*].

During 2016 and 2017 the Italian Mission to Oman (University of Pisa), in collaboration with the Office of the Adviser of His Majesty the Sultan for Cultural Affairs (Oman), embarked on a program of excavation, material analysis and musealization of this complex site.

The jewellery presented here was collected in the first year of excavation, during which four field seasons were carried out. The importance of archaeological beads for site research is undeniable (van der Sleen 1973; Bednarik 2006). Beads can contribute to an understanding of commercial activities, technical capacity, social system and ethnocultural characteristics of the society to which they belong. Hence the need for a systematic study of this class of artifacts.

The 438 beads and pendants found during these seasons came from contexts

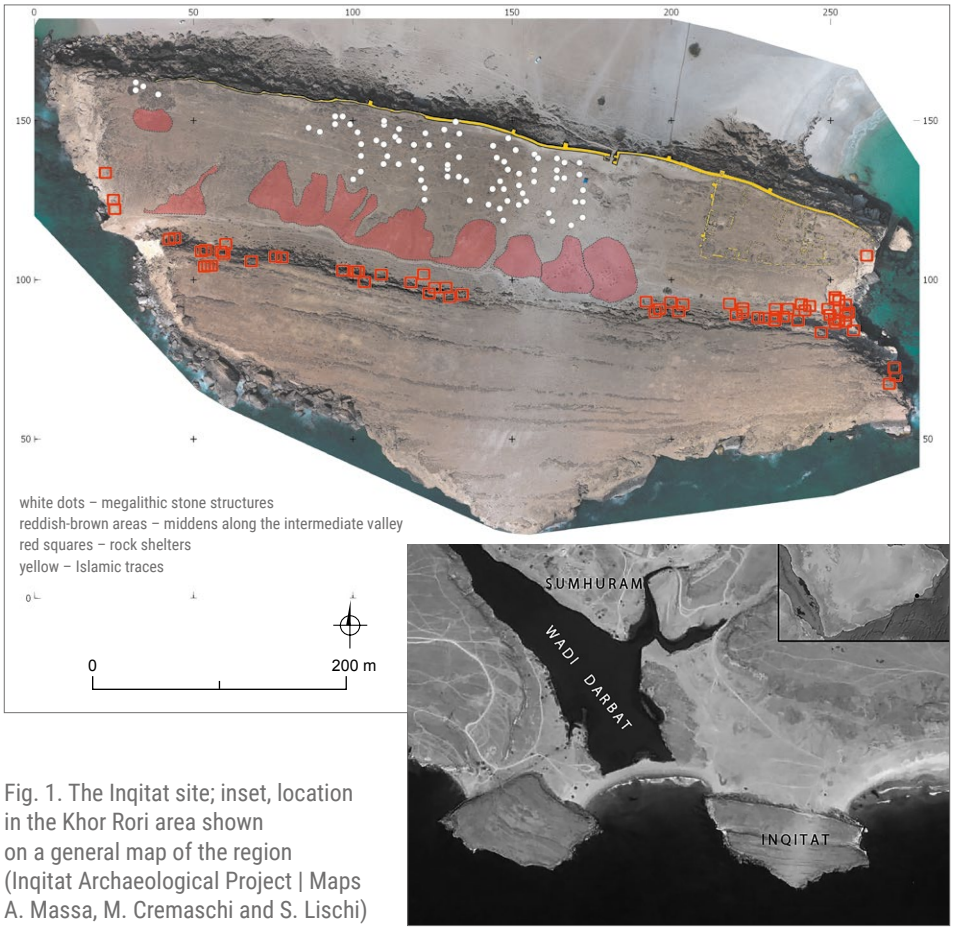


Fig. 1. The Inqitat site; inset, location in the Khor Rori area shown on a general map of the region (Inqitat Archaeological Project | Maps A. Massa, M. Cremaschi and S. Lischi)

dated from the Classical period to the early Islamic period. The collection of beads from the Classical-period settlement helps to characterize the habits, usage and contacts of the inhabitants. And while it is too early to provide a quantitative analysis of the bead assemblage, one can look for a connection between the settlements of Inqitat and Sumhuram which was inhabited by foreign colonists.

THE INQITAT SITE

The site of Inqitat was surveyed from 1996 to 1998 and again in 2006 (Cremaschi and Negrino 2002; Morandi Bonacossi 2002; Cremaschi and Perego 2008). Juris Zarins (2001: 150) also mentioned the site. Several architectural structures were observed [*Fig. 2*], including a fortified settlement of about one hectare in size (Rougeulle 2008). Archaeological investigations identified two phases of Islamic occupation apparently dated to the 10th and the 11th centuries CE, respectively (Rougeulle 2008: 654). Recent discoveries have confirmed a 10th–11th century early Islamic phase already mentioned by Axelle Rougeulle and revealed, rather unexpectedly, the presence of occupation in the Classical period (1st century BCE–1st century CE) .

The new discoveries consist of a huge indigenous settlement composed of about 70 megalithic stone structures, elliptical or sub-rectangular in shape, situated in the central part of the northern plateau [see *Fig. 1*]. None of the upper parts of these structures have been preserved, but the finds, examined in light of apparent similarities to traditional architecture in the area, suggest a wooden-beam frame covered by lightweight organic material and mud.

These structures, presumably dwelling huts, were destroyed by fire. Under the collapsed organic roof cover was an undisturbed stratigraphy. A preliminary analysis of the pottery assemblage implied the presence of Mediterranean imports, composed substantially of Campanian amphorae (Tomber 2017: 350). According to Roberta Tomber, who kindly identified these amphorae, their period of distribution was in the 1st century BCE–1st century CE. The presence of these vessels dates the context in which they were found to this period. These data, together with some other finds from the nearby South Arabian city of Sumhuram, suggest that the two centres, Inqitat and Sumhuram, were at least partly contemporary. However, the local-made ceramics at Inqitat, which are completely different from the pottery found at Sumhuram, the architectural building technique and a conspicuous use of lithic tools, which are practically absent from the South Arabian city, clearly differentiate the indigenous people of Inqitat from the South Arabian community settled at Sumhuram.

Excavation of the site also uncovered some structures of Islamic origin, probably connected with the settlement mentioned by Rougeulle.

Thus, the site appears to have had a long history of occupation, determined probably by its strategic location, with obvious and distinctly defensive features. Its indigenous character in the Classical

period makes it a site of fundamental importance for understanding the nature of the indigenous population of Dhofar and the relation between the native inhabitants and the Hadrami peoples that lived in Sumhuram.

MATERIALS, CLASSIFICATION AND TECHNIQUES

The bead assemblage found at the site was made of organic (marine shells), stone and manmade (vitreous) materials. The classification follows a bead typology prepared for the Sumhuram assemblage (Lischi 2018: 66–71). The typology is based primarily on shape, without neglecting the specifics of the materials, and is composed of 16 types, with subtypes in some cases [*Table 1*]. It is an open classification, allowing for new types or subtypes to be added. However, no such action needed to be undertaken in the case of the Inqitat assemblage because the beads fitted perfectly the existing types.

Three distinct groups have been distinguished based on the material: organic, stone, and manmade. The first, which represents about 90% of the beads found, is the most numerous. Then follow the

Table 1. The Sumhuram general bead typology in outline (After Lischi 2018)

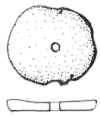
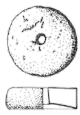
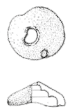
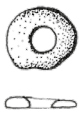
Shape	Type	Specific dimensions	Model drawing
Disk beads	A A.1	Dia. > 2.3 cm; Th. 0.1–0.4 cm Dia. < 2.3 cm; Th. 0.1–0.4 cm	
Cylindrical disk beads	B	Dia. 0.2–4.0 cm; Th. > 0.2 cm	
Biconical beads	C/C.1	Dia. 0.8–2.0 cm	
Barrel-shaped beads	D	Dia. 0.6–1.5 cm	
Truncated cone beads	E	Dia. 0.8–3.0 cm	
Ring beads	F	Dia. 0.8–2.0 cm Dia. hole 0.4–0.7 cm	

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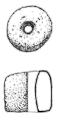
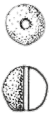
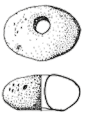
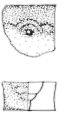
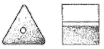
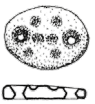
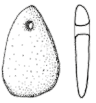
Table 1 continued

Cylindrical beads	G	Dia. ≤ H.	
Shell-shaped beads	H	–	
Spherical beads	I	Dia. 0.7–2.3 cm	
Oblate beads	L	Dia. 0.3–1.7 cm	
Pear shaped beads	M	–	
Ellipsoidal beads	N	Dia. 0.5–1.3 cm	
Pebble beads	O	–	
Cuboid shaped beads	P	–	
Triangular prism-shaped beads	Q	–	
Beads with multiple holes	R	–	
Pendants	S	–	

stone and manmade groups, with a 6.6% and 3.4% percentage share, respectively, of the assemblage. The beads were examined macroscopically and under magnification, using a 12x lens.

ORGANIC MATERIALS

The size of this group, about 90% of the total number of beads discovered at Inqitat, is hardly surprising given the proximity of the site to the sea and the natural characteristics of the shells (Lischi 2018: 71). All the shells in this assemblage are of marine origin and are typical of the Indian Ocean.

Most of the shell beads are made from shells of the *Conidae* and *Olividae* species; *Dentalium* and gastropod shells are also well represented [*Fig. 3*]. The perforations in the shells were made by intentional drilling, but in some cases, the drilling is mechanical or the result of carnivorous gastropods feeding on other mollusks (Borrello 2005: 20; Lischi 2018: 72).

In the case of *Olividae* shells, it is the apex that is usually drilled, and sometimes they have smaller or larger and more or less well-shaped lateral holes [*Fig. 2*]. *Conidae* shells can also be pierced either on the apex or on the side [*Fig. 4:1*], but often the body and the apical part are separated. The apical part is in turn pierced at the apex thus obtaining the truncated-cone beads of type E [*Fig. 4:3*]. The discovery of numerous fragments of *Conidae* shells missing the apical part, in contexts attributable to the settlement of the Classical period, suggests that production took place on site. The discovery, in an area that was apparently open, of five stones with traces of use that appear to be related to bead processing, supports this idea [*Fig. 3*].

The *Cypraeidae* are represented by relatively few specimens (3% of the total of shell beads). The hole can be made by drills or by cutting off the upper part producing holes of variable dimensions [*Fig. 4:2*].

Dentalium is evidently present (with 27 pieces, 6.85% of the total number of shell beads), which are, however, virtually completely absent from Sumhuram. They are used whole or cut into cylinders of about 0.5 cm in length [*Fig. 4:8*].

Fig. 2. Methods of drilling *Oliva bulbosa* shells (Sumhuran Project | photo S. Lischi)

Fig. 3. Stones exhibiting traces of shell-working (Sumhuran Project | photo S. Lischi)

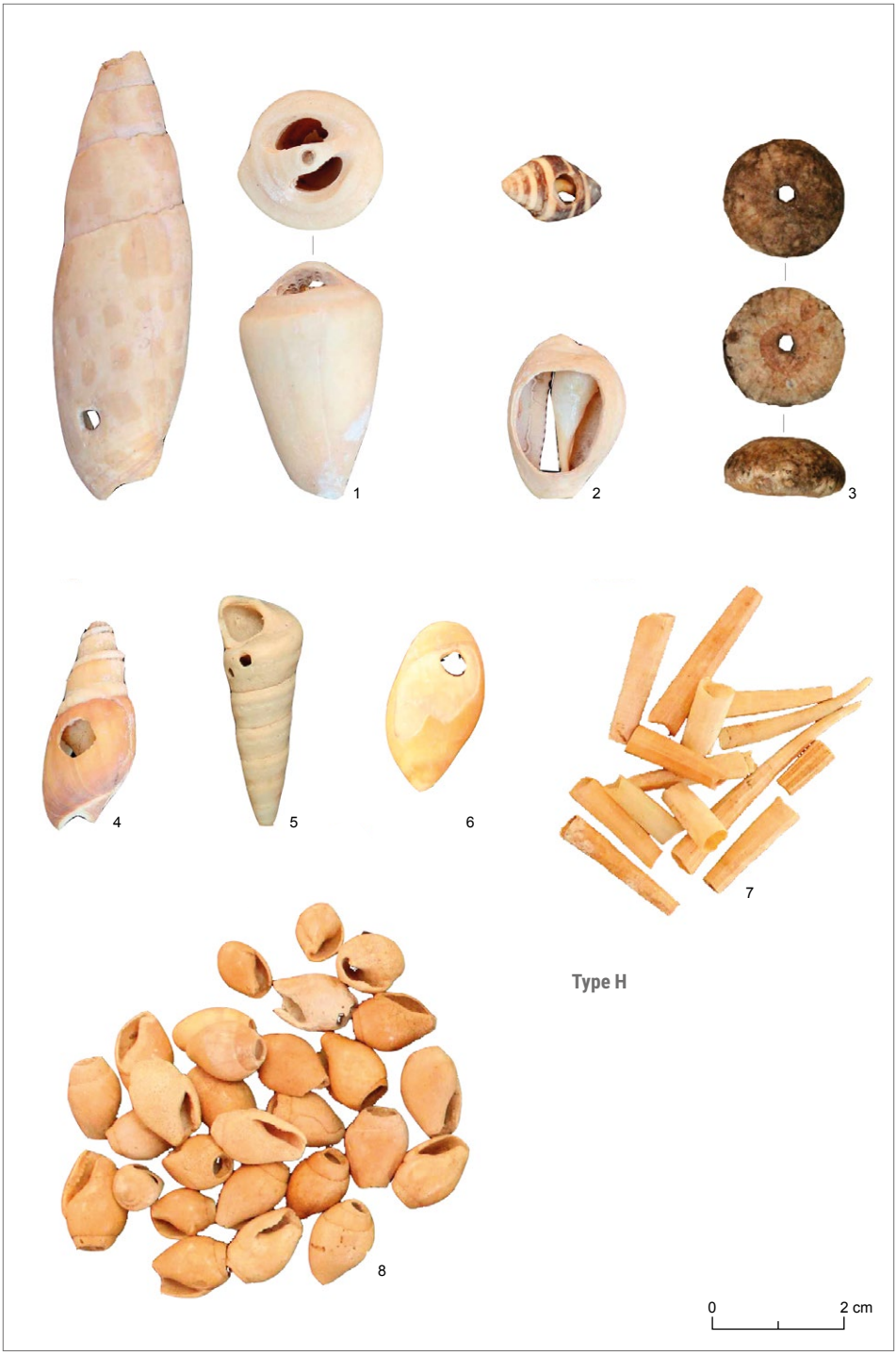


Fig. 4. Shell beads of the shell-shaped category, Type H (Sumhuran Project | photos S. Lischi)

Examples of nacreous shell beads are few; they are drilled to be used as pendants [*Fig. 5:4,5*]. The lack of nacreous shell disk beads (type A), extremely common in Sumhuram, is interesting.

Examples of beads and pendants produced with gastropod shells are high in number (40% of the total shell bead count). This type of shell is used for pendants and as beads with drilling generally placed near the natural opening of the mollusk. Among the gastropods the presence of two *Engina mendicaria* [*Fig. 4:3*] one of the shells most used in antiquity for this purpose, merits note (Beck 1944: 100; Jackson 1944: 104; Barthélemy de Saizieu 1990: 39; Morrison 1991: 381; Uerpmann 1992: 100; Then-Obłuska 2015: 736; Lischi 2018: 71).

All the beads produced by shell-piercing but keeping the original shape are classified in type H regardless of species (312), while pendants form type S (17).

There is also a bivalve with drilling, perhaps used as a pendant, and three cylindrical disk beads (type B) [*Fig. 5:1*] and some cylindrical beads (type G), of which the original shell type cannot be determined.

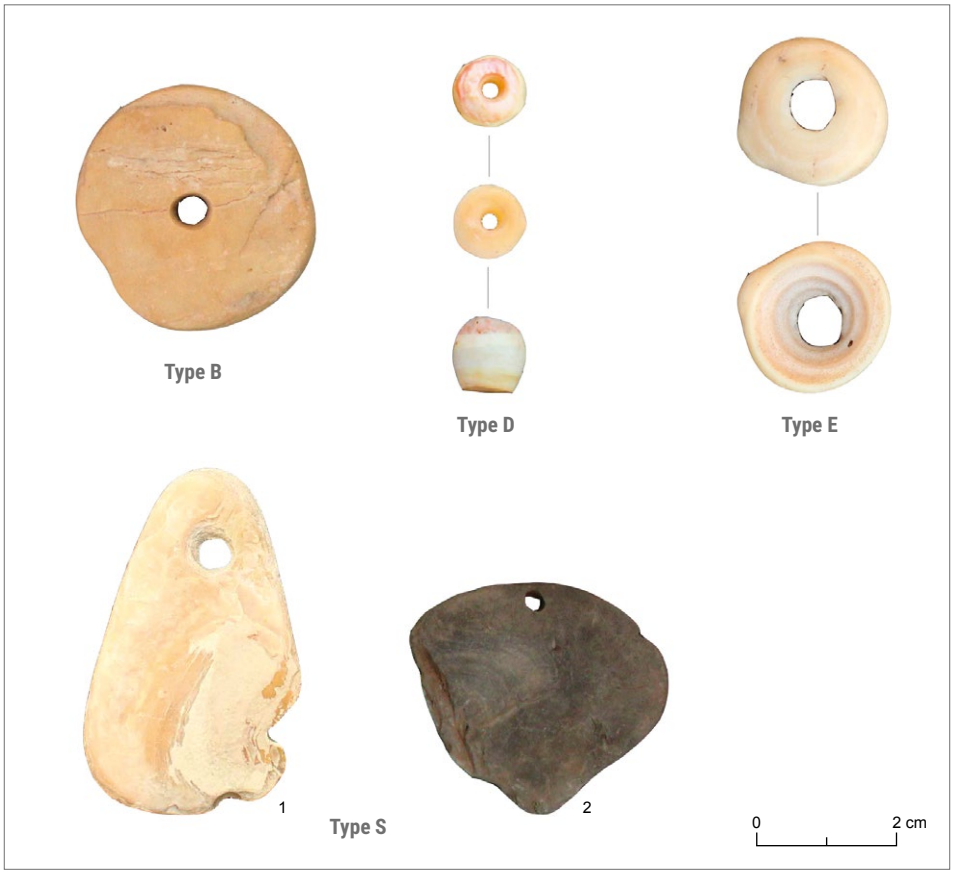


Fig. 5. Shell beads of other types: Type B – cylindrical disk bead; Type D – barrel-shaped bead; Type E – truncated cone bead; Type S – pendants (Inqitat Archaeological Project | photos S. Lischi)

STONE

Approximately 6.6% of the total count of beads found at Inqitat are included in this group. Of these, the largest number, 21 pieces, is made of semiprecious stones and of this number 17 represent carnelian and agate [*Fig. 6:2–7*]. There are also three serpentinite beads, one of quartz and some carbonate stones, normally pebbles, probably found on the beach or the wadi floor and reworked to produce pendants.

It is also evident that the corpus of Inqitat beads is made up of small and middle-sized artifacts. The types most represented within this group are D (barrel-shaped bead) and I (spherical bead) with four beads per type. Other types are represented by one or two pieces each.

Carnelian and agate are both very common materials used in Classical-period jewelry from southern Arabia (Caton-Thompson 1944: 97; Van Beek

Fig. 6. Stone beads: Type B – cylindrical disk beads; Type C – biconical beads; Type D – barrel-shaped beads; Type I – spherical beads; Type R – spacer bead with multiple holes; Type S – pendants (Inqitat Archaeological Project / photos S. Lischi)

1969; Gwinnett and Gorelick 1991: 189; Morrison 1991: 387–388; Barker 2001: 208–209; Antonini, Arbach, and Sedov 2002: 44–45; Jasim and Yousif 2014: 74; Lischi 2018: 76–78), India (Francis 1991: 36; Kelly 2016: 36; Kelly and Cherian forthcoming) and Egypt (Then-Obłuska 2015: 745). In Oman, circulation of these materials increases significantly during the Bronze Age (Brunet 2009). Bead products made of these stones are present at many sites in southern Arabia, such as Hajar Bin Humeid (Van Beek 1969), Hureidha (Caton-Thompson 1944: 97), Shabwa (Morrison 1991: 387–388), Hajar al-Rayhani (Gwinnett and Gorelick 1991: 189), Hajar an-Nab (Antonini, Arbach, and Sedov 2002: 44–45) and Sumhuram (Lischi 2018: 76).

It is still difficult for now to establish supply centers for the stones appearing in the Dhofar area. Deposits of semiprecious stones of this kind are known from Yemen, the United Arab Emirates, Ra's al-Khaimah, Iran, India, northern Sudan and Nubia (Then-Obłuska 2015: 745; Lischi 2018: 77). It is essential, therefore, to analyze in greater depth the cultural and commercial relations between Inqitat and these areas to better understand where the raw materials or finished products could have been imported from. Production and drilling techniques can, at least to a certain extent, shed light on feasible sources of some types of beads. It is in fact recognized that by about 600 BCE hard-stone beads from the Indian subcontinent are characterized by two well defined and specific drilling systems: constricted cylindrical stone drill and constricted cylindrical double diamond drill (Kenoyer and Vidale 1992: 514). It seems that the former made the invention of the latter possible, certainly a more complex and elaborate technique (Kenoyer, Vidale, and Bhan 1991). Thanks to this type of drilling, so characteristic, which leaves traces that are clearly visible on SEM images of the surface of drill-hole silicon impressions, it is possible to determine the origin of the finished beads (Kenoyer and Vidale 1992; Kenoyer 2003). The drilling technique of the semiprecious stone beads from the Inqitat excavation is currently under study (Kenoyer, Law, Dussubieux, Lischi in progress).

A quartz bead of more complex shape [*Fig. 7:2*], that is, a multifaceted biconical form (Type C.1), comes from an apparently Islamic context and finds parallels both in southern Arabia (Gwinnett and Gorelick 1991: 189; Morrison 1991: 387) and in India (Francis 1991: 36). A fragmentary bead with similar characteristics has also been found in nearby Sumhuram (Lischi 2018: 69, Fig. 3:11), the difference between the two being that the Sumhuram bead has regular facets, whereas the Inqitat bead has alternating facets, giving it a more refined appearance. The very smooth surface and edges of the Inqitat bead may suggest long and intense use. Due to the qualities of transparency and clarity, artifacts made of quartz have on occasion assumed symbolic value (Then-Obłuska 2013: 683).

Of great importance is a group of three beads found in contexts attributable to the Classical period. These beads were made from a light green stone, probably serpentinite, which is unusual for the area [*Figs 6:4; 7:3,4*]. In fact, there are no comparable artifacts in the assemblage from Sumhuram. Two of these beads are

medium/large in size and barrel-like in shape (type D), the third is a cylindrical disk (type B). Traces associated with the production of the bead have been noted in the case of the two Type D beads: multidirectional striations in the bigger one [*Fig. 7:4*] and parallel, unidirectional striations in the smaller one [*Fig. 7:3*].

MANMADE MATERIALS

Vitreous materials account for 14 of the beads found at Inqitat [*Fig. 8*]. Since they are complete on the whole and it is sometimes difficult in some to be sure whether the material is glass, frit or faience, the rule was to identify them as vitreous paste. This is in line with the principles adopted in the study of the Sumhuram beads (Lischi and Pavan 2012: 177; Lischi 2018: 76) and other archaeological contexts (Pinnock 1993: 13). Four of these beads, 26.7% of the total of vitreous pieces, fall into the 'Indo-Pacific' beads category [*Fig. 8:3,4*]. Three of these are turquoise and one is yellow, in line with the Sumhuram assemblage (Lischi 2018: 76), and all belong to types with flattened ends (B – cylindrical disk bead, G – cylindrical bead, and L – oblate bead). This is due to the production method which called for monochromatic glass to be modelled around a rod to form a tube, subsequently cut into short sections to obtain the beads (Francis 1990: 11; Lischi 2018: 76).

These beads have all been found on the surface or in surface layers associated with structures ascribed to the Classical period. Chronological considerations are thus impossible for lack of reliable stratigraphic contexts. However, 56 such beads found in nearby Sumhuram were attrib-

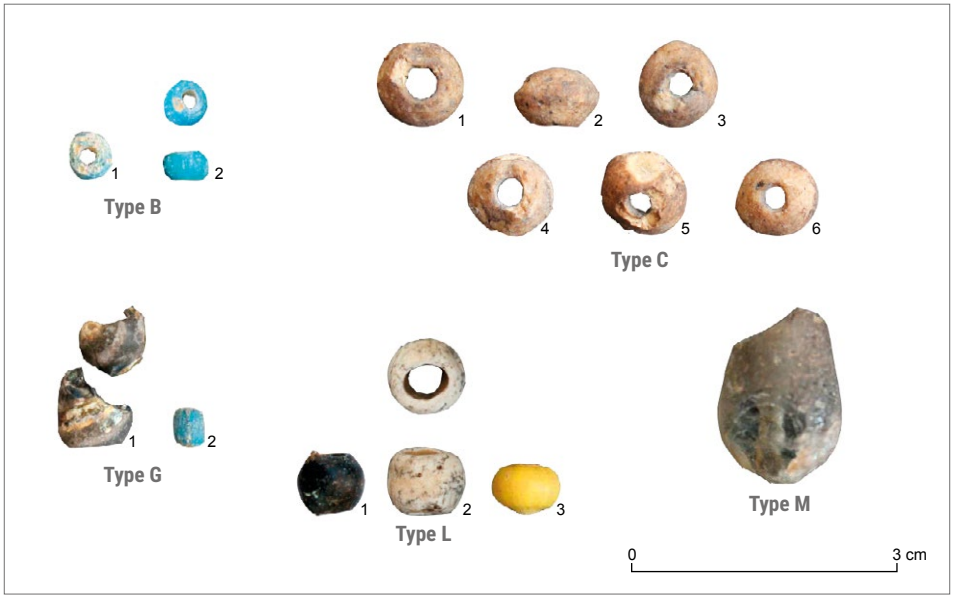


Fig. 7. Beads of vitreous materials: Type B – cylindrical disk beads; Type C – biconical beads; Type G – cylindrical beads; Type L – oblate beads; Type M – pear-shaped bead (Inqitat Archaeological Project / photos S. Lischi)

uted to the third phase of the construction of the city, that is, the 1st–2nd centuries CE (Lischi 2018: 80). The absence of any kind of production waste suggests that the beads were brought, likewise to Sumhuram (Lischi 2018: 76), from India or southeastern Asian centres (Francis 1987; 1991: 224; Lankton and Dussubieux 2006: 139; Carter 2016: 17).

Another four glass beads, two of which are poorly preserved and fragmentary and were found inside a hearth, deserve attention. Two belong to type L and are black and white [*Fig. 8:2,5*], while those in the worst condition have more complex shapes and belong to types G and M [*Fig. 8:6*]. The cylindrical bead (Type G) is characterized by a yellow trail decoration that runs obliquely along the outer body [*Fig. 8:6* left]. The pear-shaped one has a badly preserved surface, but its transparency and lack of any decoration are evident from the break [*Fig. 8:6* right].

A group of six vitreous beads [*Fig. 8:1*] is particularly interesting because they were all found in the same context, a fireplace, where the two beads previously described were also found. These six beads are complete and all belong to type C. The material observed in some breaks in the body of these beads is very different from that of the previously described beads—it could be frit. The context of the discovery suggests that they may have been subjected to post-production overheating, which may have compromised the initial characteristics of the vitreous material. Without additional laboratory analyses the attribution cannot be certain.

DISCUSSION AND CONCLUSIONS

This study of the Inqitat jewelry is to be considered as preliminary. Only the first season of excavation is represented and the finds come from extremely different contexts: a Classical-period housing complex with presumed production areas, a refuse dump from this period, a large building controlling access to the wadi, also attributable to the Classical period, and an area perhaps militarized or otherwise intended to control access to the promontory of the Islamic era. What is conspicuous is the presence of beads in contexts attributable to the Classical period and not in Islamic ones where very few specimens were found (notably the faceted biconical bead; see *Fig. 7:2*). This is a necessary but non-discriminatory annotation because the areas investigated have very different functions and dimensions; therefore, it may be only a matter of chance and does not necessarily reflect on a functional interpretation of the area.

Some of the most interesting beads, the 'Indo-Pacific' beads [*Fig. 8:3,4*], come from the surface. Notwithstanding, one should be conscious of the fact that in arid areas winds have a tendency to remove fine sediment, leaving a high concentration of stones and artifacts on the surface. This entails the loss of thickness of the surface layers and a substantial flattening of the stratigraphy, which brings together materials that can come from very different chronological contexts. For this reason, the 'Indo-pacific' beads do not have true chronological indications of the area in which they were

found. However, their connection with the nearby city of Sumhuram, where this type of beads has been found in considerable quantities, testifying to contacts with India, is certain.

Contacts with India are also corroborated by the number of fragments of Indian pottery, currently under study, found in all levels of occupation of the site. In light of this information it can be assumed that beads made of semiprecious stones like carnelian, agate and quartz [*Figs 6, 7*] also came from India, either as the raw material itself or as finished products. That no waste products have yet been found means that they were presumably not produced on site. Moreover, the bead made of quartz [*Fig. 8:2*] appears to have had the hole drilled with a double diamond drill, again pointing to India as a possible place of production before the ready product was sent to the coasts of southern Arabia.

The three serpentine beads are also of interest [*Fig. 7:3,4*]. Neither is this particular kind of stone found in nearby Sumhuram nor is the shape of these beads like any usually found in the area. The stone is not found in the region, hence its exogenous provenance is obvious. It could have been the north of the Gulf of Oman where deposits of serpentine have been recorded and beads are known to have been produced from this material (Uerpmann and Uerpmann 2003; Cavulli 2004; Magnani et al. 2007; Pisan, Biagi, and Gasparotto 2013).

Shell bead production at the site seems a certainty, not only because of how simple it was to collect shells for this purpose given the site's proximity to the sea, but also because waste products from Conus shell processing have been discovered. Moreover, the number of finished shell products is extensive and there are also tools for bead production [see *Fig. 3*]. Therefore, the site must have functioned as a center of shell bead-making. At Sumhuram, local production of shell beads has been hypothesized, but without confirmation in the form of waste products and the necessary tools. The site of Inqitat being so close and evidently making jewelry items of this kind suggests that production took place there and the finished products were traded to Sumhuram.

Even this preliminary look at the beads from Inqitat reveals the site's importance as a local center influencing the development of the region. A provenance study of the beads places the site within a regional and supraregional trade network and given the contemporaneity of this settlement with that of nearby Sumhuram in the period of the 1st century BCE–1st century CE, it is fundamental to gain an understanding of the possible relations between these two sites. Some similarities have been noted, such as the carnelian and agate beads or the 'Indo-Pacific' beads, but there are also significant differences. The most obvious is the absence of nacreous shell beads, which are typical of Sumhuram, and the presence of serpentine beads, which are completely absent from Sumhuram. This suggests peoples of different cultures maintaining lively contacts, presumably not only of a commercial nature. Testimony of production and beads made of exogenous materials testify to the technical and relational capacity of the settlement that is emerging as a local center of some importance for the wider region.

Dr. Silvia Lischi
http://orcid.org/0000-0003-0038-7332
University of Pisa, Department of Civiltà e Forme del Sapere
silvialischi@msn.com

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