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MEDIEVAL TRANSCULTURAL MEDIUM: BEADS AND PENDANTS FROM MAKURIAN AND POST-MAKURIAN DONGOLA IN NUBIA

PRELIMINARY ASSESSMENT

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Abstract: Dongola between the 6th and the 17th centuries AD experienced several cultural shifts from a post-Meroitic center through a capital city of the Christian kingdom of Makuria to a post-Makurian settlement with encroaching Islam. Beads have always constituted a traditional element of personal adornment in Nubia and their production, use and circulation did not cease despite religious, political and social changes in the medieval period. On the contrary, beads and pendants preserved their ornamental and apotropaic functions and quite probably took on new roles. Moreover, a material analysis of preserved beads reveals the potential of this small medium in tracing interaction among medieval cultures.

Keywords: beads, glass, faience, medieval, Makuria, Nubia, material culture

INTRODUCTION

Nubia has long been perceived as a link between the Mediterranean and Near Eastern world on the one hand and indigenous African cultures on the other. However, despite the diversity of bead material found in Dongola,[1] one of the most important and complex centers of Christian and Islamic Nubia, this connection is not always clearly visible.

More than three hundred beads and pendants were documented between 1971 and 2011 by a Polish team from the PCMA excavating the medieval site of Dongola (headed successively by Stefan

[1] In a letter describing a visit with his sister Margaret to Old Dongola in 1948, Vincent Eyre wrote: "At Old Dongola, at one time a large and important town but now a ruin largely buried by sand, but with the great fortress church of Christian times perfectly preserved, we climbed the three stories to its roof to get a marvelous view of all the surrounding countryside, and then spent a couple of hours searching the ground over a wide area on our hands and knees collecting antique beads. With the assistance of the custodian of the site, a policeman and several members of the steamer's crew we managed to collect enough to provide Margaret with quite a respectable sized bracelet" (SAD.693/2/15, cited in Żurawski 2001: 136). The personal correspondence of V.E.F. Eyre, born in 1914, in 1938–1955 in the Sudan Service, is in the holdings of the Sudan Archive at the Durham University Library.

Jakobielski and Włodzimierz Godlewski).[2] They are associated with layers of Christian Makurian (6th–14th century) and Islamic post-Makurian (15th–17th century) date. In the following discussion, a general chronological division into two main periods has been adopted. Within each period, the beads have been classified by material. Nevertheless, the transition between the two periods was long and complex (Godlewski 2004), an opinion that the bead assemblages apparently bear out. Some bead types and the use of certain materials appear to extend across the two phases, despite cultural borders and religious change. Indeed, beads and pendants were a medium that was associated with religious symbolism and practice across all periods.

Beads provide evidence for varying trends and influences over a long and rich history, allowing cultural contacts to be traced when studying Dongola from a broader territorial and chronological perspective. Although in a majority of cases beads are preserved in very generally dated contexts, as the smallest objects of material culture and art, their study still provides an important contribution to the history of cultural shifts and interaction.

BRIEF HISTORICAL AND ARCHAEOLOGICAL OVERVIEW OF THE DONGOLA SITE

The historical and archaeological record bears witness to the changes that occurred in Dongola and the influences local society was subjected to. Christian missionaries probably came to Makuria from Constantinople. Sometime in the 570s a bishopric was established at Dongola. After the Muslim conquest of Egypt and the Near East, the isolated Nubian Church maintained contact with the monophysite Coptic see of Alexandria. According to a 7th century bilateral peace treaty called the *baqt* (651), the Arabs were to provide Nubians with diverse goods in exchange for slaves.[3] For over six centuries this treaty allowed Muslims and Nubians the freedom to travel through each other's territories until the *baqt* was finally abandoned in 1172 (Godlewski 2004: 213).

The foundation of Dongola on a fortified hilltop (Kom A = SWN[4]) above the Nile, with its stone-and-mud-brick wall enclosing the citadel, seems to date from the Early Makurian period, possibly the late 5th or early 6th centuries AD. The Church of the Granite Columns (RC1) dates between the 9th and the beginning of the 11th century AD. On the site of

[2] Material in storage at the site, from excavations of W. Godlewski conducted from 1990 through the present, was studied in 2011. A small collection from the excavations of S. Jakobielski between 1971 and 1992, stored at the Christian Art Department of the National Museum in Warsaw, was examined there in 2010; the archaeological context of most of the beads was identified thanks to access to archival documentation kindly granted by the respective mission directors. Some objects stored at the Sudan National Museum in Khartoum were included based on documentation presently at the Polish Academy of Sciences in Warsaw.

[3] The earliest sources regarding the *baqt* come from the 8th century AD, a hundred years after the treaty was reportedly concluded.

[4] For an explanation of site coding at Dongola, see below, page 697.

Building X and the later Church of the Stone Pavement, the Cruciform Church (CC) was raised after 836; this building has Syro-Palestinian parallels (Godlewski 1990; 2004: 210; 2008: 263).

To the north, outside the citadel and cathedral complex, a vast urban housing area was uncovered (PCH houses). The buildings go back to the 7th–8th century. In the 9th century, an impressive throne hall was erected east of the citadel (Godlewski 2004: 212). Buildings of the 13th century on the riverside of the citadel (C) may have served as magazines for the local harbor (Obłuski, forthcoming).

Out of town there were two monasteries, one on Kom D (DM) with a church (DC) originating from the 7th century (Jakobielski 2001: 20–21) and another one on Kom H, comprising a large compound with burial grounds and including a Central Building (H-CB) and Monastery Church (HC), which were raised in the 7th century (Jakobielski, Martens-Czarnecka 2008). The monastery functioned through the end of the Kingdom of Makuria in the 14th century. In the course of its development it accrued various edifices, such as the Northwest Annex (NW) erected in the 11th–12th century, the Southern Building (NW-S) from the 10th and 11th centuries, the Southwestern Annex (SW-E) that was not earlier than the 10th century and the Southwestern Building (SW), which may be dated to the 8th century,

Increasingly poor relations with the Arabs of Egypt, culminating in the Mamluk raids on Nubia and siege of Dongola in the 13th century, led to the fall of the Makurian kingdom. In 1317, the throne hall was turned into a mosque. In 1323, a Muslim member of the ruling class became king of Makuria. In 1364, the royal court moved out of Dongola.

Residential structures (SWN houses) appeared on the citadel and in the ruins of the Cruciform Church (CC) and around the cathedral (Godlewski 2004). These architecturally distinctive buildings represented post-Makurian settlement in the 17th century when Dongola was occupied by both orthodox and ecstatic Muslim sects (El-Zein 2004: 240–241).

Religious, monastic and residential architecture richly decorated with wall paintings flourished during the Makurian period, despite the kingdom being like an island surrounded by diverse Muslim political entities (among others, Martens-Czarnecka 2001; 2010; Jakobielski 2008; Godlewski 2008). A painted dance scene, unique in that it combined indigenous African dance styles, masks and musical instruments with Arabic clothing, is particularly telling, as it exemplifies the diversity of Nubian society in the 12th–13th centuries AD (Martens-Czarnecka 2011: 234–236 and Cat. 109). Nubian wall painting, especially the scene with dancers wearing beaded masks, necklaces and other adornments, is an excellent base for beadwork studies.

A distinctive Nubian style in art and architecture was created by combining Syro-Palestinian, Byzantine and/or Coptic, Arabic and African elements with indigenous Nubian characteristics and local materials. The beads from Dongola, made from both local and imported materials, now found as separate examples, could have very well expressed this specific Nubian style.

MAKURIAN BEADS AND PENDANTS
(6TH–14TH CENTURY)

The use of earlier Nubian types, accompanied by the introduction of new trends and new religious symbols, was observed in the Makurian bead assemblage from Dongola and from other Christianized Nubian sites, such as Debeira West (Shinnie, Shinnie 1978), Arminna West (Weeks 1967: 69–70; Trigger 1967: 84), Qasr Ibrim (Adams 1996: 181–182; 2010), Meinarti (Adams 2001: Pl. 10a–f; 2002) and Soba (Shinnie 1955; Allason-Jones 1991; 1998). The beads and pendants found at the site were made of organics (marine shells, ostrich eggshell, wood, bone), stone and, last but not least, man-made materials (clay, glass). They are presented below in the order of classification by material.

MARINE SHELLS

Although cowry shells were a popular fertility symbol in earlier Nubian cultures, they seem to have been particularly numerous in the Christian period. Shells of *Cyprea moneta* and *Cyprea annulus* species were perforated either by drilling or by cutting off their upper part, thus producing greater or smaller hole openings [***Fig. 1:142, 179, 190***]. Excellent examples of cowry beadwork in the form of decorated masks survive in a wall painting depicting a dance scene from the monastery in Dongola (Martens-Czarnecka 2011: Cat. 109).

The larger and longer *Conus* shells [***Fig. 1:116, 173***] were perforated by cutting off the cones, whereby they could be suspended as pendants. A *Nerita* shell was perforated through the body whorl and strung on a piece of leather thong [***Fig. 1:129***]. All the recorded shells represented species of Red Sea origin.

OSTRICH EGGSHELL

Beads made of ostrich eggshell, a material widely used for the purpose in Africa (Simak, Dreibelbis 2010: 23–26) and in earlier Nubian periods as indicated by the archaeological record, were seldom found in Makurian-period contexts [***Fig. 5:39***].

Ostrich eggshell would have been collected traditionally from nests or picked up casually. Ostriches were still being hunted in the environs of Dongola in the 19th century (Żagiel 1884: 275, cited in Żurawski 2001: 124).

BONE, WOOD AND STONE

Elephant ivory used for elongated beads [***Fig. 1:164, 171***] from contexts dated to the 13th–14th centuries AD indicated contacts with areas to the south of Makuria.

A 12th-century wooden plaque with the representation of a warrior saint, 16,4 cm high and pierced with a hole for suspension and hence probably worn around the neck, was found in the monastery on Kom H (Jakobielski 2001: 46, Pl. LXIV,4). As in other cultures, pendants made from both precious and more ordinary materials represented religious symbols. One example is a Greek cross pendant made of bone with incised lines (see catalogue below, ***No. 102***) or a stone object in the shape of a cross pendant, which was found on the surface at another of Dongola's monasteries (DM). The latter was most probably made of light green peridot, known as olivine [***Fig. 3:26***]. The only known source of this material is St. John's Island in the Red Sea (Harrell 1999: 115–116).

Other stone artifacts included barrel-shaped or faceted beads made of carnelian

[*Fig. 3:23, 149*], onyx [*Fig. 3:5*], and quartz [*Fig. 3:31*]. A few rock crystal beads were discovered in early Christian context in the Church of the Granite Columns [*Fig. 3:1*]. The clarity and transparency of this material was especially valued in religious spheres as a symbol of purity (Dubin 2009: 77; Tait [ed.] 2006: 208; also Inv. 08.202.27b from the Metropolitan Museum of Art).

A flat droplet-shaped pendant of transparent stone, its base and top pointed, can be attributed to the early Makurian phase. Broken off at the threading hole, it was subsequently drilled through lengthwise to be reused as a bead [*Fig. 3:2*]. A small white quartz conical bead is an early Makurian form [*Fig. 3:29*]. Most of the stone objects from the Makurian period were pierced only from one end in, giving a conical section of the perforation and grooves left by a drilling tool around the larger opening. This is a continuation of a technique that was popular among ancient Egyptian and Nubian craftsmen. However, a flat trapezoid pendant made of red chalcedony or carnelian, found in a Makurian context, was drilled from both ends [*Fig. 3:141*]. It was decorated with incised and grooved lines running along the edges on both sides. This form occurred also in a post-Makurian context, but made of faience (see below, 685).

CLAY

In Nubian tradition clay became a common material for bead production in the Christian period. From the 11th century on, many roughly spherical clay beads appeared in Dongola and their use continued through the post-Makurian period [*Fig. 2:3, 6, 19, 22, 94, 95, 118, 125, 128, 154, 165*]. They were hand-formed into irregular spherical, oblate and biconical shapes. Perforations were made by simply a stick through the bodies before drying. The beads were then left to dry or occasionally fired. Reddish ochre, now mostly worn off, could be observed on some beads.

A clay bead ('seal'), most probably of kaolin, had an incised bird motif, sometimes regarded as a Christian symbol, and could have been incorporated into a necklace [*Fig. 2:8*]. A Greek cross was incised after firing on a ceramic disc, a hole being made in the center [*Fig. 2:74*].

DECORATED GLASS

The early Islamic glass bead varieties with trail-decoration appeared between the 9th and 14th centuries. They are found in Egypt, other African countries, the Near East and are presumed to have been manufactured in some of these regions (Spaer 2001: 32; Kröger 1995: Nos 288–299).

The **feather-trailed** bead was decorated by winding a thread of light turquoise glass three revolutions around a black base bead, and dragging the applied thread two times up and two times down while the glass was still soft. They are known from Soba (Allason-Jones 1991: 145, Fig. 70, Nos 252–254) and, in somewhat similar form, from Fustat (Scanlon, Pinder-Wilson 2001: Pl. 47f, g, context dated to the 8th–9th century). The half bead is the only example of this type found in Dongola [*Fig. 7:4*].

Only one white **spiral-trailed** dark navy blue bead has been recorded so far [*Fig. 7:20*].

Many early Islamic **mirror-trailed beads** were decorated with thin white, bluish or multi-colored stripes [*Fig. 7:7, 12, 111, 114*, and *122*]. They were usually formed from discs of concentric trailed patterns or cut from a concentric cane. Such a disc was rod-pierced at its center and folded over the

rod into a spherical shape; most had one dilated perforation opening. The trails were dragged outward and inward to form the mirror pattern (Spaer 2001: 104). Other sections, decorated by a few sets of trails, were joined into a longitudinally multi-seamed bead, fused around the rod and dragged [***Fig. 7:122***]. Most mirror-trailed beads appear to be of 10th–12th century date, with a concentrated occurrence in the 11th century. Beads of this kind are found throughout the medieval world, from the Middle East through different parts of Africa to Europe, in the 13th and 14th centuries (Dziedzic-Dzierzbicka 2007: 233, from Cemetery A at Naqlun, Egypt, second half of the 11th through late 14th century AD; Spaer 2001: 104; Panini 2008; Liu 2012; Robertshaw *et alii* 2010: Fig. 2, Zimbabwe; L'vova 1997: Pl. 13, from southern Russia, 11th–12th centuries AD).

A single example of an **'eye'-bead** represented a separate glass-bead category [***Fig. 7:28***]. The opaque yellow wound bead body was decorated with five embedded slices or 'eyes'. They were made from mosaic drawn-cane cross-sections with radiating motif. The 'eyes' consisted of four concentric rings. The outer one was divided into white and black fields. Inside, it was followed by other rings: red and yellow with a green spot in the center. Islamic vessels and tiles from Iraq, dated from the 9th century, were made of similar mosaic cane sections (Whitehouse 2001: Nos 61–63).

The presence of beads from early Islamic glass centers at the site of Dongola is not surprising in light of the *baqt* treaty. In the middle of the 11th century, a Persian poet and traveler Nasir-i-Khusraw mentioned a trade in beads in Nubia: "The country of the Nuba stretches south of Aswan and has its own king. The natives are a people of black complexion and are Christians. Merchants go there and sell beads (*kharaz*), combs (*amshāt*) and coral (*al-marjān*) and from there they import slaves (*raqīq*)" (in Vantini 1975: 233). From Cairo's Geniza archive comes information about Jewish manufacturers and stringers of beads, perforators of pearls, persons processing corals and merchants engaged in trading beads (*kharaz*) of Mediterranean and Indian origin in the 12th century (Goitein 1967–1993: 154; Goitein, Friedman 2008: 16, 28, 207; Meyer 1992). Although the manufacture of glass appears to have been favored by Jewish craftsmen, there was no exclusiveness. In Old Cairo there were also Christian glassmakers and Copts were known as manufacturers of glass weights (Goitein 2003: 52).

Interestingly, the Dongola collection lacks beads with longitudinal non-continuous zigzag designs, the so-called "Fustat" beads, fused from eight (rarer six) trail-decorated, spirally-twisted cane sections, around a bead-making rod. They were very popular in Egypt and beyond, and were most probably made in Fustat in the 9th and 10th centuries (Pinder-Wilson, Scanlon 1987; Scanlon, Pinder-Wilson 2001; Spaer 2001: 103).

MONOCHROME GLASS

Monochrome glass beads made in various techniques were found in abundance in all historical phases at the site of Dongola. Some of these beads were drawn with constricted ends [***Fig. 5:215***], others were given a short and standard tubular shape with heat-rounded ends. The latter form was characteristic of the late Christian period at Qasr Ibrim (about 1200–1400, Adams 1996: Pl. 51a,b). They were also found at Qustul, strung together with drawn and

cut opaque orange long tubes (Chicago, Oriental Institute Museum, Inv. 21575, 21837, personal observation). Such drawn orange tubes have been found in Dongola out of archaeological context [***Fig. 5:217***].

Although crucibles for glass bead production (Adams 1977: 373) as well as raw glass lumps were found at some medieval Nubian sites (Ward 1998), at Dongola the only evidence for glass processing on site is a lump of blue-green raw glass.

Some of the monochrome drawn glass beads found at Dongola might have been imported from the Indo-Pacific region [***Fig. 5:25, 40–41, 135, 140, 183, 196***] and could have traveled through the Red Sea ports of Quseir al-Qadim and Aidhab via Yemen (Meyer 1992: 103). The latter route was also mentioned by an Arab poet, geographer and traveler from Valencia, Ibn Jubayr (1145–1217): "While traveling, we wish to count the incoming and outgoing caravans, especially those coming from ʻAydhāb loaded with Indian goods, shipped from Yemen to ʻAydhāb, but we could not" (in Vantini 1975: 294). El-Maqrizi (1364–1442) mentioned in Chapter XXXVII the decreasing importance of Aydhāb in the Indian trade by the beginning of the 15th century AD, when Jedda became the biggest Red Sea port (in Vantini 1975: 651).

POST-MAKURIAN BEADS AND PENDANTS
15TH–17TH CENTURY

The transitional period between the late 14th and the 15th centuries is naturally expected to reveal closely entwined Christian and Islamic influences in the material culture, beads notwithstanding. The use of clay beads and drawn glass beads continued. Many beads and one pendant were made of faience. A single example was made of a plant seed. A few glass beads were identified as being of Hebron and European provenience.

PLANT SEEDS

From late Dongola comes a bead made of a white lupine seed (*Lupinus albus* L. subs. *termis*; Arabic: *Baqila shami*, *Baqilly masri*, *Tirmis*, in Sudan: *Turmus*) [***Fig. 1:119***]. White lupine is a pulse cultivated in the Mediterranean, Egypt, Sudan, Ethiopia, Syria, etc. In archaeological contexts in Egypt, it is mostly found in layers dated to the Roman period and later (Cappers 2006: 98). The desiccated sample from Dongola, pierced for a thread, is of much later date. Pulses in general are mentioned among traded items imported to Makuria in the *baqt* and were uncovered at many Christian-period and later sites in Sudan, e.g. Nagʻel-Scheima (Hoff, Germer 1998: 548; Anderson 2004).

CLAY

Apart from the spherical clay beads inherited from the earlier period (see above), there was a circular pendant of clay with attached fastening [***Fig. 2:101***]. It was decorated with more or less intentional incisions, making for a so far unidentified sign.

FAIENCE

Faience beads continued to make up a large percentage of the bead assemblages, as in most other periods of Nubian history. New types appeared along with the coming of Arab tribes in the 14th century. These were large blue rings and oblates made of

faience. The examples from Dongola are of irregular, short and standard annular shapes [***Fig. 4***]. They were hand-folded and the body cores were blue-glazed (although in most cases the glaze has worn off). Sections can be observed, as many broken pieces were found. The beads are comparable to faience beads from Fustat, Nishapur and Siraf, all dated to the 8th–12th centuries (Francis 1989; 2002: 20–22, Fig. 10; Lankton 2003: 82, Fig. 8.4), and beads from Merv (Turkmenistan), dated to the 9th century (British Museum, No. 2009, 6016.306). Many such "donkey beads", as they are called, were excavated from 12th–14th century contexts in the Islamic-period Merchant Quarter in Bahrain (Frifelt 2001: 61, Pl. 4). None were recorded from late Ayyubid–Mamluk period (13th–14th centuries) at Quseir al-Qadim and they are not present in the collection from the excavations kept at the Oriental Institute Museum in Chicago, which the author had the opportunity to examine.

Large blue faience rings appear in Dongola in layers dated from the 13th and 14th centuries onward, most probably coinciding with growing Arab migration into the valley of the Middle Nile. Such beads are known from other Nubian sites: Bab Kalabsha (Chicago, Oriental Institute Museum, Inv. OIM 42044, 42045, personal observation), Serra East (Chicago, Oriental Institute Museum, Inv. OIM 24665, 24802, 24724, personal observation) and Dar el-Arab (British Museum, SF 357, personal observation). One bead at Kulubnarti was dated to the Terminal Christian period (1400–1500) and another to the post-Christian period (1500–1800) (Adams, Adams 1998: 67). Of uncertain date is "a single large bead of green faience, discoidal in shape, mounted on a fine leather thong. Probably, this was a protective amulet against the evil eye" (Adams, Adams 1998: 66).

A broad, flat, trapezoidal form of pendant found in a post-Makurian context was made of blue faience [***Fig. 4:92***]. It was decorated with grooved lines on one side.

MONOCHROME GLASS

The Fustat, Tyre and Damascus glass industries disappeared by the 15th century, but by that time, the 14th century at the very least, a new glassmaking center had made a mark for itself in Hebron in Western Asia (Spaer 2001: 143). In a few centuries the glass beads of Venice and Bohemia came to dominate the market, but in regions still controlled by Muslim traders, beads from the Muslim world remained important. By the mid-18th century Hebron-made glass beads were being taken by both Jewish and Arab traders to Cairo. From there and up the Nile they went to Shendi to be sold throughout eastern Sudan or to Asyut and across the *Darb el Arba'in* to Darfur, where they were called in local Arabic *mongour* or *harish* (Francis 1990: 25). At the beginning of the 17th century, trade flourished between the Islamic state in Darfur and Egypt via the *Darb el Arba'in* and across the savannah of central Sudan to West Africa, following the pilgrimage route to Mecca (El-Zein 2004: 240).

Some Hebron-made glass beads were found in Dongola [***Fig. 6:157, 159, 161, 181, 192, 194***]. The opaque, rather crude, furnace-wound rough glass bears visible traces of winding, which run perpendicular to the axis of perforation. The shape of the perforation is conical. The beads are of barrel, small oblate and tubular shape and occur in yellow, green and rarely blue colors. Opacity is the result

of the use of salts (alkalis) from the Dead Sea (Arkell 1937; Francis 1990: Pl. V-D). They appeared in Dongola in the harbor structures, but in layers dated to the 16th–17th centuries, by which time the harbor had ceased to be of any importance. Nevertheless, the Hebron-made beads could have already been brought via Egypt at this time. At Shendi they outnumbered Venetian beads (Burckhardt 1819: 302). They were highly esteemed in Sudan as waist beads until the 1930s. Hausa traders brought them to Kano in Nigeria (Simak, Dreibelbis 2010: 153).[5]

Other rod-formed, wound beads with an unusually glossy shine [***Fig. 6:123, 216***] were very common finds at the site of Quseir al-Qadim in the Late Ayyubid and Mamluk period (13th–14th centuries) (Meyer 1992: 195).

Later on, with the advent of the Venetian glass bead trade, many small monochrome beads (seed-beads, *conterie*) arrived in Africa (Trivellato 2001: 77). A tiny bead from Dongola may represent such *conterie* [***Fig. 5:145***]. In the Middle Ages, glass beads from Venice were sold in the Levant, especially in Aleppo and Alexandria. Local dealers and Muslim traders would distribute them then in Africa and send them off to the East Indies (Trivellato 2001: 64). Travelers' accounts show that at the end of the 17th century shipments of *conterie* (glass beads and small monochrome drawn glass seed-beads in particular) reached Egypt and then were distributed along the Nile River into Abyssinia or taken to India (Trivellato 2001: 77).

A slightly faceted opal-colored bead, most probably cast in a mold, came from a post-Makurian context [***Fig. 6:168***]. Rod-formed long tubular beads were found in late contexts dated to the 16th–17th centuries [***Fig. 6:110, 132, 151, 192, 218***].

POLYCHROME GLASS

One of the 'Venetian' beads from Dongola appears to be of a 'chevron' type [***Fig. 5:131***]. The chevron or star bead is also called a *rosetta* in Italian, with the term first appearing in the inventory of the Barovier Glass works in Murano in 1496. They were also produced by the Dutch during the late 1590s and over the next hundred years (Dubin 2009: 117, Pl. 102, Figs 7, 8). Two chevron beads of this type were once displayed in the, respectively, Egyptian and Islamic Museums in Cairo as Roman beads, "thus repeating Beck's famous error" (Francis 1980: 15; Beck 1928: 65, Fig. 66).[6] Among Egyptian examples, one with cut ends has been recorded from Fustat (Francis 2002: 26, Fig. 16). A cane of a bead similar to the Dongola example is in the collection of the Petrie Museum (UC 22181).

A special mold-and-drawn technique from a tubular, multicolored, mosaic cane is used to make chevron beads. The cane is made by shaping a glass gather in a tapered mold with corrugated sides, usually of twelve points. Such a concentric drawn tube consisted of from four to seven layers in a combination of colors. Next, the multi-layered gather is drawn into a cane, sectioned into beads and finished in

[5] Production in Hebron appears to have ceased sometime between 1850 and 1870; it seems to have been replaced by secondary processing of glass bottle waste (Francis 1990: 20–26).

[6] The same mistake is made in a catalogue of Egyptian jewellery at the Pushkin State Museum of Fine Arts (Hodjash 2001: 69, Cat. nos 446, 447).

many ways. The ends of chevron beads are reduced, usually faceted, exposing the interior layer. In order to be "chevron beads", the cane elements must be visible when the bead is viewed in profile. Otherwise they are "star beads" (with flat ends) or "*a speo* star beads" (heat-rounded on a skewer beads). The chevron found at Old Dongola represents a unique type, so called "**a speo star/flower rosetta**" produced in the 17th century (J. Allen, personal communication). Other *a speo* beads have five layers, with a blue translucent (usually green) base. The bead from Dongola has seven layers including a translucent outer layer, followed by white, red, white, translucent red, white and translucent red. The bead is unusual for having seven layers, of which the base and third layer appear to be translucent red. According to Jamey D. Allen, translucent red is a very unusual color for any beads from the 15th through the 17th century. The tone is rather madder-red — probably from manganese — more typically used for violet, but that can be modulated to a more reddish-brown tone; and when more saturated passes for "black" (J. Allen, personal communication).

Other beads from the Dongola assemblage seem to be of European origin. A **hollow bead** of clear glass with a transparent body was decorated with a few blue and white stripes running along its axis [***Fig. 5:14***]. There are clearly visible darker dots at the beginning and end of the trailed lines. The bead was made from a tube or cane, thin-walled with a large perforation channel.

USES AND LIKELY USES OF BEADS

Almost all the beads from Dongola were found as single items in diverse layers spread across the site. However, in one cache, which has not been illustrated or described in detail, a very opulent bead necklace (see catalogue below, ***Nos 32–38***) was found at the bottom of a ceramic pot (Żurawski 1994). Discovered just under the pavement of a leveling stratum of the Church on Kom D (DC), it was interpreted as a 7th century **bead foundation deposit**. The necklace consisted of one hundred beads and comprised glass in many colors, faience, shell, bone, stone, fruit (seed?) and nacre.

An 'eye'-bead, like the one from Dongola, was found in a post-Makurian burial context together with pear-shaped quartz beads (common in early Makurian assemblages). Beads of this kind may have been treated as **heirlooms** or as resuded items.

Peter Francis, Jr. (2002: 20–22) noticed that in Nishapur and Siraf large blue faience beads did not have value as traded items, but served as **amulets** to protect animals and children against the evil eye. Faience and carnelian pendants may resemble a kind of **talisman** worn on the arm and known at least since the Christian period. In Islamic tradition it was in the form of a small leather container for Koranic verses (*hidjab*). In East Africa similar talismans are worn at the neck. Talisman beads would reflect a long tradition, present independently of political and religious changes in Dongola.

Clay beads may have been used as **prayer beads.** This use, based on a parallel observation of Coptic tradition in Egypt, has been

suggested for finds from Soba East (Allason-Jones 1991; 1998). This explanation for the exceptionally widespread presence of these beads at sites such as Makurian Dongola is not surprising. In medieval Europe, the concept for the rosary might have derived from the Arabs as a result of the Crusaders' experiences or through the Muslim presence in Spain (Teichner 1997; Dubin 2009: 77, 80). Wooden and clay beads replaced knotted cord rosaries among people in many regions of Europe in the 11th century. Rosaries made of precious stones and metals, coral and jet, became more popular by the late 14th century (Dubin 2009: 77). And while Nubian wall paintings provide an important research resource for the study of elite jewelry, Nubian iconography lacks prayer beads.

Clay beads in Dongola were collected from a chronologically broad range of contexts, but on the whole they were found in post-Makurian layers. Hence, a Muslim prayer-bead function for them is not to be excluded. A reference to prayer beads appeared in Ibn al-Khatib's account in the *History of Baghdad*, concerning the arrival of Byzantine ambassadors to the Abbasid capital in 917. Maqrizi mentioned a Cairene from the end of the 13th century "who lived an ascetic life, always carried a *masbaḥa* (beads) in his hand" (in Vantini 1975: 678).

Examples from Nubian Debeira West (Shinnie, Shinnie 1978: 81) have also been interpreted as **abacus beads**. Such a function for beads has been observed in Ethiopia: "When we entered, the *melek*'s cashkeepers were counting the money they were receiving from the peasants, and settling their accounts with the assistance of their strings of beads" (Hoskins 1835: 207).

An ethnographic example from north-eastern Africa shows strings of beads as collars hung by Nuer people around the necks of cattle (Sparks 2005).

More sophisticated early Islamic glass trail-decorated beads, which were found in the Dongola churches, seem to have had purely decorative functions. A representation of cowry-shell beadwork in a painted dance scene at the Dongola monastery depicts dancers wearing masks made of shells, displaying the intrinsic beauty of such objects of **adornment**. Cowry shells were also depicted most probably in the dancers' necklaces from the same scene (Martens-Czarnecka 2011: 234–236 and Cat. 109). Cowry shells were imported from the Red Sea coast and from the Indian Ocean region, and were used as beads, but also extensively for beadwork on leather and textiles. At one time, they were also a form of currency across large parts of south Asia and Africa, playing a major role in the slave trade, but in Nubia they do not seem to have been attested in this function (Adams, Adams 1998: 135).

Theodore Krump's records from 1700–1702 mentioned slave girls of the Sheikh of Qarri in Sennar wearing beads of Venetian glass together with agate and coral around their necks (Edwards 2004: 271). In the 19th century, Genoese and Venetian beads were traded in New Dongola (Hoskins 1835: 184, 187) and elsewhere in Sudan (Hoskins 1835: 61, 88; Taylor 1854: 386–388; Moorehead 1961: 157–160; Burckhardt 1819: 32, 273, 301–303).

All photos and design of the plates on the following pages by the author except where noted otherwise.

Fig. 1. Beads and pendants made of organic materials: shell (116, 129, 142, 173, 176, 179, 190) , bone (11, 164, 171), and lupine (119) (numbers refer to the catalogue)

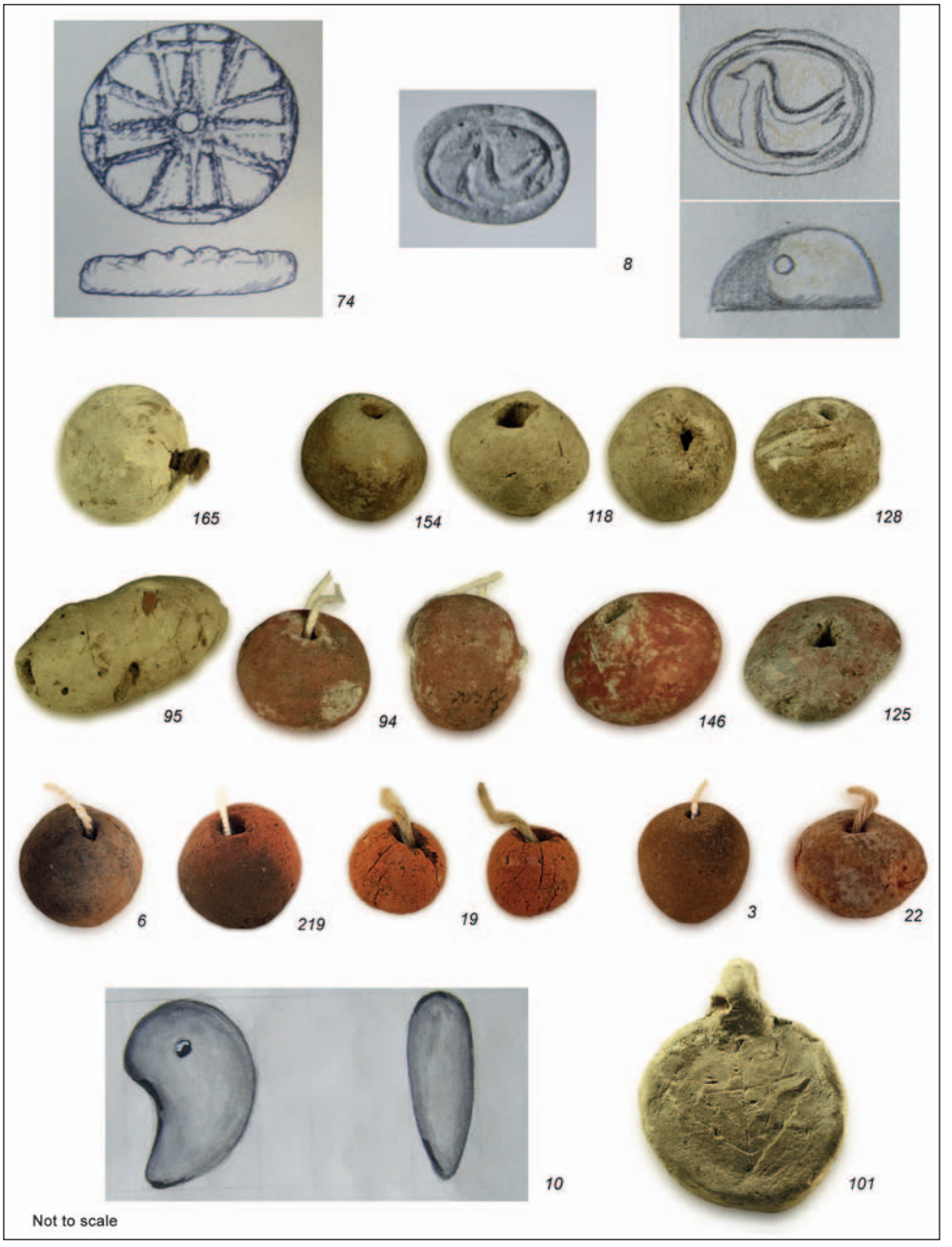

Fig. 2. Beads and pendants made of clay (numbers refer to the catalogue) (Photos Cat. Nos 8, 10, 74 from PCMA Mission archives)

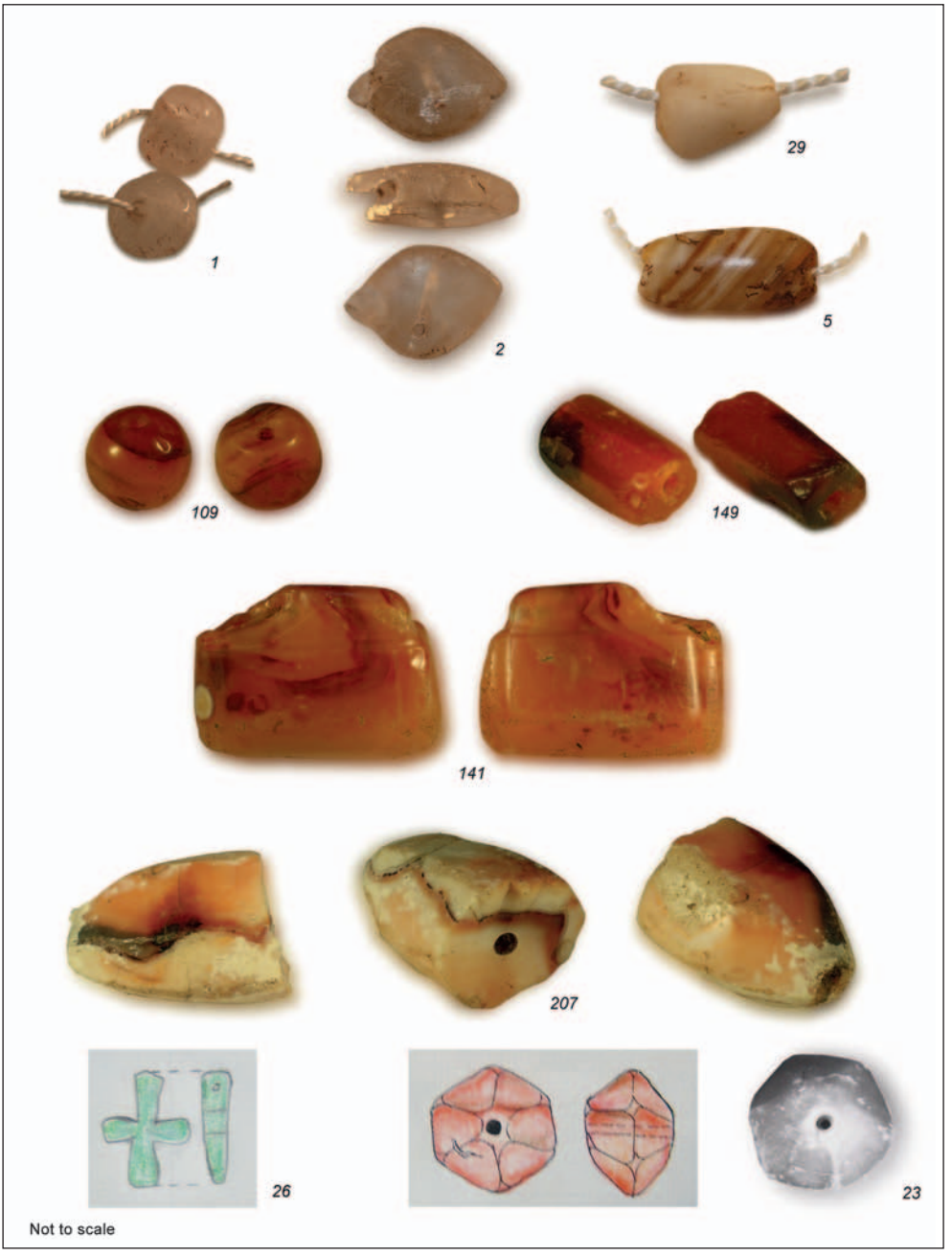

Fig. 3. Stone beads and pendants (numbers refer to the catalogue) (Photos Cat. Nos 23, 26 from PCMA Mission archives)

Fig. 4. Faience beads and pendant (numbers refer to the catalogue)

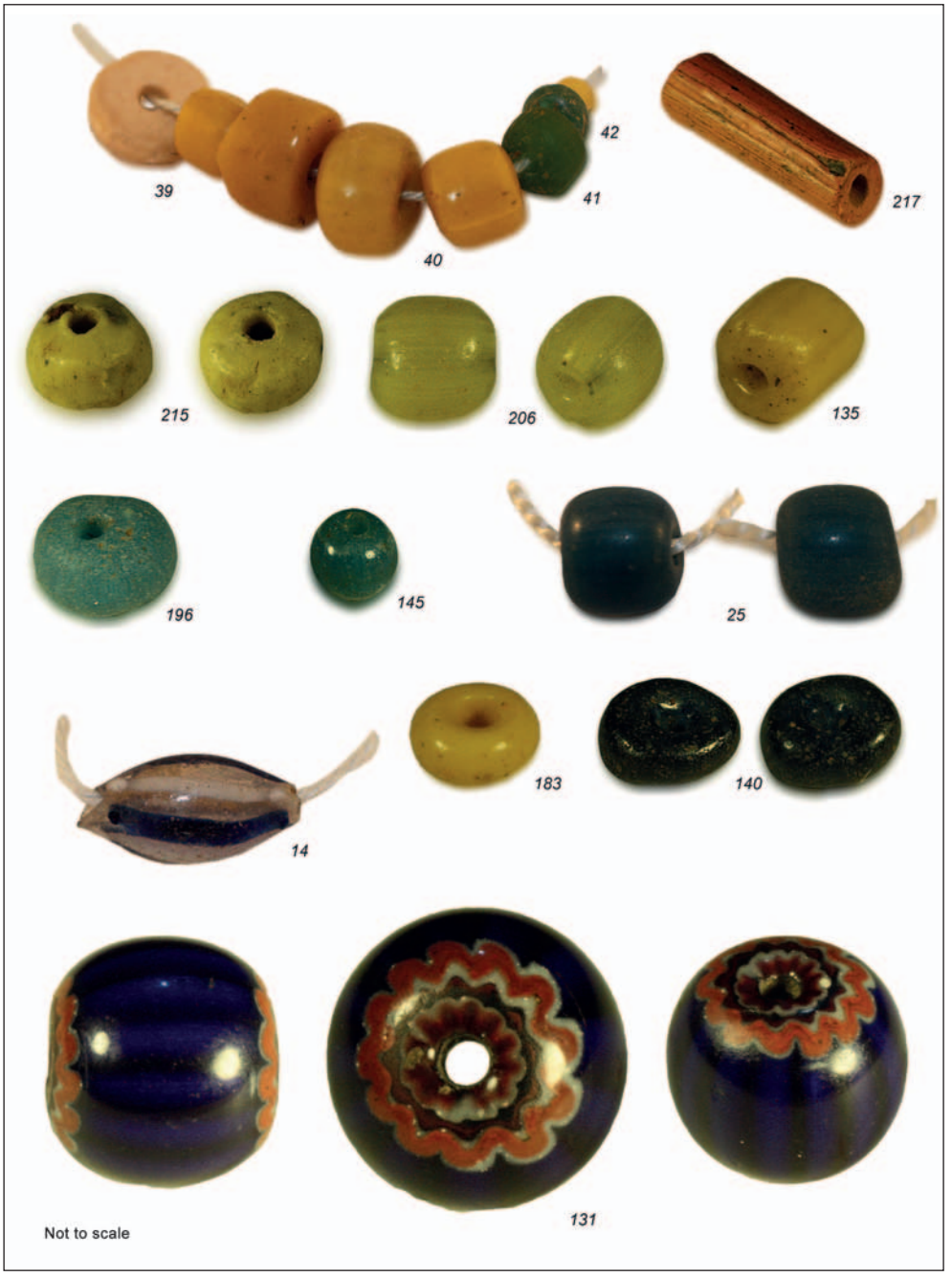

Fig. 5. Monochrome and polychrome drawn glass beads and other (numbers refer to the catalogue)

Fig. 6. Monochrome wound glass beads and other (numbers refer to the catalogue)

Fig. 7. Trail-decorated glass beads and an 'eye'-bead (28) (numbers refer to the catalogue) (Photos Cat. Nos 4, 12, 20, 28 from PCMA Mission archives)

CATALOGUE

The Catalogue lists in tabular form the shape, material, quantities, measurements, archaeological context and additional data on the beads found in Dongola in Polish excavations between 1971 and 2011. All dimensions are given in millimeters. The objects illustrated in the plates are identified by their catalogue numbers.

Official site abbreviations used in the table are as follows:

Citadel – SWN (formerly Kom A): Buildings B.I–B.V and post-Makurian houses H.1–H.24
Citadel – NW – houses of Makurian and post-Makurian date
Citadel – C.1 – Late Makurian buildings B.VI and B.IX, post-Makurian houses
Citadel – AX – post-Makurian houses
CC – Site B – Cruciform Church and post-Makurian houses
NWC – Northwest Church
RC – Site B – Church of the Granite Columns and post-Makurian houses
Site A – platform on the northwestern side of the citadel hill (sectors)
Site D – DC Church, DM monastery buildings and cemetery
Site H – Monastery: H.C – church, H.CB – central building, H.NW – Northwest Annex; H.SW – Southwest Annex
Site P – Town – Makurian houses A and B, house PCH.1

Codes used in the table for marking the present location of the studied beads:
MNW – National Museum in Warsaw; SNM – Sudan National Museum in Khartoum

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 3	1	Barrel (2)	Stone: rock crystal transparent	12.80 / 10.5 / 2.5, 2.6 12.65 / 9.9 / 2.5, 2.6	D.10/71	RC: Site B	Early Christian	MNW 235121
Fig. 3	2	Flat droplet (1)	Stone transparent	15.29 / 10.9x4.9 / 1.6 – broken; 0.7 – secondary perforation through body	D.11/71	RC: Site B	Early Christian	MNW 235122
Fig. 2	3	Barrel (1)	Clay brownish	17.78x18.59 / 17.4 / 2.0; 1.9	D.15/73-4	CC: Site B; Room U.4 (post-Makurian)	17th century	MNW 235351
Fig. 7	4	Barrel (half)	Glass black, light turquoise stripes, opaque	20.0 / 20.0 / 8.0	D.1/80	Site P: House B, room B.3, Level 4	Christian	*SNM
Fig. 3	5	Barrel, long (1)	Stone: onyx brown/white/yellow	9.30x9.51 / 19.4 / 2.3; 4.07	D.15/81	Site P: street AB, middle part; layer 3	Christian	MNW 235701
Fig. 2	6	Globular (1)	Clay brownish	14.53x15.29 / 14.2 / 2.2; 1.5	D.2/82	CC: Site B	post-Makurian	MNW 235703
Fig. 7	7	Barrel (1)	Glass red/blue/white opaque	12.73 / 12.9 / 3.0	D.9/82	CC: Site B; naos, above pavement	post-Makurian	MNW 235704
Fig. 2	8	Oval seal, one convex side; on flat surface incised bird(?) encircled with a single line; object pierced horizontally through the convex part (1)	Clay cream	12.0x9.0 / 6.0 / 1.0	D.10/82	CC: Site B; naos, on floor	Christian	*Archive
Fig. 6	9	Barrel, short (1)	Glass amber, translucent	13.85 / 8.0 / 3.3; 3.3	D.12/82	Citadel, Site AX: House Y, Room Y1, mud floor	post-Makurian 17th–18th century	MNW 235705
Fig. 2	10	Claw-shaped pendant (1)	Clay dark grey	23.0x10.0 / 35.0 / –	D.1/84	CC: Site B, sand fill	post-Makurian	*SNM

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 1	11	Tubular (1)	Ivory whitish	6.36 / 10.2 / 3.3	D.4/84	CC: Site B, outside the building	11th–12th century	MNW 235708
Fig. 7	12	Barrel (1)	Glass white and blue-black decoration?	16.0 / 13.0 / 3.5	D.5/84	CC: Site B, naos, layer immediately below tile floor	Christian	*SNM
	13	Disc (1)	Ostrich eggshell whitish	4.26 / 1.8 / 1.2	D.6/84	CC: Site B, outside the building, level before construction	9th century	MNW 235709
Fig. 5	14	Biconical, long (1)	Glass transparent, opaque blue and white trails	4.80 / 9.8 / 0.5	D.7/84	CC: Site B, naos, layer over floor	post-Makurian	MNW 235710
	15	Annular (1)	Faience greenish blue	18.0–22.0 / 16.0 / 8.0	D.4/85	CC: Site B, north portico, sand fill	post-Makurian	*Archive
	16	Annular (1)	Faience blue	15.0–19.0 / 10.0 / 3.0	D.5/85	CC: Site B, central part, fill above rubble	post-Makurian	*Archive
Fig. 4	17	Tubular, short irregular, 'necklace' (6)	Faience turquoise	13.55–20.53 / 11.3–12.8 / 6.8	D.6/85?	CC: Site B, northern part of naos	post-Makurian	MNW 235885
	18	Oblate (1)	Clay	15.0 / 14.0 / –	D.10/85	CC: Site B, naos, northern part , level below house III M	post-Makurian	*Archive
Fig. 2	19	Globular (1)	Clay light red	10.28 / 9.3 / 2.6	D.11/85?	CC: Site B, naos, northern part, house III M	15th–17th century	MNW 235886
Fig. 7	20	Barrel, long (1)	Glass dark blue, opaque white trails	7.0 / 13.0 / –	D.12/85	CC: Site B, naos, northern part, level below house III M	15th–17th century	*Archive
	21	Annular (half)	Faience blue	19.0 / 8.0 / 12.0	D.13/85	CC: Site B; N arm, level above rubble	post-Makurian	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 2	22	Biconical (1)	Clay light red	21.36 / 15.4 / 2.2, 3.1; conical	D.14/85	CC: Site B, in sand fill	post-Makurian	MNW 235890
Fig. 3	23	Biconical, hexagonal, faceted (1)	Stone: carnelian red-orange	19.5 / 14.0 / –	D.1/86	CC: Site B	Christian?	*Archive
	24	No data	Glass		D.12/86	CC: Site B	–	*Archive
Fig. 5	25	Barrel (1)	Glass light turquoise	7.98 / 7.3 / 1.5	D.13/86	CC: below the floor of House IK6	post-Makurian	MNW 235882
Fig. 3	26	Cross (1)	Stone olive green	17.5 / 13.5 / 4.0	D.19/86	DM: refectory, surface	Christian	*Archive
	27	Annular (1)	Faience blue	15.5–18 / 6.5–7.5 / 6.0–7.0	D.20/86	CC: House, III k6, original floor level	post-Makurian: 14th century	*Archive
Fig. 7	28	Barrel (1)	Glass yellow body, five small circular inlaid motifs	13.5 / 10.0 / 4.0–5.0	D.25/86	Site D: cemetery, Grave 2, on west	post-Makurian	*Archive
Fig. 3	29	(1)	Stone: quartz white	7.84x6.92 / 10.5 / 1.32; 2.0; conical	D.26/86	Site D: cemetery, Grave 2,	post-Makurian	MNW 235881
	30	(1)	Faience greenish blue	17.0–19.0 / 14.0 / 7.0–9.0	D.12/87	CC: site B, court of House J; *rukuba* II, mud base of wall	post-Makurian	–
	31	Barrel (1)	Stone light yellow	8.33 / 8.2 / 1.3; 1.1	D.20/87	Site D: Monastery, Room 5, upper level	Christian: 12th–14th century	MNW 235883
	32	(100)	Glass green, blue, white, purple, transparent	445.0 length of necklace	D.32/87	Site D: Church, north aisle under pavement in leveling stratum; found in pot D.31/87	Christian	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	33		Faience green-blue	see above, *Cat. 32*				
	34		Shell					
	35		Bone					
	36		Stone: chert, agate, alabaster					
	37		Nacre					
	38		Fruit stone					
Fig. 5	39	Disc (1)	Ostrich eggshell whitish	9.23 / 2.4 / 2.0; conical	D.11/88	Site P: town, house PCH.1, room f,g,b	Second half of 7th–15th century	MNW 238104
Fig. 5	40	Tubular, short; barrel (5)	Glass yellow, opaque	2.9; 7.2x10.0; 8.6; 6.0; 5.85x7.0 / 5.9; 6.2; 2.7; 5.1; 6.4 / 0.97; 1.63; 1.8; 1.1; 1.7	D.11/88			
Fig. 5	41	Tubular, short (1)	Glass green, translucent	5.67 / 4.1 / 1.6; conical	?	–		
Fig. 5	42	Barrel (1)	Glass turquoise, translucent	4.87 / 2.2 / 1.3	?	–		
	43	Pendant, conical (1)	Clay	32.0 / 30.0 / –	D.39/88	Site D: Monastery	Classic Christian	*Archive
	44	Pendant, conical (1)	Clay	30.0 / 30.0 / –	D.40/88	Site D: Monastery	–	*Archive
	45	Tubular (2)	Glass yellow	8.0; 7.0 / 6.0; 6.0 / 2.0; 1.0	D.15/89	Site P: town, house PCH.1, SW	12th century	*Archive
	46	Disc (1)	Ostrich eggshell?	9.0 / 2.0 / 1.5	D.15/89	Site P: town, house PCH.1, SW	12th century	*Archive
	47	(half)	Glass white	8.0 / 7.0 / –	90.004	Site A: platform, sector 1	–	*Archive
	48	(1)	Clay	14–16.0 / – / –	90.009	Site A: platform, sector 2	–	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	49	(half)	Glass white	7.5 / – / –	90.010	Site A: platform, sector 2	–	*Archive
	50	(1)	Glass yellow	9.0 / – / –	90.025	Site A: platform, sector 2	15th–17th century	*Archive
	51	(1)	Glass yellow	13.0 / – / –	90.026	Site A: platform, sector 2	15th–17th century	*Archive
	52	(1)	Clay	16.0 / – / –	90.062	Site A: platform	15th–17th century	*Archive
	53	(half)	Glass white	5.0 / 7.0 / –	90.063	Site A: platform, sector 2, II	15th–17th century	*Archive
	54	(1)	Faience	17.0 / 12.0 / –	90.132	Site A, platform, sector 4, I	15th–17th century	*Archive
	55	(2)	Glass white	6.0; 9.0 / 6.0; 7.0 / –	90.150	Site A, platform, sector 4, II	15th–17th century	*Archive
	56	(1)	Glass brown	12.0 / – / –	90.187	Site A, platform, sector 4, II	15th–17th century	*Archive
	57	(1)	Glass blue	6.0 / – / –	90.188	Site A, platform, room e	–	*Archive
	58	(1)	Faience	10–13.0 / 9.0 / –	90.189	Site A, platform, sector 4, II	15th–17th century	*Archive
	59	(1)	Faience green	20.0 / 10.0 / –	90.211b	Site A, platform, sector 5	15th–17th century	*Archive
	60	(2)	Faience blue	20.0; 16.0 / – / –	90.213	Site A, platform	15th–17th century	*Archive
	61	(3)	Clay	17.0 / – / –	90.214a	Site A, platform	15th–17th century	*Archive
	62	(1)	Clay	15.0 / – / –	90.214b	Site A, platform	15th–17th century	*Archive
	63	(1)	Clay	16.0 / – / –	90.214c	Site A, platform	15th–17th century	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	64	(1)	Glass black	4.5 / 12.0 / –	90.215	Site A, platform	15th–17th century	*Archive
	65	(1)	Glass green	8.0 / 7.0 / –	90.220	Site A, platform, sector 4	15th–17th century	*Archive
	66	(1)	Faience blue	20.0 / 10.0 / –	90.222a	Site A, platform	15th–17th century	*Archive
	67	(1)	Clay	16.0 / 14.0 / –	90.222b	Site A, platform	15th–17th century	*Archive
	68	(1)	Stone	13.0 / 7.0 / –	90.222c	Site A, platform	15th–17th century	*Archive
	69	(half)	Faience blue	21.0 / 14.0 / –	90.238a	Site A, platform, sector 3–4	15th–17th century	*Archive
	70	(half)	Faience blue	9.0 / 14.0 / –	90.238b	Site A, platform, sector 3–4	15th–17th century	*Archive
	71	(1)	Glass yellow	9.0 / 7.0 / –	90.238c	Site A, platform, sector 3–4	15th–17th century	*Archive
	72	(1)	Glass blue, white	5.5 / 6.0 / –	90.238d	Site A, platform, sector 3–4	15th–17th century	*Archive
	73	Biconical (1)	Glass green-bluish, translucent	12.0 / 14.0 / 1.5–3.0	D.5/91-2	Site R.1: kiln D; rubble (surface)	Christian (Early?)	*Archive
Fig. 2	74	Circular, hole in center (1)	Clay cream-pink	32.0 / 7.0 / 4.0	D.17/91-2	Site H: NW Room 1B, uppermost layer of rubble	Christian (Late?)	*Archive
	75	(1)	Glass dark blue	10.0 / 11.0 / –	93.084.1	Site A: platform, Pit E, NW	15th–17th century	*Archive
	76	(1)	Glass blue	7.0 / 6.0 / –	93.084.2	Site A: platform, Pit E, NW	15th–17th century	*Archive
	77	(1)	Clay	16.0 / – / –	96.001	Citadel: NW, Pit 96.1	15th–17th century	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	78	(1)	Faience	16.0 / 7.0 / –	96.002	Citadel: NW, Pit 96.1	15th–17th century	*Archive
	79	(1)	Clay	14.0 / – / –	96.028	Citadel: NW, House A.102	16th–17th century	*Archive
	80	(1)	Glass yellow	8.0 / – / 13.0	96.030	Citadel: NW, Pit 96.1, south part	15th–17th century	*Archive
	81	(1)	Faience blue	17.0 / 9.0 / –	96.068	Citadel: NW, Pit 96.1, south part	15th–17th century	*Archive
	82	(half)	Faience blue	15.0 / 11.0 / –	96.069	Citadel: NW, Pit 96.1, south part	15th–17th century	*Archive
	83	(1)	Faience	15.0 / 9.0 / –	97.014	Citadel: NW, House A.102	16th–17th century	*Archive
	84	(1)	Ivory	6.0 / 1.0 / –	97.016	Citadel: NW, House A.102	16th–17th century	*Archive
	85	(1)	Glass blue		97.044	Citadel: NW, House A.106	16th–17th century	*Archive
	86	(1)	Faience blue	14.0 / 7.0 / –	97.067	Citadel: NW, surface	–	*Archive
	87	(1)	Clay	11.0 / – / –	97.082	Citadel: NW, House A.106	16th–17th century	*Archive
	88	(1)	Ivory	7.0 / – / –	97.111	Citadel: NW, House A.106	16th–17th century	*Archive
	89	(1)	Clay	10.0 / – / –	97.183	Citadel: NW, House A.106	16th–17th century	*Archive
	90	Tubular, short (1)	Faience blue glaze, brownish core	17.8 / 8.0 / 6.4x6.8	99.002	Citadel: NW, surface	15th–17th century	Site storeroom
	91	Barrel (1)	Clay grey	17.12x16.06 / 12.5 / 3.2; 2.13x3.2	99.003	Citadel: NW, layer I	15th–17th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 4	92	(1)	Faience blue glaze, whitish core	– / 30.9x15.4x7.7 / 2.6	99.023	–	15th–17th century	Site storeroom
	93	Tubular, short (1)	Faience blue glaze, brownish core	17.93 / 10.7 / 5.9; 6.2	99.024	Citadel: Tower E.1, house	15th–17th century	Site storeroom
Fig. 2	94	Pendant, oblate (1)	Clay reddish coat, grey core	15.25 / 11.5 / 2.0	99.051	Citadel: NW, layer III	15th–17th century	Site storeroom
Fig. 2	95	Biconical, long (1)	Clay grey	16.06x14.14 / 33.4 / 4.0x3.2	99.052	Citadel: NW, layer III	15th–17th century	Site storeroom
	96	Pendant (1)	Clay grey	34.67x33.55x7.93 / – / 22.1x20	99.192	Citadel: NW?	12th–13th century	Site storeroom
	97	Oblate (1)	Clay grey	12.5x13.9 / 12.2 / 3.0; 2.45	99.196	Citadel: NW, House A.106b; mastaba N	10th–11th century	Site storeroom
Fig. 4	98	Biconical (1)	Faience blue glaze, whitish core	10.02 / 6.6 / 1.4; 2.25	99.199	Citadel: NW, House A.106b	12th–13th century	Site storeroom
	99	Oblate (1)	Clay grey	14.14 / 14.7 / 2.7	99.230(1)	Citadel: SWN, surface	15th–17th century	Site storeroom
	100	Barrel (1)	Clay grey	13.9 / 11.4 / 3.5	99.230(2)	Citadel: SWN, surface	15th–17th century	Site storeroom
Fig. 2	101	Circular with loop (1)	Clay grey	25.13x20.05 / 25.2 / 2.7	99.231	Citadel: SWN	15th–17th century	Site storeroom
	102	Maltese cross, arms elongated, one incised line on both sides (1)	Bone	– / 36.0/18.0/3.0–5.0 / –	D.28/00	NWC Church; surface, south of NWC	Christian	*Archive
	103	(1)	Glass	4.0 / 2.0 / –	01.007	Citadel: SWN	–	*Archive
	104	(1)	Glass	8.0 / 7.0 / –	01.126	Citadel: SWN, B.III	16th–17th century	*Archive

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	105	(1)	Faience	16–18.0 / 8.0 / –	01.128	Citadel: SWN, B.III	16th–17th century	*Archive
	106	(1)	Glass	– / 25.0x 6–11.0 / –	01.200	Citadel: SWN, 26	13th–15th century	*Archive
Fig. 6	107	Barrel, short (1, broken)	Glass yellow, opaque	8.03 / 6.0 / 1.5, 2.9; conical	03.001–003	Citadel: SWN	–	Site storeroom
	108	Biconical (1)	Clay reddish coat, grey core	17.8 / 11.3 / 2.3; 2.4x3.5	03.001	Citadel: SWN, surface	15th–17th century	Site storeroom
Fig. 3	109	Spherical (1)	Stonez: agate light red, red	8.08 / 7.3 / 1.7; 1.27	03.002	Citadel: SWN, B.III; surface	16th–17th century	Site storeroom
Fig. 6	110	Tubular (fragment)	Glass light green, opaque	8.17 / ? / 1.6x1.18, ?	03.003	Citadel: SWN, B.III; surface	16th–17th century	Site storeroom
Fig. 7	111	Barrel, standard (1, broken)	Glass light blue; white, opaque	15.58 / 12.1 / 3.6x4.3, 3.9x4.43; conical	03.099	Citadel: SWN, 26	13th–15th century	Site storeroom
	112	Oblate (1)	Clay reddish coat, grey core	5.0x 5.01 / 11.3 / 3.7x3.0; 2.22x3.6	05.019	Citadel: SWN.2	–	Site storeroom
	113	Oblate (half)	Faience blue glaze, brownish core	15.12 / 11.0 / 7.6, 6.8	05.020	Citadel: SWN.2 part E	–	Site storeroom
Fig. 7	114	Barrel (half)	Glass blue, translucent; white, opaque	14.6 / 13.6 / 3.8; 1.25; conical	05.021	Citadel: SWN.2	–	Site storeroom
	115	Disc, biconical (1)	Clay grey	16.5 / 11.3 / 7.3	05.065	–	–	Site storeroom
Fig. 1	116	(1)	Shell white	– / 30.2x17.0x12.8 / –	05.083	–	–	Site storeroom
Fig. 4	117	Oblate (1)	Faience blue glaze, grayish core	16.3x17.4 / 11.3 / 5.0x5.5; 5.9x5	05.084	Citadel: SWN.2 part E	–	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 2	118	Biconical (1)	Clay grey	17.3 / 14.2 / 3.4x4.3, 1.7x2.6; conical	05.085	Citadel: SWN.2 E	–	Site storeroom
Fig. 1	119	Disc (1)	Lupin seed reddish	10.8x10.9 / 4.04 / 1.1	05.088	Citadel: SWN.NE	–	Site storeroom
	120	Tubular, short (half)	Faience blue glaze, brownish core	16.6x17.5x16.7 / 11.0 / 6.6x5.7	05.148	Citadel: SWN.N.1	–	Site storeroom
	121	Biconical (1)	Clay grey	26.4x24.6 / 18.6 / 2.7x3.3; 6.3x3.6	05.169	–	–	Site storeroom
Fig. 6	122	Barrel (half)	Glass dark blue, translucent, white ornament, opaque	34.6 / 30.5 / 6.9; 4.9; conical	05.244	Citadel: SWN.B.I.33	13th–14th century	Site storeroom
Fig. 6	123	Oblate (1)	Glass green, opaque	11.9 / 12.9 / 1.5, 2.9; conical	05.245	Citadel: SWN.B.I.33	13th–14th century	Site storeroom
	124	Tubular, short (half)	Faience light blue glaze, brownish core	17.0 / 9.9 / 8.0	05.246	Citadel: SWN.B.I.33	13th–14th century	Site storeroom
Fig. 2	125	Biconical, short (1)	Clay reddish coat, grey core	18.7x16.2 / 6.4 / 2.6x3.8	05.247	Citadel: SWN.B.I.33	13th–14th century	Site storeroom
	126	Biconical (1)	Clay reddish coat, grey core	26.2 / 19.8 / 2.8x4.8	05.262	Citadel: SWN.B.I, central part	13th–14th century	Site storeroom
	127	(1)	Shell white	– / 30.2x17.0x12.8 / –	05.263	Citadel: SWN.B.I?, central part	13th–14th century	Site storeroom
Fig. 2	128	Oblate (1)	Clay grey	19.6x18.7 / 17.5 / 3.7	05.263	Citadel: SWN.B.I, central part	13th–14th century	Site storeroom
Fig. 1	129	On leather thong (1)	Shell white, brown	17.1x21.5x12.0 / – / 4.0	07.051	Citadel: SWN.3.BI.52	13th–14th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *nom vidi*
	130	Barrel, short (1)	Faience blue glaze, brownish core	17.25x18.2 / 11.7 / 6.1. 4.7	07.052	Citadel: SWN.H.07.2; below level 28.32	16th–17th century	Site storeroom
Fig. 5	131	(1)	Glass blue, white, red, black	7.9 / 7.3 / 1.17	07.053	Citadel: SWN.07.H.12	16th–17th century	Site storeroom
Fig. 6	132	Tubular, long (1)	Glass turquoise, light turquoise, opaque	8.0 / 20.3 / 4.25x3.5; 2.1; conical	07.054	Citadel: SWN.07.H.12	16th–17th century	Site storeroom
	133	(1)	Shell whitish	14.7x10.6x4.8 / – / 9.3x5.7	07.055	Citadel: SWN.07.H.12	16th–17th century	Site storeroom
	134	(1)	Shell white, brown	9.7x14.8x5.2 / – / 9.6x6.5	07.064	Citadel: SWN.07.H.12	16th–17th century	Site storeroom
Fig. 5	135	Tubular, standard (1)	Glass yellow, opaque	6.5x5.7 / 6.3 / 1.85x1.4	07.296	Citadel: SWN.02.H.2.3	16th–17th century	Site storeroom
	136	Tubular, standard (fragment)	Faience light blue glaze, brownish core	– / 11.4 / –	07.300	Citadel: SWN.07.01 H14.1	16th–17th century	Site storeroom
	137	(1)	Clay	18.0 / – / –	07.341	Citadel: SWN.H.2.2	16th–17th century	Site storeroom
	138	– (1)	Glass	8.6 / 9.6 / –	07.390	Citadel: C.07.01, level 3	14th–15th century	*Archive
	139	Barrel disc (1)	Glass blue, translucent	6.3x5.7 / 3.1 / 1.2	07.408	Citadel: C.07.01, level 3	14th–15th century	Site storeroom
Fig. 5	140	Barrel (1)	Glass green, translucent	5.0 / 4.3 / 1.5	07.408	Citadel: SWN.H14.1	16th–17th century	Site storeroom
Fig. 3	141	Faceted (1, broken)	Stone red	– / 23.2x16.8x9.9 / 1.6x1.8	07.419	Citadel: SWN.B.54	13th–15th century	Site storeroom
Fig. 1	142	Cowry shell (1)	Shell white	– / 14.8x22.0x5.8 / 15.4x12.3	07.420	Citadel: SWN.B.54	13th–15th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
	143	Barrel (1)	Clay white	12.0 / 12.8 / 3.6x1.5	07.421	Citadel: SWN.B.I.54	13th–14th century	Site storeroom
Fig. 6	144	Barrel (1)	Glass amber, translucent	9.9 / 7.2 / 3.2, 2.5x3.4	07.422	Citadel: SWN.B.I.54	13th–14th century	Site storeroom
Fig. 6	145	Barrel (1)	Glass light blue, opaque	3.9 / 3.5 / 0.9	07.423	Citadel: SWN.H1.1	16th–17th century	Site storeroom
Fig. 2	146	(1)	Clay	15.0 / 12.0 / –	07.445	Citadel: SWN.B1.54	13th–14th century	Site storeroom
	147	Biconical, long (1)	Clay grey	16.1 / 32.3 / 3.65x2.7	07.458	Citadel: SWN.3B.55(54), 2H.5	–	Site storeroom
	148	Oblate (1)	Clay reddish coat, grey body	18.5x16.2 / 18.5 / 2.7x2	07.458	Citadel: SWN.H.2.2	16th–17th century	Site storeroom
Fig. 3	149	Pentagonal, long, faceted (1)	Stone: carnelian red	6.1x4.8 / 11.4 / 1.5	07.460	Citadel: SWN.3B1.54; below tamped earth	13th–14th century	Site storeroom
	150	Biconical (1)	Clay reddish coat, grey body	16.7x16.0 / 12.7 / 2.2x1.9	07.460	Citadel: SWN.3B1.54	13th–14th century	Site storeroom
Fig. 6	151	Cylinder (fragment)	Glass light turquoise, opaque	8.8 / – / 3.2	07.482 or 07.390	Citadel: SWN.3 H.5 or C 07.01, level 3	16th–17th century	Site storeroom
	152	(1)	Shell white	– / 8.3x12.9x6.2 / 5.7x2.4	07.490	Citadel: SWN.B.36	13th–17th century	Site storeroom
	153	Tubular, standard (1)	Faience blue glaze, brownish core	17.4x15.1 / 10.7 / 6.8; 6.7	07.524	Citadel: SWN.H1.4	16th–17th century	Site storeroom
Fig. 2	154	Barrel, standard (1)	Clay grey	14.8 / 13 / 2.6	07.559	Citadel: C.01	14th–15th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 4	155	Tubular, standard (1)	Faience blue glaze, brownish core	14.5 / 12.2 / 5.7x6.2; 6.1x6.4	07.560	Citadel: C.01	14th–15th century	Site storeroom
	156	Oblate (1)	Clay grey	16.8x15.6 / 16.7 / 2.0	07.578	Citadel: SWN.B.35	13th–17th century	Site storeroom
Fig. 6	157	Barrel, short (1)	Glass yellow, opaque	11.3 / 7.8 / 2.8, 3.7; conical	07.592	Citadel: C.01, below level 4	14th–15th century	Site storeroom
	158	Oblate (1)	Stone: agate red, light red, whitish	10.2x7.8 / – / not perforated	07.607	Citadel: C.01, fill E	14th–15th century	Site storeroom
Fig. 6	159	Barrel, long (1)	Glass light green, opaque	14 / 16.6 / 2.5, 3.55; conical	07.644	Citadel: C.01.B.6	14th–15th century	Site storeroom
	160	Tubular, short (half)	Faience blue glaze, brownish core	16.3 / 8.3 / 6.9	08.011	Citadel: SWN.H.5.2; below level 28.32	16th–17th century	Site storeroom
Fig. 6	161	Barrel (half)	Glass yellow, opaque	8.6 / 8.0 / 2.35; 1.07; conical	08.012	SWN.H.5.2; below level 28.32	16th–17th century	Site storeroom
	162	Tubular, standard (1)	Faience blue glaze, brownish core	16.6 / 10.0 / 8.55; 7.95	08.023	SWN.B.I.36–37; post-Makurian layers	16th–17th century	Site storeroom
	163	Tubular, short (1)	Faience blue glaze, brownish core	14.4x17.5 / 10.9 / 7.4x6.9	08.074	Citadel: SWN.2.H.9, floor	16th–17th century	Site storeroom
Fig. 1	164	Lenticular, long (1)	Ivory whitish	12.5x5.3 / 27.8 / 2.4	08.078	Citadel: SWN.B.I.41, post-Makurian layers	13th–14th century	Site storeroom
Fig. 2	165	Elliptical (1)	Clay grey	24x21.2 / 22.6 / 3.0	08.136	Citadel: SWN.B.I.36, post-Makurian layers	13th–14th century	Site storeroom
	166	Spherical (1)	Clay grey	14.2x15.0 / 12.7 / 1.0	08.137	Citadel: SWN.B.I.36	13th–14th century	Site storeroom
	167	Barrel (1)	Clay grey	13.8 / 16.9 / 3.0	08.138	Citadel: SWN.B.I.36, post-Makurian layers	13th–14th century	Site storeroom

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Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 6	168	Biconical, long, slightly hexagonal (1)	? translucent	10.4x8.5 / 15.7 / 2.2	08.139	Citadel: SWN.B.I.36, post-Makurian layers	13th–14th century	Site storeroom
	169	Barrel (1)	Clay whitish	20.2x 17.8 / 20 / 2x6.9; 2x3.2	08.140	Citadel: SWN.B.I.11	13th–14th century	Site storeroom
Fig. 4	170	Tubular, short (fragment)	Faience blue glaze, brownish core	– / 11.3 / –	08.142	Citadel: SWN.B.I.50	13th–14th century	Site storeroom
Fig. 1	171	Tubular, long (1, broken)	Bone whitish	7.9x5.7 / 24.4 / 3.3	08.144	Citadel: SWN.B.I.41	13th–14th century	Site storeroom
	172	Tubular, short (1)	Faience blue glaze, brownish core	17.2 / 7.8 / 7.4	08.152	Citadel: SWN.B.V, debris over W wall	15th–17th century	Site storeroom
Fig. 1	173	(1)	Shell	17.5 / 32.7 / 2.75	08.153	Citadel: SWN.B.V, debris over W wall	15th–17th century	Site storeroom
	174	Oblate, irregular (1)	Clay grey, brown	31.0 / 29.0 / 4.0x3.0	08.156	Citadel: SWN.B.I.41	13th–14th century	Site storeroom
	175	Biconical (1)	Clay grey	22.7x21.4 / 17.2 / 2.9x1.9	08.191	Citadel: W entrance to B.I.11	13th–15th century	Site storeroom
Fig. 1	176	(1)	Shell	15.1x17.7x9.8 / – / 2.3	08.192	Citadel: W entrance to B.I.11	13th–15th century	Site storeroom
	177	(1)	Shell	10.1x14.5x4.5 / – / 10.6x7.45	08.193	Citadel: W entrance to B.I.11	13th–15th century	Site storeroom
	178	Biconical (1)	Clay grey	25.3 / 21.2 / 3.7x2.3	08.203	Citadel: SWN.B.V, fill over W wall	13th–15th century	Site storeroom
Fig. 1	179	(1)	Shell whitish	21.9x31.9x15.9 / – / 18.45x12.5	08.211	Citadel: SWN.B.I.41, upper layer	13th–15th century	Site storeroom
	180	Barrel (1)	Clay grey	13.2x 12.6 / 15.4 / 2.2	08.212	Citadel: SWN.B.I.41	13th–14th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 6	181	Barrel, short (1)	Glass paste yellow, opaque	6.4 / 4.34 / 2.45; 1.85; conical	08.224	Citadel: SWN.B.V, late fill	13th–15th century	Site storeroom
	182	Barrel (1)	Clay grey	16.8x 15.7 / 14.9 / 1.4	08.277	Citadel: SWN.B.VI.1, fill over B.VI.1	15th–17th century	Site storeroom
Fig. 5	183	Barrel disk (1)	Glass yellow, opaque	4.3 / 2.0 / 1.3	08.280	Citadel: SWN.B.V, upper fill, area of pillar	15th–17th century	Site storeroom
	184	Tubular, standard (fragment)	Faience blue glaze,brownish core	13.6x14.21x14.2 / 9.8 / 4.7	08.302	Citadel: SWN.B.V, central trench, post-Makurian layers	16th–17th century	Site storeroom
	185	Tubular, standard (fragment)	Faience blue glaze; brown core	15.5 / 10.8 / 7.45	08.319	Citadel: SWN.B.I.42, post-Makurian layers	16th–17th century	Site storeroom
	186	Tubular, standard (fragment)	Faience blue glaze	approx. 16.6 / 12.6 / –	08.354	Citadel: SWN.B.I.43, post-Makurian layers	16th–17th century	Site storeroom
	187	Tubular, standard (fragment)	Faience blue glaze, whitishcore	approx. 15.8 / 10.9 / ?	10.198	Citadel: C.01.H.09	16th–17th century	Site storeroom
	188	Cowry shell (1)	Shell whitish	– / 13.8x19.4x9.0 / 4.55x5.7	10.204	Citadel: SWN. SE.H.27	15th–17th century	Site storeroom
	189	Cowry shell (1)	Shell whitish	– / 13.7x19.9x8.9 / 4.6x6.34	10.204	Citadel: SWN. SE.H.27	15th–17th century	Site storeroom
Fig. 1	190	Cowry shell (1)	Shell whitish	– / 16.3x21.3x10.4 / 6.9x4.8	10.204	Citadel: SWN. SE.H.27	15th–17th century	Site storeroom
Fig. 4	191	Tubular, short (1)	Faience blue glaze, brownish core	13.3 / 6.7 / 4.8x6.4.4	10.233	Citadel: C.01, above B.VI.6	16th–17th century	Site storeroom
Fig. 6	192	Barrel, standard (1)	Glass dark green, opaque	12.7 / 10.7 / 5.0, 2.3; conical	10.234	Citadel: C.01, above B.VI.6	16th–17th century	Site storeroom
Fig. 6	193	Tubular, long (1)	Glass light blue, dark blue, translucent	8.9 / 26.7 / 2.7, 4.2; conical	10.246	Citadel: C.01.H.12	16th–17th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 6	194	Barrel (1)	Glass green, opaque	9.6 / 7.0 / 3.0, 2.55; conical	10.256c	Citadel: C.01.H.8	15th–17th century	Site storeroom
	195	Barrel, short (1)	Glass black, opaque	7.6x8.2 / 3.8 / 2.0	10.256b	Citadel: C.01.H.8	15th–17th century	Site storeroom
Fig. 5	196	Barrel, short (1)	Glass light blue, translucent	5.8 / 3.9 / 1.3	10.256a	Citadel: C.01.H.8	15th–17th century	Site storeroom
Fig. 4	197	Tubular, short (half)	Faience blue glaze, brownish core	18.4 / 11.4 / 8.55, 9.0	10.260a	Citadel: C01.H.11	15th–17th century	Site storeroom
Fig. 4	198	Tubular, short (fragment)	Faience blue glaze, white core	? / 9.5 / –	10.260b	Citadel: C01.H.11	15th–17th century	Site storeroom
Fig. 4	199	Tubular, short (fragment)	Faience blue glaze, white core	17.3 / 10.7 / approx. 6.8	10.260c	Citadel: C01.H.11	15th–17th century	Site storeroom
	200	Tubular, short (1)	Faience blue glaze, brownish core	15.7x16.4 / 11.7 / 7.45, 7.25	10.279a	Citadel: C01.B.V1.13	15th–17th century	Site storeroom
Fig. 4	201	Tubular, short (fragment)	Faience blue glaze, whitish core	14.4 / 8.9 / 3.35, 4.45	10.279b	Citadel: C01.B.V1.13	15th–17th century	Site storeroom
Fig. 4	202	Tubular, short (1)	Faience light blue glaze, brownish core	14.3 / 11.4 / 6.0	11.004	Citadel: SWN.B.V, SE part, upper layer	15th–17th century	Site storeroom
	203	Tubular, short (1)	Faience light blue glaze, brownish core	15.8x12.6 / 9.05 / 6.8x7.0	11.066	Citadel: SWN.B.V, west side, upper layer	15th–17th century	Site storeroom
	204	Tubular, short (1)	Faience light blue glaze, brownish core	19.6 / 10.4 / 10.8	11.089	Citadel: SWN.B.V, SW part, upper layer	15th–17th century	Site storeroom
Fig. 4	205	Tubular, short (1)	Faience light blue glaze, brownish core	16.4x16.6 / 10.7 / 5.8	11.090	Citadel: SWN.B.V, over wall N	15th–17th century	Site storeroom

Fig.	Cat.	Shape (quantity, preservation)	Material color(s) opacity translucency	Diameter max. / length/width/thickness / hole diameter (mm); shape of perforation	Inv. no.	Find context data	Context dating	Present location * *non vidi*
Fig. 5	206	Tubular, standard (1)	Glass yellow, translucent	4.9 / 5.1 / 1.0	11.101	Citadel: C.1 B.VI.1, floor level	13th–15th century	Site storeroom
Fig. 3	207	Biconical, hexagonal (half)	Stone: agate white, light red, brown	15.2x12.4 / 18.6 / 1.9	2003; no number	–	–	Site storeroom
	208	(1)	Shell whitish	– / 10.6x15.2x6.5 / 6.15x4.6	No number	–	–	Site storeroom
	209	Biconical (3)	Faience blue glaze, whitish core	17.2x20.0 / 10.8 / 8.5; 9.4	No number	–	–	Site storeroom
	210	Oblate (1)	Clay grey	15.6x14.2 / 15.3 / 2.5; 3.1x5.0	No number	–	–	Site storeroom
	211	Oblate (1)	Clay grey	11.2 / 9.8 / 3.9x1.8	No number	–	–	Site storeroom
	212	Tubular, short (1)	Faience blue glaze, grayish core	15.4 / 8.6 / 6.5; 5.3x6.0	No number	–	–	Site storeroom
	213	Tubular, short (fragment)	Faience blue glaze, grayish core	17.2 / 10.1 / ?	No number	–	–	Site storeroom
	214	Barrel, short (fragment)	Faience blue glaze, grayish core	– / 11.7 / –	No number	–	–	Site storeroom
Fig. 5	215	Barrel, short (1)	Glass yellow, opaque	7.5 / 5.8 / 1.75	No number	–	–	Site storeroom
Fig. 6	216	Barrel, short (1)	Glass yellow, opaque	7.5 / 7.0 / 1.9x1.7; 2.5; conical	No number	–	–	Site storeroom
Fig. 5	217	Barrel, short (1)	Glass orange, opaque	7.1 / 23.5 / 2.98x2.35; conical	No number	–	–	Site storeroom
Fig. 6	218	Cylinder (standard) (half)	Glass green, opaque	approx. 10.6 / 9.7 / 4.7; 2.6; conical	No number	–	–	Site storeroom
Fig. 2	219	Globular, irregular (1)	Clay dark red/blackish	25.2 / 24.1 / 4.95		–	Second half of 7th–15th century	MNW 238127

CONCLUSIONS

Throughout its long history Dongola remained within the circle of Middle Eastern and Mediterranean trends. As illustrated in the *baqt* and Persian literary sources, the Christian Makurian capital of Dongola was involved in trade contacts with the early Islamic world during the 7th–12th centuries and this can be traced through the evidence of typical products from early Islamic glass centers: mirror-, spiral- and feather-trailed beads as well as 'eye'-beads. Despite the decline of early Islamic Middle Eastern glass centers in the 12th century and the rise of dominating European ones in the 15th century, beads from Hebron continued to reach Sudan until at least the late 17th century AD.

Many of the beads and pendants from medieval Dongola represent a transcultural medium illustrating cultural interaction that occurred despite functional, political, religious, territorial and chronological borders. In the Makurian period, the ancient tradition characterized by the use of the same materials and motifs apparent in earlier periods of Nubian development (i.e., cowry shells) remained strong alongside a new tradition marked with Christian symbols. This new tradition was particularly evident obviously in finds from Christian churches.

The repertoire, as recorded in archaeological excavations, reflects certain shifting traditions also between the Makurian and post-Makurian periods. Clay beads, which appeared in considerable numbers in the 11th century, illustrated another new and common medieval trend, which continued into the post-Makurian period. It is impossible to be sure at present whether they shared a connection with Muslim prayer beads and Christian rosaries or whether they were meant to protect animals and children, or whether they were used as abacus beads.

By the 12th century large blue faience beads were commonly found in early Islamic centers, such as Siraf or Fustat, where they are believed to have possessed amuletic properties and were used to protect animals and children. The tradition of producing these beads reached Dongola later on. They started to appear in contexts dated to the 13th and 14th centuries and their use intensified in the post-Makurian period. These ordinary objects seem to be a sign of the desert Arab tribes' growing influence in medieval Dongola.

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