THE BEADS OF ATHRIBIS, MIDDLE EGYPT: AN OVERVIEW AFTER 10 YEARS OF EXCAVATION

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It was in 2012 that the University of Tübingen started the proper excavation of the temple of King Ptolemy XII at Athribis. This temple was reused for many years during the Late Roman (Coptic) and medieval (Islamic) periods until its destruction between the mid-10th and the mid-11th century. During that time the temple was filled with debris and rubbish, and several rooms were temporarily used as animal pens. Besides a variety of objects such as wood, fabrics, and coins, we found hundreds of beads, several pendants, and other jewelry, like horn bracelets, bronze rings, and hairpins. We have started to classify the beads in order to produce a catalog of all the jewelry as a basis for further in-depth research.

INTRODUCTION

The archaeological site of Athribis in Middle Egypt (Figure 1) is located about 7 km west of the modern city of Sohag. Covering more than 30 hectares, it consists of four main zones. The first zone is a settlement area of around 16 hectares with mudbrick buildings for housing and workshops. The settlement is presumably early Ptolemaic, but the 30th Dynasty is also possible due to the presence of a limestone block of Nectanebo II (El-Sayed 2012:17, 33, Figure 1.1.10). Furthermore, there is the 1.7-km-long necropolis of rock-cut tombs in the Gebel Adruba directly adjacent to the west side of the site.

The temple of Repit (Figure 2) is one of the last unexplored large stone temples of the Ptolemaic era. It is 75 m long, 45 m wide, and preserved to a height of slightly more than 5 m. Our present excavation is part of a multidisciplinary project that started in 2003 and is led by Christian Leitz and directed in the field by Marcus Müller (Eberhard Karls-Universität Tübingen, Germany). During this time the team carried out archaeological excavation of the temple and research on the archaeological remains, as well as epigraphic, architectural, and art-historical studies.[1] Since 2012, a team of international conservators has provided emergency conservation for the archaeological finds and excavated areas of the temple, as well as moving sections of limestone columns, walls, architraves, and ceilings to newly created storage areas.

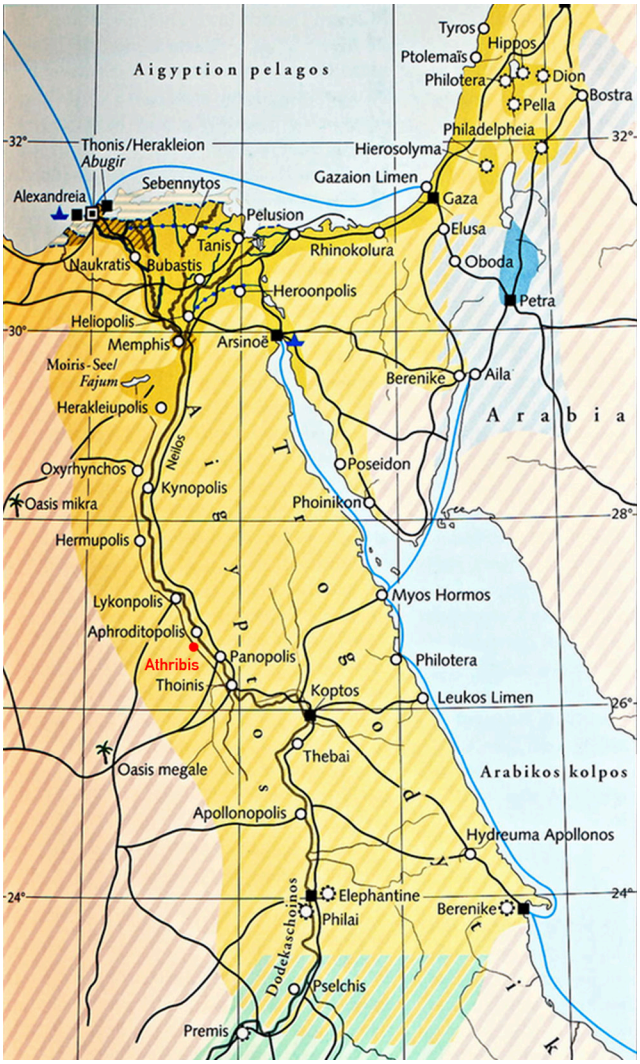

Figure 1. Ancient Egypt during the Ptolemaic era (after Wittke, Olshausen, and Szydlak 2012:121).

Figure 2. The temple of Repit at Athribis (all images © Athribis Project).

Dedicated to the lion-goddess Repit (Figure 3), her husband Min, and their son Kolanthes, the temple was built during the reign of Ptolemy XII (81-58 and 55-51 BC). Its decoration was completed over a period of 200 years, the inner part under Ptolemy XII, then during the reigns of the 1st-century Roman emperors Tiberius, Caligula, Claudius, Nero, Vespasian, Titus, and Domitian (Altmann 2012:200-206). In addition, repurposed stone blocks inscribed with the name of Emperor Hadrian were discovered in a secondary-door blocking which dates to the late Roman period. It was perhaps in the 2nd and 3rd centuries AD that stables were built in the outer western courtyard, perpendicular to the temple wall, thereby partly damaging the reliefs and hieroglyphic texts.

Figure 3. The goddess Repit wearing a bead necklace.

Presumably in the mid-4th century, the temple became part of a Coptic nunnery and was greatly transformed by the addition of monastic installations: the main entrance was blocked and a church was built in front. Workshops were installed in the main sanctuary and other rooms of worship, leaving behind ceramic vessels and large masonry vats, perhaps used for dyeing textiles. In addition, water channels were carved into the stone floors.

During this period, decorative elements were destroyed or damaged. In particular, divine figures and symbols were meticulously hacked or covered with a lime plaster which, in actual fact, protected the painted layers beneath. The northern ambulatory L2 was largely transformed by cutting the column bases and by building an imposing gate with pilasters, thus creating a new space within the ambulatory that was defined with sockets in the floor. It was during this Coptic re-use of the temple that its three crypts, with all their valuable goods, were plundered.

In early medieval times, i.e., after the Arab conquest in 642, the temple was again repurposed. As early as the 8th century, the roofs and columns of the large pronaos (room A) and the roof of adjacent room B collapsed, most likely by human influence because the walls of the temple show no evidence of earthquake damage. The fallen blocks were

removed, and the rooms cleared. Both rooms were divided into several smaller units by walls built of mudbricks and reclaimed limestone rubble, with new stone-tiled floors. In the pronaos, these rooms are aligned along a surprisingly prestigious corridor with small columns of fired bricks. Two of these rooms served as kitchens, others as workshops and storage facilities. They even built a complete wall in room B by setting small Late Roman stone columns next to each other. Large jars and small pots in the floor indicate storage of nourishment, whereas hearths point to cooking activities. Other rooms were mainly used as stables and waste depositories, e.g., the eastern ambulatory L1 and the corner of the northern and western ambulatory. From the mid-10th to the mid-11th century, the temple served as a quarry for building stone and lime production, until its ruins disappeared under centuries of debris and sand.

As with many other sites across Egypt, the temple was initially partly excavated by Flinders Petrie (1908) in 1907-1908. During a blitz one-month campaign, trenches were dug along the walls to establish a ground map and document some of the reliefs. The temple then lay untouched until the end of the 20th century, when the Egyptian Antiquities Organization led the next work phase from 1981 to 1997 (El Farag, Kaplony-Heckel, and Kuhlmann 1983; El Masry 2001). Around one third of the temple was left unexcavated, due to the fact that these areas were topped by huge stone blocks from the collapsed ceiling, columns, and walls. Work was only resumed in 2003 with the Eberhard Karls-Universität Tübingen project led by Christian Leitz. The initial focus was on epigraphic work, but since 2012 work centered on the stratigraphic excavation of the remaining third of the temple under the field direction of Marcus Müller, together with the removal of more than 400 collapsed blocks of up to 37 tons (columns, capitals, architraves, ceilings, and walls). Moreover, in 2018 we started to excavate west of the temple of Repit searching for a temple of Osiris that is mentioned in a newly discovered hieroglyphic inscription. Consequently, this trench was named "Osiris-Sondage." It turned out to be very rich in single finds, namely ostraca (potsherds with inscriptions) and beads. The trench was therefore enlarged to the south (Figure 4). Due to the very high number of ostraca that were found there, we labelled this area "Ostraca Excavation." Until now we have discovered nearly 20,000 ostraca in both areas. It is worth mentioning that the excavation of the temple of Repit was completed in 2019, and has been open to the public since April 2020. The Mission continues to dig in the area west of the temple.

In all the layers, both in the temple and the outer areas, there was a great variety of objects and materials that

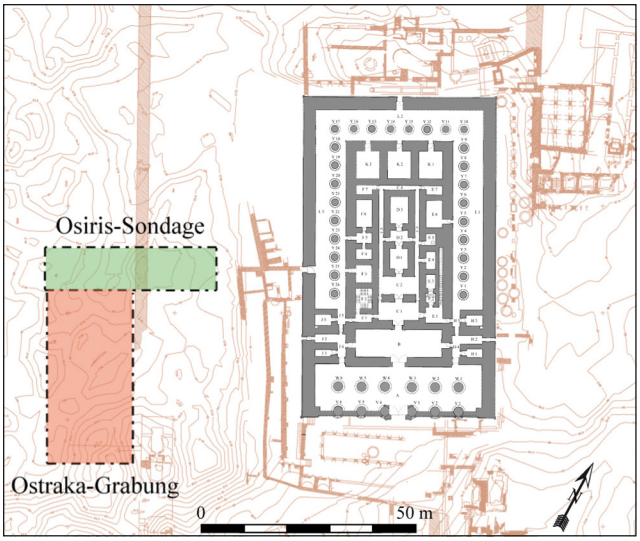

Figure 4. The temple of Repit and the excavation areas to the west of it.

provide a glimpse of the daily life of the people who lived in the surrounding settlement of Athribis that was inhabited until the High Medieval Period. Thus, the finds enable us to imagine what clothes they wore, which tools, tableware, and coins they used, which animals they kept, what they ate, and with which objects they adorned themselves. Amongst heaps of fragmented pottery, animal bones, fabrics, ropes, mats, and glass, we also found spindle whorls, parts of furniture, working equipment, and figurines, as well as coins from Greco-Roman to medieval times. To our great joy, we also discovered 771 beads.

BEADS IN ANCIENT EGYPT

Beads are known in Egypt since the Epipaleolithic period (ca. 10,000-5500 BC) (Bard 1999:751; Lucas and Harris 1962:41; Petrie 1923:80). At first they were made of natural products, namely shells, animal teeth, bone, horn, river pebbles, and seeds (Krah 1982:939). Only later did beads made of artificial materials evolve, which became extremely popular as can be seen by the high number of beads in a great variety of materials throughout all periods. It is also noteworthy that the ancient Egyptians used beads in a wide variety of ornaments including necklaces, collars, bracelets, anklets, pectorals, and earrings. They were also used to adorn garments, mummy nets, belts, and textiles, even sandals and footstools (Harris and Lucas 1962:41-42; Krah 1982:939).

Numerous reliefs on Pharaonic and Greco-Roman temples show the gods of ancient Egypt regularly wearing

jewelry, mostly collars consisting of several rows of beads. One example from the temple in Athribis shows the goddess Repit with such a collar: two rows of long and rectangular elements representing tubular beads, followed by a row of globular beads and a row of drop-shaped beads on the outer edge (Figure 3).

In Ancient Egypt, those involved with the production of jewelry and its components were divided into three groups (Lacovara and Markowitz 2020:86). Goldsmiths, the so-called *nuby*, held the highest rank, followed by those working with precious stones (*neshdy*) (Figure 5), and then the *iru weshbed*, beadmakers who worked only with faience and glass.

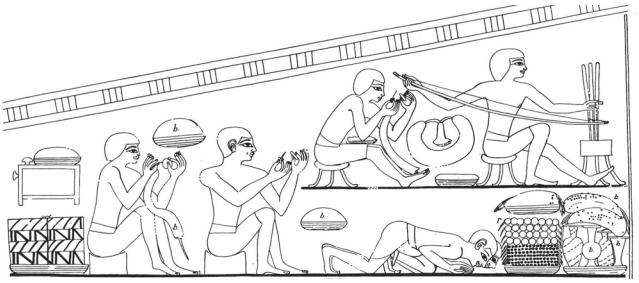

Figure 5. Mural of a jewelry workshop in the tomb of Rechmire, Thebes; 18th dynasty (de Garis Davies 1943:Figure 54).

After the beads were finished, they were strung on flax thread composed of three or more strands twisted together. Unfortunately, threaded beads are rare at Athribis; we only found one example that combines dark and bright: a dark blue bead with a very light green one (Figure 6 left). This is fairly common, e.g., at the Red Sea port of Berenike (Then-Obłuska 2018a:211-212). There was, however, also an agate bead with a twisted copper-alloy wire in the hole (Figure 6 right).

Figure 6. Threaded faience and glass beads (19-36-61/131) and an agate bead with the copper-alloy wire found in its perforation (16-0/8).

THE ATHRIBIS BEAD ASSEMBLAGE

Of the 771 recovered beads, all but 21 belong to seven basic shapes (Figure 7; Table 1). The rest have unique forms. Some are irregularly shaped due to their crystalline structure (e.g., amazonite beads). Others are star shaped (Figure 8 left), semi-triangular, or rectangular (Figure 8 right).

The beads of Athribis may be grouped into two categories: natural materials (stone, wood, bone, horn, clay, and metal) and man-made substances (faience and glass). The vast majority are made of artificial materials: glass (53.2%) and faience (33.9%). With the exception of five beads whose composition could not be determined, the remaining 13% represent natural materials, of which carnelian (n = 58, 7.5%) is the most prevalent.

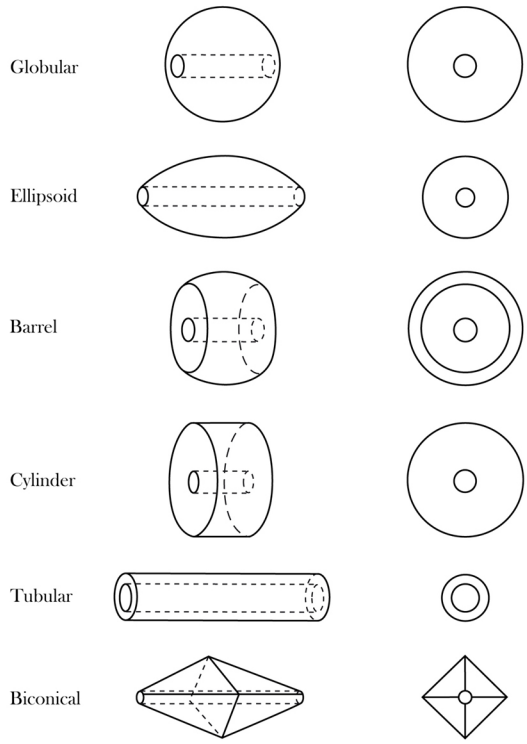

Figure 7. Athribis bead forms.

Stone Beads

At Athribis, stone beads are represented by six materials: carnelian, agate, amethyst, amazonite, quartz diorite, and calcite alabaster.

Carnelian

Of the 58 carnelian beads, most (n = 32) are globular (Figure 9 upper left), but seven other forms are also present

Table 1. The Frequency of Beads at Athribis Based on Shape and Material.

Material	Globular	Ellipsoid	Barrel	Cylinder	Tubular	Biconical	Polygonal	Unique	TOTAL
Carnelian	32	4	4	1	1	10	5	1	58
Agate		5		1					6
Amethyst	1	2	1			1	1		6
Amazonite			1		1		4	4	10
Quartz diorite	1								1
Calcite alabaster	2		3						5
Wood			2						2
Horn			1						1
Bone			2						2
Clay	1		2					1	4
Undetermined			2			2		1	5
Faience	1	1	45	45	165	1		3	261
Glass	1	11	169	193	15	9	1	11	410
TOTAL	**39**	**23**	**232**	**240**	**182**	**23**	**11**	**21**	**771**

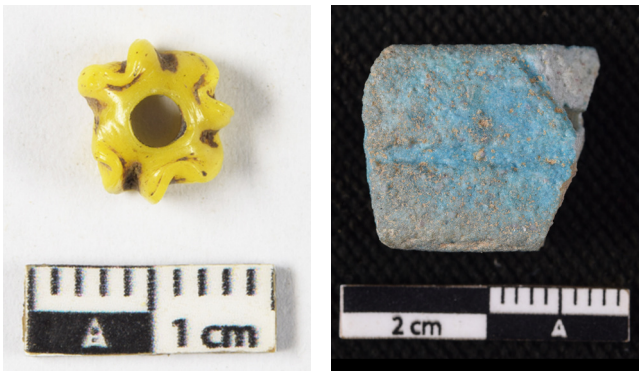

Figure 8. Examples of bead forms: left, wound glass, star-shaped (11-4-20/3); right, rectangular faience bead as used in collars (18-36-1/18).

with bicones (n = 10) predominating (Figure 9 upper right). The remaining forms are only present in single-digit quantities, e.g., five polygonal beads, including heptagonal bicones (Figure 9 center and lower left). The holes of carnelian beads are normally straight and of a consistent diameter. There are, however, strikingly narrow holes, sometimes off-center (Figure 9 lower left), as well as ones that are curved (Figure 9 lower right). Most globular carnelian beads show only rudimentary finishing (Swift, Stoner, and Pudsey 2022:73, 113), a feature also detected at Athribis. The beads we found are well shaped, but their dull surfaces reveal that they were not intensively polished.

Beads made of carnelian are found all over Egypt including Berenike on the Red Sea (Then-Obłuska 2018a:207) and south to Nubia as far as the 4th cataract, so they are part of the material culture of many regions (Then-Obłuska 2014:1071). The beads from Athribis were discovered in layers of early medieval times (8th-early 11th centuries). Carnelian beads of various forms are well circulated in Late Roman times (Then-Obłuska 2015:747, 749). Since globular, roughly dressed carnelian beads became particularly popular in the 6th-7th centuries (Swift, Stoner, and Pudsey 2022:73, 113), the relatively high number of carnelian beads at Athribis fits the pattern, although several of the beads derive from slightly later layers. The fashion of utilizing such beads continued over centuries, showing temporal endurance. They were likely considered valuable and kept for a long time. Eventually, some of them fell out of favor and ended up in the dump layers where we discovered them.

The ancient Egyptians were already using carnelian in the Nagada II culture (ca. 3600-3200 BC), at first for beads and amulets and later also for inlays for their jewelry (Bard 1999:376, 385-386, 851; Krah 1982:939; Lucas and Harris 1962:391). This material was already attractive to rulers before Egypt's unification under one pharaoh; the king buried in tomb U-j in Abydos had disc-shaped beads made of carnelian as a grave good (Dreyer 1998:167). Its color reminded them of blood, thus it was a symbol for life

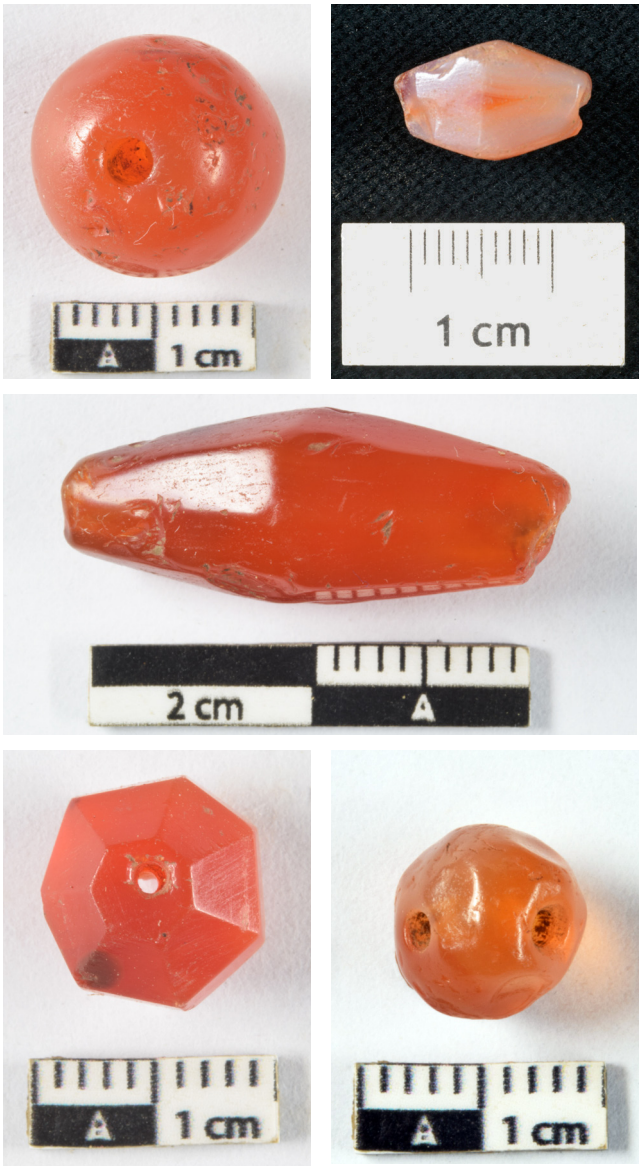

Figure 9. Carnelian beads: upper left, globular (11-4-20/1); upper right, biconical (14-27-84/18); center, large heptagonal bicone (11-4-26/007); lower left, heptagonal bicone with an off-center hole (11-4-18/47); lower right, globular with a curved hole (14-27-96/141).

and popular during the whole Pharaonic period. Carnelian is therefore mentioned in the Ancient Egyptian *Book of the Dead*. Such a religious connotation is also traceable in a hieroglyphic text in the Repit temple which mentions that carnelian is ideal for sanctifying the temple and is an integral part of its function (Leitz, Mendel, and El-Masry 2010:XVII).

Carnelian occurs in the Eastern Desert (Wadi Abu Gerida) in Egypt and in Nubia along the Nile near Wadi Halfa (Then-Obłuska 2015:745) and at Gebel el-Asr, 65 km northwest of Abu Simbel (Lucas and Harris 1962:391; Nicholson and Shaw 2000:27).

Agate

The six banded-agate beads found at Athribis vary in color from brown-beige-grey to reddish-brown with white inclusions and variations in translucency. All are very large in comparison to the other beads. Five are ellipsoidal (Figure 10 top), the remaining specimen is cylindrical (Figure 10 lower left). They derive from layers of the 9th to mid-11th centuries. Agate beads usually have very narrow holes (Figure 10 lower right).

Figure 10. Banded-agate beads: top, ellipsoid (14-26-36/3); lower left, cylindrical (14-29-4/8); lower right, typical narrow drill hole in the illustrated ellipsoid.

In ancient Egypt, agate beads appear as early as the Predynastic period, i.e., at least by the 4th millennium BC (Bard 1999:376, 751; Krah 1982:939; Lucas and Harris 1962:387; Nicholson and Shaw 2000:26), but were more popular during the Greek and Roman epochs than in pharaonic times (Lucas and Harris 1962:387). Agate quarries exist in Egypt in the Eastern Desert, mainly at Abu Gerida (Nicholson and Shaw 2000:26) and the oasis of Fayoum, and also in Nubia.

Amethyst

The six amethyst beads represent five shapes, so there does not seem to have been a preferred one for this stone (Figure 11). This applies also to the color because the beads from Athribis range from deep purple to nearly colorless which encompass all five categories of Pliny the Elder's classification (Drauschke 2010:225).

Figure 11. Amethyst beads: left, globular (15-5-300/9); right, pentagonal (14-28-3/2).

One of the beads is angular drop-shaped, a type that was exported widely to the eastern and western Mediterranean, especially in the 6th and 7th centuries (Swift, Stoner, and Pudsey 2022:71, 75, 85, 110). The context of the bead is probably the 9th century, indicating that this type was in circulation for several centuries. This assumption is supported by another amethyst bead found in an early medieval layer, perhaps 9th or 10th century. Of the six amethyst beads, another two can be attributed to the Byzantine era (5th-6th centuries).

The amethyst beads from Athribis are all finely polished which is typical for beads of this material (Swift, Stoner, and Pudsey 2022:113). Drop-shaped amethyst beads became popular in status display across the eastern Mediterranean (Swift, Stoner, and Pudsey 2022:339). Thus, the beads at Athribis show that this village, with its monastic complex and civil polity, was well integrated into the trade network and social traditions of the Byzantine period.

Amethyst was almost entirely used for jewelry, with beads being produced from the Nagada II culture (ca. 3600-3200 BC) until Late Roman times (Bard 1999:385, 851; Drauschke 2010:225-228; Nicholson and Shaw 2000:51), e.g., at a workshop in Alexandria where the raw material was excavated (Drauschke 2010:227). They reached their peak of popularity in the 12th dynasty (1974-1781 BC) (Nicholson and Shaw 2000:51).

Amethyst occurs in Egypt's Eastern Desert, especially in the Wadi-el-Hudi region (Bard 1999:51, 871; Lucas and Harris 1962:389; Nicholson and Shaw 2000:51) and near Gebel Abu Diyeiba (near Safaga), as well as at Gebel el-Asr near Abu Simbel (Lucas and Harris 1962:389; Nicholson and Shaw 2000:51; Then-Obłuska 2015:745) and in nearby areas of the Western Desert (Bard 1999:560), e.g., at Toshka (Zibelius-Chen 1997:145).

Amazonite

There are only 10 examples of amazonite beads, unfortunately all from disturbed layers. Four each are classified as polygonal (Figure 12 left) and irregular (Figure 12 right), whereas there is only one barrel-shaped bead and one tubular example. The polygonal cylinders are especially common during the Roman period (Xia 2013:139) and are favored for the crystalline structure of the material. The perforations are usually narrow, sometimes irregular and off-center.

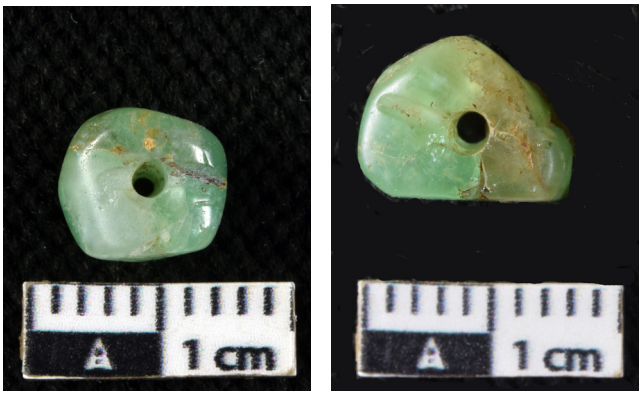

Figure 12. Amazonite beads: left, polygonal (19-36-61/50); right, irregular (17-36-5/275).

Amazonite, one of the most precious stones in ancient Egypt, was generally employed on a small scale but was already in use for beadmaking in Neolithic times (Fayum-A culture, ca. 4500-3500 BC; Nagada II culture, ca. 3600-3200 BC), slightly more often in the 12th dynasty (1974-1781 BC), and later in the New Kingdom (ca. 1550-1070 BC) (Bard 1999:229, 376,385; Lucas and Harris 1962:394). It was used to make a variety of beads, amulets, and inlays from the Middle Kingdom (ca. 2045-1781 BC) to much later times, such as the finds at Athribis that date to the Roman and medieval periods (30 BC-12th century AD).

In Egypt, amazonite can be found in the Eastern Desert (Gebel Migif, Wadi Abu Rusheid, Wadi Higelig, Hafafit range) and at Tibesti in the Libyan Mountains (Bard 1999:560; Lucas and Harris 1962:394; Nicholson and Shaw 2000:46). Without microscopic or chemical analysis, however, it is sometimes difficult to distinguish amazonite

from beryl which was mined at Mons Smaragdus (Sikait-Zabara mining district) (Then-Obłuska 2015:745). In Late Roman times it was, at least partly, traded by the Blemmyes as we know from Olympiodoros of Thebes (Then-Obłuska 2015:765).

Quartz Diorite

There is only one bead of this material, a globular bead with a straight hole (Figure 13 left), found in a context heavily disturbed by modern mudbrick robbers. Egyptian mining areas are located at the Roman quarries at Mons Claudianus (Nicholson and Shaw 2000:34), in the Eastern Desert (Wadi Umm Balad, Wadi Barud, Wadi Fatiri al-Bayada) (Nicholson and Shaw 2000:30), and at Aswan (Klemm and Klemm 1993:6, 352, 408, 435). The raw material of the Athribis specimen most likely derives from Mons Claudianus due to its proximity to Athribis and the higher ratio of the whitish component in the stone in comparison to material from the Aswan deposit.

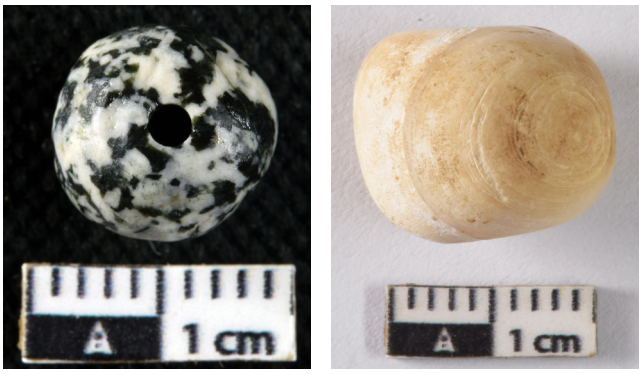

Figure 13. Globular quartz diorite bead (19-36-30/140), left; barrel-shaped calcite alabaster bead (11-4-33/11), right.

Calcite Alabaster

Beads made of calcite alabaster are rare at Athribis with only five recovered to date, an expected result as they are rare already in Roman times (Xia 2013:144). The stratigraphic contexts date the beads to the 10th and 11th centuries. Three are barrel shaped (Figure 13 right) while the other two are globular.

In Ptolemaic times (306-30 BC), the area between the Middle Egyptian cities of Minya and Assiut received the designation *Alabastrites* which, in turn, gave its name to the stone that was the most typical for this region: alabaster (Klemm and Klemm 1993:199; Nicholson and Shaw 2000:60). Egyptian alabaster, however, is an incorrect term since true alabaster is composed of gypsum whereas Egyptian alabaster is actually travertine, i.e., a variety of limestone consisting largely of calcite or aragonite (Nicholson and Shaw 2000:21-22, 59). The term calcite alabaster, mostly used and extremely common in Egyptology, is an uneasy compromise because it is not recognized by geologists (Nicholson and Shaw 2000:59).

Calcite alabaster beads have been made since the Predynastic period (Krah 1982:939). The raw material can be found in the entire Egyptian limestone desert, but the most prominent mining regions were restricted to the region between Cairo and Sohag, especially Wadi Gerawi and Wadi Hof (both east of Cairo) (Bard 1999:367), Wadi Sannur (east of Minya), Wadi Assiuti in Assiut, and Hatnub near Amarna, which was the capital of Pharaoh Akhenaten and Nefertiti (Bard 1999:560; Klemm and Klemm 1993:199, 434; Nicholson and Shaw 2000:59). It also occurs in some of the oases and depressions of the Western Desert (Nicholson and Shaw 2000:22).

Clay

Only four beads are made of fired clay, all of which were found in heavily disturbed contexts with material from Byzantine to early medieval times. Two are barrel shaped, though slightly deformed, and belong to the collared-bead group. Another bead is globular (Figure 14 upper left) while the fourth is non-geometric. Thus, no shape preference can be deduced due to the low number of finds, though clay beads found at other sites, including Early Roman Berenike (Then-Obłuska 2015:747, 749) and the Nubian Kingdom of Makuria (Then-Obłuska 2013:683, 691), suggest that the globular shape was preferred. Only more clay-bead finds will establish whether this is also the case at Athribis.

Wood, Horn, and Bone

Beads made of organic material are particularly rare at Athribis. There are two wooden beads (Figure 14 upper right), one horn (Figure 14 lower left), and two carved from bone (Figure 14 lower right). All are barrel shaped. The thick shape of the wooden bead is typical for Roman times (Xia 2013:144). While one of the wood beads was found in a heavily disturbed layer, the other was in a layer that can be dated to the reign of al-Mustansir (AD 1036-1094). A 9th-10th-century date can be postulated for the horn bead. One bone bead was a surface find, whereas the other came from a layer that is later than a slightly lower stratum containing a coin weight of al-Mustansir. A later layer is also dated by a coin weight of al-Mustansir, proving that this bead was in use during his reign or, theoretically, slightly later.

Figure 14. Beads of clay and organic materials: upper left, globular clay (19-0/92); upper right, barrel-shaped wood (11-4-35/10); lower left, horn (14-26-7/6); lower right, bone (11-428/2).

Faience

In order to distinguish it from the related Italian faience made in Faenza, the material produced in Egypt should be called "Egyptian faience," which is a glassy material made of silica (crushed quartz or sand) with small amounts of lime and an alkali (plant ash or natron) (Bard 1999:297; Nicholson and Shaw 2000:186-187). It is interesting to note that the ancient Egyptian name for this material is *thnt*, or more rarely *hsbd*, which was also used for lapis lazuli and can be translated as shimmering, gleaming, or shining (Nicholson and Shaw 2000:178). Its original color is blue, but with the addition of iron-oxide colorants, it can exhibit a range of hues while the core remains whitish (Figure 15 top row left). The characteristic feature of the Athribis faience beads is their porosity, a feature that is typical for both Egyptian and Nubian (Then-Obłuska 2014:1070) cultures over a long period of time.

In terms of quantity, faience beads are the second most prevalent (n = 261, 33.8%). This evidence is contrary to Nubia where faience is not only *generally* the most common, but *especially* prevalent in post-Meroitic times (Then-Obłuska 2014:1073), i.e., contemporary to many layers at Athribis. Tubular beads (n = 165) were clearly favored (Figure 15 top row) which is also the case in post-Meroitic Nubia (Then-Obłuska 2014:1070). Thus, the Athribis beads fit this cross-cultural pattern not only in terms of quantity, but also as regards shape. Since the tradition of making faience beads ended in Egypt in the 3rd century AD (Then-Obłuska 2014:1070, 2018a:227, 2018b:590), it seems likely that the faience beads found in early medieval layers were handed down over the generations. Their cross-sections are sometimes slightly compressed. This is sometimes intentional, as can be seen in a Late Roman example from Berenike (Then-Obłuska 2015:749-750), but may also be the result of an accident during the firing process. Some beads fused to the pottery vessel in which they were apparently fired (Figure 15 top row).

Barrel-shaped and cylindrical beads are also fairly numerous with 45 specimens each. Some of the barrel-shaped beads are exceptionally large (Figure 15 middle row). A few of these are fluted melon shaped (Figure 15 middle row). Common in Roman times and widespread throughout the empire (Xia 2013:141, 143), they could have been in use for a very long time since they are usually dated to the early Roman period with a possible earlier invention (Then-Obłuska 2018a:218-219, 230). Unfortunately, all but one of the melon beads derive from disturbed contexts; the dated one comes from a layer of the 9th-10th centuries. It is noteworthy that the fluted beads are part of a long tradition that ranges as far as the 4th cataract (Then-Obłuska 2014:1070). Other beads are collared (Figure 15 bottom left). The cylindrical beads were apparently manufactured in a row with constrictions between each segment to facilitate their separation (Figure 15 bottom row). Other forms are rare: three non-geometric, one globular, and one ellipsoid. Some extremely large beads are decorated with impressed concentric circles around a dot (Figure 15 bottom row). This type is present in the whole Nile Valley and the Red Sea area from Ptolemaic, through Roman, to post-Meroitic times (Then-Obłuska 2018a:221). Thus, they are common in the region, but not numerous, befitting what we found at Athribis: only 16 specimens and all, unfortunately, from disturbed contexts. One bead exhibits diagonal grooves (Figure 15 bottom right), others have small grooves, a decorative pattern that is known from the Nile Delta to Meroe in Ptolemaic and Roman times (Then-Obłuska 2015:749, 750).

The earliest Egyptian faience beads date to the Badari Culture (ca. 4500-4000 BC) (Schlick-Nolte 1977:141). At first, only green glazed faience appears in Naqada I (ca. 4000-3600 BC), to be succeeded by faience beads of various types in Naqada II (ca. 3600-3200 BC), but faience

Figure 15. Faience beads: top row, left to right, split bead showing the whitish core (17-36-5/414), tubular (mixed), misfired beads (19-36-30/136, 17-36-5/304); middle row, left to right, fragment of a large bead (17-36-5/92), long bead with circle-and-dot decoration (17-36-5/414), fragmentary melon beads (17-36-4/97, 19-36-30/20); bottom row, left to right, bead with collar (19-0/108), segmented bead (16-32-2/2), bead fragments decorated with circle-and-dot designs (17-36-4/2106), bead with diagonal grooves (19-0/73).

only becomes common from early dynastic times onwards (Stone and Thomas 1957:40, 44). Faience was one of the most popular materials in Egyptian history, especially for beads; the ca. 70,000 faience beads from the Ulu Burun shipwreck being a striking example (Pulak 2005:82). Moreover, faience not only has a visual effect and meaning, it is also the symbol of magnificence as indicated by a hymn to the king of gods, Amun-Re, which proclaims "the sky is faience for your sake" (Assmann and Kucharek 2018:444).

Glass

Glass, as a mixture of silica, alkali, and lime, appears in Pharaonic Egypt slightly after the advent of the New Kingdom, i.e., around 1500 BC (Bard 1999:357; Lankton, Diamanti, and Kenoyer 2003:43; Nicholson and Shaw 2000:195). Earlier glass is still a matter of discussion because these rare examples are not securely dated and thus uncertain for the most part (Bard [1999:357] and Lucas and Harris

[1962:46, 179-181] mention early glass in the 5th dynasty). Most likely, it was probably a fortuitous product resulting from accidents in faience production (Nicholson and Shaw 2000:195). Despite the fact that faience was already in use for much more than one millennium, it seems likely that the idea and perhaps the know-how for glass originated outside Egypt (Petrie 1926:229). This is supported by the fact that the Egyptians used the foreign terms *mekku* and *ehlipakku* for glass (Bard 1999:357; Nicholson and Shaw 2000:195).

While glass bead production has a tradition in Egypt from the 18th dynasty onwards (Petrie 1923:80), they appear in Nubia only in the Late Meroitic period (Then-Obłuska 2014:1072, 1073). Moreover, they constitute very small numbers in Post-Meroitic Nubia, although they predominate in Athribis (n = 410 of 771). We can therefore observe a distinct difference in glass bead culture in Middle Egypt and Upper Nubia at this time. In Ptolemaic and Roman times, Alexandria became a center of glass working and trading (Bard 1999:358), as did Wadi Natrun in Late Roman times (Then-Obłuska 2015:750). Alexandria remained in this position even after the Arab conquest in 642 (Lankton, Diamanti, and Kenoyer 2013:76).

The majority of the glass beads are cylindrical (n = 193) (Figure 16 top row left) and barrel shaped (n = 169) (Figure 16 top row). These shapes constitute 47% of all the beads and 86.4% of the glass bead assemblage. The remainder of the Athribis beads belong to other forms, so that glass is the only material at Athribis that was used for all attested bead shapes. A special form is the wound star bead that may have been intended to represent a plant blossom (Figure 8). There are also drawn, collared, segmented beads (Figure 16 top row right).

Most of the drawn rounded beads (e.g., Figure 16 second top row) are Late Roman types (Then-Obłuska 2018a:220, 226, 228). The drawn green bead in Figure 16 (middle row left) can be dated to the late 10th-early 11th centuries, according to stratigraphy, pottery, and coin weights. Such beads seem to have a very long temporal range, probably until at least the 16th century (Then-Obłuska 2016:581, 588, 604-606). They constitute about half of the glass bead assemblages at Late Roman Berenike (Then-Obłuska 2018b:592).

Among the monochrome glass beads, blue specimens predominate (n = 198), followed by green (n = 79) and yellow (n = 28). Red, brown, black, white, and transparent examples comprise the rest (n = 19). Green and blue glass beads appear to be the most widespread in Roman times (Xia 2003:139), so the strong presence of blue beads at Athribis is unusual. Green and blue glass beads were particularly popular from the end of the 4th to the early 6th century, whereas in the 6th and 7th centuries, dark yellow, purple, and brown (Figure 16 top row) beads were more common. The purple and brown examples were probably intended to imitate purple amethyst beads (Swift, Stoner, and Pudsey 2022:72).

The stratigraphic context of a segmented green bead (Figure 16 top row right), combined with associated coin weights, wooden artifacts, and pottery, proves that this bead was in circulation during the reign of al-Mustansir (AD 1036-1094) or perhaps slightly later. Opaque yellow glass barrels and cylinders, also present at Athribis, are common in the whole Nile Valley south to Lower Nubia until at least the 16th century (Then-Obłuska 2016:581, 589, 603-607). Yellow-striped beads are rare at Athribis (n = 5) but seem to be a typical Egyptian product as only a few of them have been found outside Egypt. Thus, this type is evidence for a possible local or regional custom or fashion with such culturally distinctive and provincially restricted items (Swift, Stoner, and Pudsey 2022:337).

A considerable number of the glass beads are polychrome, some of them with stripes or bands of different colors. The pattern on a wound cylindrical bead (Figure 16 second middle row) seems to be typical of the Early Islamic period (Lankton, Diamanti, and Kenoyer 2013:78, Figure 8.4, no. 661). In fact, this bead was found in a layer attributed to late Early Islamic times. A drawn oblate bead with yellow and white stripes on a black body (Figure 16 middle row) derives from a layer of the early 11th century. The striped and bichrome beads are known not only in Egypt but all over the ancient world (Then-Obłuska 2015:752, 755). Parallels are present in the late phase of Berenike (4th-early 6th centuries) (Then-Obłuska 2015:753).

The wound glass beads include examples with monochrome (Figure 16 middle row right) and polychrome (Figure 16 bottom row left) eyes set into the translucent body. They became popular in the Late Period and lasted until early Roman times, also into the Meroitic period in Nubia, and were traded over vast territories (Then-Obłuska 2015:757). The bead with the monochrome eyes dates to Byzantine times, whereas the polychrome example comes from a heavily disturbed context.

A combed trail-decorated bead (Figure 16 second bottom row) most likely dates to the early 10th century based on the associated pottery assemblage and the stratigraphy. This fits well with the distribution of trail-decorated beads of various colors in the whole Middle East, all the way upstream into Nubian Makuria where they seem to date to the 10th-12th centuries with a concentration in the 11th century (Then-Obłuska 2013:683-684, 696).

Green beads with opaque yellow glass at one end (Figure 16 bottom row) belong to the folded-glass group. They

Figure 16. Glass beads: top row, left to right, cylindrical (19-0-125), drawn barrel-shaped (19-36-30/104), barrel shaped (19-36-30/107), drawn segmented (11-4-6/644); middle row, left to right, drawn compressed cylinder (14-27-70/49), wound with encircling stripes (17-12-192/3), drawn with stripes (14-27-38/14), wound eye bead (13-18-91/3); bottom row, left to right, wound eye bead (19-36-30/81), wound with combed design (11-4-36/23), wrapped bicolored (17-12-54/13), drawn gold-in-glass (17-36-4/2039).

can also be labeled as drop-shaped "date" beads, although they could represent fruits or seeds (Xia 2013:141) or lotus blossoms (Lankton, Diamanti, and Kenoyer 2013:59). This type is common in Egypt and Nubia (Then-Obłuska 2015:760). The illustrated bead was found in a layer that probably dates to the 9th century. Another was found in a context attributable to the late 10th-11th centuries. These beads commonly occur in assemblages in smaller numbers than other beads (Swift, Stoner, and Pudsey 2022:81; Xia 2013:141). This is also the case at Athribis (n = 8). Examples have been found at Berenike, part of the Mediterranean-Red Sea trade network (Then-Obłuska 2018a:220), indicating the participation of Athribis in a greater network. Whether the beads were really used to actively communicate aspects of cultural identity as considered by Swift, Stoner, and Pudsey (2022:81) is questionable and not verifiable in Athribis.

Metal-in-glass beads, invented in the late 3rd century BC (Lankton, Diamanti, and Kenoyer 2013:54), belong to the drawn and segmented category (Then-Obłuska 2015:752-753). At Athribis the metal is gold foil. The example in Figure 16 (bottom right) is fluted and was found in a heavily disturbed context. While metal-in-glass beads

are very rare at this site, they are quite common in the Eastern Mediterranean up to the Nubian 4th cataract from the Hellenistic period until medieval times (Then-Obłuska 2014:1072, 2016:588; Xia 2013:137, 139).

Most of the Athribis glass beads were discovered in layers that belong to the Byzantine and early medieval periods. This is no surprise since glass bead necklaces were particularly common from the 4th-7th, and even the 8th, centuries (Swift, Stoner, and Pudsey 2022:36). Due to its favorable price and easy availability, glass was the most popular material for the beads at Athribis.

CONCLUSION

From 2012 until 2022, we uncovered 771 beads and more than a dozen pendants in the temple of Repit and a nearby trench. They all derive from strata that postdate Pharaonic and Ptolemaic times and can be attributed to Late Roman as well as Early and High Medieval Periods ending in the 13th century.

The vast majority of the beads are made of glass (n = 410) and faience (n = 261). Yet, ten more materials are represented: carnelian, agate, amethyst, amazonite, quartz diorite, calcite alabaster, clay, wood, bone, and horn. Of these materials, carnelian was clearly favored (n = 58). This fits well with its popularity in Roman times. Since wood shows a greater increase in Roman times (Xia 2013:139), its scarcity at Athribis is problematic. All the bead raw materials can be found in the Eastern and Western Deserts of Egypt.

The Athribis beads represent seven different shapes: globular (ball), ellipsoid (oval), barrel, cylindrical, tubular, biconical, and polygonal, as well as several unique forms. Cylinders (n = 240) and barrels (n = 232) clearly predominate, closely followed by tubular beads (n = 182). There is often a relationship between material and form, i.e., certain materials favor certain forms. Carnelian beads are most often globular, agate beads favor the ellipsoid form, wooden beads are always barrels, faience beads are most frequently tubular, while the vast majority of the glass beads are cylindrical and barrel-shaped. A perfect geometric shape was not always achieved, several imperfections in shape, surface, and drilling being noted.

Bead perforations vary considerably in size, depending on the material. Cylindrical glass beads quite often have a relatively wide perforation, with the hole's diameter comprising half of the bead's diameter. This is also characteristic of cylindrical faience beads. Conversely, agate beads regularly have tiny drill holes.

Monochrome glass beads, in most cases drawn and rounded, dominate the Athribis glass assemblage (n = 324 of 410). This is typical of the whole Nile Valley including Nubia, especially in Late Antiquity. Moreover, in Roman times, glass replaced faience as the most-used material for beads (Xia 2013:139, 143); faience bead production in Egypt ended after the 2nd century AD in favor of glass (Then-Obłuska 2014:1075). This is evident at Athribis in that glass beads constitute the majority and most of them were found in later layers. This contrasts with Upper Nubia where glass played a minor role at the time, while faience bead production clearly predominated. Local glass beadmaking seems to have declined after the Arab invasion because faience beads start to become more prominent in medieval times.

Single and multiple segmented glass beads belong to the Mediterranean tradition and were produced in Alexandria, including metal-in-glass beads (Then-Obłuska 2018b:592).

Monochrome drawn, cut, and rounded beads were the most common glass bead group during the late phase at Berenike (4th-early 6th centuries) with semi-translucent and translucent green, usually translucent light blue/green, semi-translucent yellow, and opaque yellow dominating the color palette (Then-Obłuska 2015:753). Generally speaking, this also applies to Athribis.

The bead assemblage at Athribis reveals short- and long-distance contacts during Roman and Byzantine times because many types belong to the Roman and Byzantine bead spectrum. Since the vast majority of the beads were found in layers of the 8th-12th centuries, even in disturbed layers, it is clear that they were in use for centuries. This is supported by the fact that the majority of the Athribis beads are of drawn manufacture, the prevalent method in Roman times, whereas the winding method was re-introduced and employed extensively in the medieval period (Xia 2013:140).

Many of the raw materials were sourced in the Eastern Desert, which is not far from Athribis, so the variety in materials is no surprise, especially due to the activity of Eastern Desert dwellers between the Nile Valley and the Red Sea coast in Late Roman times (Then-Obłuska 2015:765). The similarities between Athribis and other sites throughout the Nile Valley up to Nubia indicate that Athribis was part of a large trade network in beads from Roman to early medieval times.

The importance of color is indicated by the numerical prevalence of glass and faience because both materials imitate beads in precious materials in Roman and Byzantine times. Faience beads imitate turquoise, hexagonal cylinders mimic the crystal structure of amazonite or other green stones, and purple and brown drop-shaped beads copy

the angular drop-shaped amethyst beads that were so fashionable in Byzantine times (Swift, Stoner, and Pudsey 2022:81-82). This suggests that most inhabitants of Athribis were not wealthy enough to exclusively wear beads of semi-precious stones, and resorted to imitations made of glass and faience. This is why the numerical domination of glass and faience beads is so striking. Such a result, however, is normal for a small provincial settlement with the majority of inhabitants belonging to a lower social class.

Throughout the millennia, blue and green hues were the dominant colors of faience beads and other objects such as amulets. The reason for this preference is likely color symbolism: green is the color of regeneration (Germer and von Grumbkow 1997:26) and was considered as being calming and appeasing (Quirke 2015:106). This is why it is often found in the jewelry of mummies. Color can also have a magical aspect. Precious materials, particularly those with distinctive colors or appearance, were widely believed to have apotropaic or healing qualities in Ancient Egyptian and Roman cultures. Consequently, the high number of glass and faience beads at Athribis may also derive from a wish to imitate apotropaic qualities of semi-precious stones because even imitations could have been believed to have the same properties as the materials they copied (*see* Swift 2021).

Thus, one reason for the relative popularity of expensive carnelian beads is their natural reddish color because red was an apotropaic color (Grimm and Schoske 1999:32). Red also symbolized combativeness in a positive sense (Quack 2022:33). It was, therefore, selected for use in objects of personal, often bodily, use (Swift, Stoner, and Pudsey 2022:113). Moreover, red is also connected with the sun, the omnipresent source of life, because red symbolizes the cardinal direction "south" due to the fireball of the sun (Spalinger 2008:242-243). Perhaps this is one reason why carnelian beads are most often given a globular shape. If so, beads with a magical connotation were considered as apotropaic media in their own right (beads in primary function), whereas beads as part of amulets would serve in a secondary function.

The wide variety of beads at Athribis in terms of material, production technology, shape, and color, clearly indicates that this settlement – even though far from the political and economic centers of Egypt – was connected to the wider world of the Roman empire's eastern territories including the Mediterranean and the harbors on the Red Sea, and even beyond. The materials and shapes of the Athribis beads are part of a common "bead culture" that ranged deep into Nubia, all the way up to the 4th cataract. This seems to have continued in the early medieval period, given the long duration of many bead types.

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ENDNOTES

1. For an overview and comprehensive list of the publications by the project, *see* Athribis-Projekt (DFG) | Universität Tübingen (uni-tuebingen.de).

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