Royal ornaments of a late antique African kingdom, Early Makuria, Nubia (AD 450–550)
Early Makuria Research Project

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Abstract: After the fall of the Meroe kingdom, three entities – Nobadia, Early Makuria, and Alwa (Alodia) – emerged in northeast Africa between the 4th and the 6th centuries AD. Richly furnished elite cemeteries with tombs of the Nobadian kings are known from Qustul and Ballaña in Lower Nubia (Emery and Kirwan 1938), but until now no royal tombs of Early Makuria have been identified. A comparative analysis of some recently excavated adornments and ornaments from the tumulus cemetery of el-Zuma in Upper Nubia have now enabled the Early Makuria royal tombs (AD 450–550) to be placed there. The assemblages from three large tumuli are dominated by personal adornments (beads, pendants, earrings, chains, crosses, and a ring), royal regalia (cabochons and settings), and other decorated items (metal sheets, an intarsia and ivory gaming pieces). Apart from beads of various materials, like marine mollusk shell, ostrich eggshell, faience and stone, which were made probably in local workshops, the remaining items were imports from the Mediterranean and Sri Lanka/South India (glass beads in the latter case). Moreover, many of the decorated objects and the techniques used to make them find parallels in the elite Nobadian cemeteries of Qustul and Ballaña, hinting at the royal origin of some of the Early Makuria tomb owners at el-Zuma. These parallels induce the thought that there was a single workshop in late antique Nubia producing artifacts for the elite.

Keywords: beads, pendants, jewelry, cabochons in silver settings, ivory containers, intarsia, ivory gaming pieces, Nubia, AD 450–550, late antiquity, Early Makuria, Indo-Pacific trade, Christian symbols

INTRODUCTION

Nubia is a region in northeastern Africa, encompassing northern Sudan and the southern fringes of Egypt. It consists of two parts, the names of which – Lower Nubia in the north and Upper Nubia in the south – correspond to the flow of the Nile. Regions in Nubia are separated by the Nile cataracts, the First Cataract being located south of Aswan and the last one, the Sixth, north of modern-day Khartoum. After the fall of the Meroe Kingdom, which probably extended as far south as the confluence of the Blue and White Nile and beyond, three entities emerged between the 4th and 6th centuries AD. These were

Nobadia in Lower Nubia, Early Makuria in Upper Nubia, and Alwa (Alodia) in the region upriver from the Fifth Cataract. Single burials in tumuli as well as massive tombs containing bronze horse harnesses and wide-bladed iron spears appeared throughout Sudan. Cemeteries for Nobadian kings, queens and members of the elites were excavated in Qustul and Ballaña (Emery and Kirwan 1938; Farid 1963). The largest of the great tumuli covering such burials was nearly 80 m in diameter and 12 m high. Several had multi-chambered substructures containing burials and large quantities of other material. The kings were buried with their regalia, including silver crowns, spears and other military equipment. The burials also contained imported materials, including metal vessels, items of furniture, horse harnesses, wooden boxes with ivory inlays, a game board and gaming pieces, toiletries, a large quantity of pottery probably used in funerary rituals, including Mediterranean amphora, as well as rich beadwork and jewelry.

Following excavations at sites to the south: Tanqasi, Hammur, and el-Hobagi (e.g., Shinnie 1954; Jacquet-Gordon and Bonnet 1971; Żurawski 2000; Lenoble 2004 and references), tumulus cemeteries were assumed to be counterparts of the Nobadian cemeteries at Qustul and Ballaña. However, royal burials have yet to be identified in the Early Makuria and Alwa region. Recent finds of ornaments and adornments at el-Zuma have provided evidence of the royal character of at least some of them.

The el-Zuma site is situated between the Third and Fourth Cataracts in the Dongola Reach in Upper Nubia, a region that occupies a strategic position controlling the north-south and east-west desert roads, as well as riverine communication routes (El-Tayeb 2012: 15). The el-Zuma tumulus cemetery field is being excavated by the Early Makuria Research Project, a joint research program of the Polish Centre of Mediterranean Archaeology of the University of Warsaw (PCMA) and the National Corporation for Antiquities and Museums of Sudan. The project is sponsored by the Qatar–Sudan Archaeological Project and the PCMA. The site has been dated to the late post-Meroitic period, otherwise called Early Makuria Phase II (AD 450–550) (El-Tayeb 2012: 61–75; El-Tayeb, Skowrońska, and Czyżewska 2016 and references).

Over the course of seven excavation seasons between 2005 and 2014, more than one thousand remains of personal adornments associated with 21 tumuli were uncovered at el-Zuma (Then-Obłuska 2016c). The objects were found in the fill of chambers, shafts, tunnels, and in plunderers' pits. Although the graves were heavily robbed, the remains of personal adornments provided a broad overview of the materials and techniques applied in their production. The provenance of the materials and manufacturing techniques suggest el-Zuma's involvement in regional and long-distance commercial exchange in this period. A comparative synopsis of contemporary Nubian adornments from private cemeteries has shown parallels with the objects from el-Zuma (Then-Obłuska 2016c).

This paper presents an overview of the ornaments found in the three largest el-Zuma tumuli: T.1, T.4, and T.7, which have been partly excavated over the course of the two most recent seasons in 2015 and 2017 (for adornments from earlier excavations of tumuli T.4 and T.7, see Then-

-Obłuska 2016c). While the objects from tumulus T.1 were found in chamber 1, the ones from T.4 were collected from the fill of the tunnel, and in the case of T.7 from the tunnel close to the first pillar. Among the finds, a few fragments of inlays may come from a *duodecim scripta* gaming board, one of the most extraordinary artifacts found in Nubia. A decorated metal tube topped with a bead must have been a lid knob. Embossed silver sheet fragments were once scabbard or saddle fittings. While the discovered earrings, bells, chains, ring, and fly shank-bead are elements of elite jewelry, the numerous silver cabochon settings are most probably examples of royal regalia. Altogether, along with the broad diversity of beads and pendants, these items have many parallels in the royal burials of Qustul and Ballaña, suggesting that el-Zuma was the cemetery of Early Makuria royalty and elite.

The overview presented in this paper, comprising beads (centrally perforated objects) and pendants (objects with off-center perforation or with attached loop), follows a classification by material (marine mollusk shell, stone, faience, glass, metal-in-glass, metal) and by the techniques used to make them. A shank-bead and bell pendants are also included. The described jewelry elements also include earrings, chain fragments, cabochons (those with settings as well), a ring and a pin. The metal finds comprise of a rosette stud and pins, a badge with an embossed cross, as well as embossed sheet decoration. A lid knob and ivory containers make up a separate category. Moreover, various ivory fragments were identified as being parts of toilet containers or dice-boxes and gaming pieces.

The identification of metal objects is tentative, the material being subject to future laboratory analysis.

BEADS AND PENDANTS

Marine mollusk shells, stone, faience and glass were used to produce the beads found in the three el-Zuma tombs. Ostrich eggshell beads were missing from the present assemblage, but had occurred earlier (Then-Obłuska 2016c).

MARINE MOLLUSK SHELLS

Two marine mollusk species of Red Sea origin were found, *Cypraea annulus* sp. and *Marginella* sp. The former was recorded in all three of the tumuli, the latter solely in T.7. Nine complete shells and one shell fragment were identified as *Cypraea annulus* sp. (Z1/27, Z1/30, Z4/52.1–2, Z7/8.1.1–4, Z7/9.1, Z7/10.1) [***Fig. 1***]. They were perforated by removing the convex part of their bodies, which resulted in large hole openings. Five cowry shells identified as *Cypraea annulus* sp. were found in previous seasons, including one from tumulus T.7 discovered in 2011 (Then-Obłuska 2016c: Nos Z7/1 – new number Z7/79, Z12/2, Z27/5). Similar specimens were discovered in post-Meroitic Tumulus 4 on Uli Island (Godlewski, Obłuski, and Zielińska 2005: Fig. 8). Interestingly, a necklet of cowry shells came from a camel burial found under a large tumulus in Firka (Kirwan 1939: 3, Object A11/5).

Two *Marginella* sp. shells were found in T.7 (Z7/8.2, Z7/9.2). Their apices were removed. *Marginella* sp. shells perforated in the same way were found in a late antique

trash dump in Berenike (Then-Obłuska 2015b: Fig. 1:6) and in a post-Meroitic Ashkeit grave (Then-Obłuska in press b: Pl. 2.4). *Marginella* sp. specimens known from Meroitic and early Roman bead assemblages rather tend to have their bodies removed (Then-Obłuska 2015a; 2015b).

MINERALS AND STONES

Stone beads were produced using one of two techniques: perforation from either one or both ends.

Stone beads drilled from one end

Most of the beads were drilled from one end and they are characterized by truncated conically-shaped perforations. Among the 16 beads there are examples that are truncated and conical (Z4/49.1–4, Z4/175), globular (Z4/50.1), long and ellipsoid (Z4/176, Z4/178) and pear-shaped (Z4/48.1–2) [***Fig. 2***].

Small beads of black steatite, and white and red chalcedony, are the most characteristic types in late post-Meroitic

Fig. 1. Marine mollusk shell beads (PCMA Early Makuria Research Project)

Figures designed by the author. Photos in the figures by Adam Kamrowski and Zofia Kowarska. Drawing and reconstruction in Fig. 14 by Marta Momot. Objects illustrated in the figures are identified by their find numbers. Lower case letters indicate different views. Scale = 10 mm.

Fig. 2. Stone and silver-in-glass beads (PCMA Early Makuria Research Project)

el-Zuma (Then-Obłuska 2016c). They have already been identified in the Fourth Cataract region. They are also known from many post-Meroitic sites in Lower Nubia (Then-Obłuska 2016a; 2016c and references), including the royal cemeteries of Qustul and Ballaña (Emery and Kirwan 1938: Pl. 43, Types 53–54 =JE [= Egyptian Museum, Cairo] 80899, 70264, 70275, 70260, personal observation). White, red and black beads were found strung alternately at the latter site. Furthermore, truncated conical beads made of a variety of stones were found on the neck of a king buried in Tomb 80 at Ballaña (Emery and Kirwan 1938: 211, Cat. No. 152, Pl. 46C =JE 70258).

Stone beads drilled from both ends

Some beads were perforated from both ends, resulting in a double parallel shape of the perforations. Examples include four large transparent rock crystal beads (Z4/48.3) [see ***Fig. 2***], along with similar ones discovered in 4th–7th century Kharga in the Western Desert, Egypt (MET [=Metropolitan Museum of Art, New York] 25.10.20.96; 31.8.33, personal observation). In Nubia, beads of this kind were found only on the necks of kings from the Ballaña burials: Tomb 80 (Emery and Kirwan 1938: 211, object B.80-130, Cat. 155 =JE 70283) and Tomb 95 (Emery and Kirwan 1938: 212, object B.95-68, Cat. 157). The clarity and transparency of this material is said to have been especially valued in religious spheres as a symbol of purity (e.g., Dubin 2009: 77). A few rock crystal beads were discovered in an early Christian context in the Church of the Granite Columns in Dongola (Then-Obłuska 2013: Fig. 3:1).

Two large lenticular beads of dark carnelian or garnet were picked up from a context associated with tumulus T.7 (Z7/10.2 and Z7/16) [see ***Fig. 2***]. They measure approximately 23 mm in diameter. Sawing traces visible next to the hole openings are typical of Egyptian and Nubian stone perforating (Then-Obłuska 2015a; 2015b). A bead of this kind was found in a tomb at el-Detti, a cemetery contemporary with the site at el-Zuma (Then-Obłuska 2016a: Fig. 1F, col. Fig. 3F). Similar large lenticular beads were found on the left arm of a man buried in Ballaña Tomb 9 from the 4th century AD; this man was apparently a warrior (Emery and Kirwan 1938: Pl. 38B: B.9-3; Wenig 1978: 309, Cat. 309, personal observation). Tomb B.9 is dated to AD 430/440 (Török 1986: 197). However, another two bracelets were found on the right and left wrists of an adult queen in Tomb B.47 (Emery and Kirwan 1938: Pl. 38A: B.47-26, 27), dated to AD 430. Similar beads are exhibited at the Sudan National Museum (SNM 3230); they were registered as coming from the Oxford Excavations at Firka. Indeed, the beads were found as a bracelet on the body marked as E, that of an adult in Tomb A.11 at cemetery A (Kirwan 1939: 6, object A.11/62, Pl. XX: Type 5a, described as carnelian). The Firka site is considered to be of rather late date, that is, AD 490–570 (Williams 1991: 12).

Z7/10.3 is a perforated pebble pendant [see ***Fig. 2***]. Traces of sawing are visible next to the hole opening.

FAIENCE

The total number of faience beads found in tumulus T.4 amounts to 569 (Z4/45–47, Z4/137, Z4/177, Z4/179, Z4/209)

[*Fig. 3*]; tumulus T.7 yielded 10 such beads (Z7/8.3), added to the 15 beads discovered in 2013 (Then-Obłuska 2016c: Z4/3.1). Short and standard beads measure from 3 mm to 6 mm in diameter and from 2 mm to 4 mm in length. Together with the long tubular beads, they make for the more than one thousand preserved specimens constituting an overwhelming majority in the el-Zuma bead assemblage (Then-Obłuska 2016c). These beads are common finds at Lower Nubian and the Fourth Cataract sites (e.g., Then-Obłuska 2014: Pl. 2; Longa 2011: Fig. 4; Then-Obłuska 2016a) and extend south to the Sixth Cataract region (Pokorná et al. 2014), to Botri south of Khartoum (Bashir 2007: Pl. 5), and to the west of the White Nile in Al Khiday (Maritan et al. 2014: Fig. 3).

GLASS

Drawn glass tubes were cut up and the pieces were more or less rounded. Seven examples are made of green, orange, and orange-on-red glass (Z4/51.1–3) [*Fig. 3*]; (another 22 drawn and rounded green glass beads were found in tumulus T.4 in 2013, Then-Obłuska 2016c). Altogether there are 59 beads of this type (together with previously discovered drawn and rounded beads in green, blue, yellow and orange glass) coming from el-Zuma (Then-Obłuska 2016c).

Drawn and rounded beads were excavated in many private and royal Post-Meroitic cemeteries in Lower and Upper Nubia (Then-Obłuska in press b; Then-Obłuska and Wagner in press). Small monochrome beads with rounded ends come from the late antique Red Sea port sites of Berenike and Marsa Nakari (e.g., Then-Obłuska 2015b: Fig. 4:33–41). Those in the form of an opaque orange layer above a translucent red one are rare. Ten such beads were identified from the Serra East 25 site and four from Nag el-Arab. Another two beads were recorded in Berenike (BE95-005-013#72, BE95-005-TS#97).

In general, drawn and rounded beads are well known from South Asian, Indian and Sri Lankan sites, where they were most probably produced (Dussubieux 2001: 105; Hannibal-Deraniyagala 2013: Note 13). Chemical compositional analyses of beads from early Roman Quseir/Myos Hormos in Egypt and from Lower Nubian sites have confirmed their South Indian/Sri Lankan origin (Then-Obłuska and Dussubieux 2016; Then-Obłuska and Wagner 2017).

Fig. 3. Faience and glass beads and pendants (PCMA Early Makuria Research Project)

Two beads appear to be segments of a tube made of two layers of glass with silver foil in-between (Z4/174, Z4/50.2, see ***Fig. 2***). Segmenting glass tubes in open molds is a well-recognized Egyptian technique used in the manufacture of glass and metal-in-glass beads. Silver-in-glass specimens are one of the most characteristic features of post-Meroitic assemblages in Lower and Upper Nubia (e.g., Then--Obłuska 2014; in press b).

A large flattened tear-drop was perforated by rod-piercing the dark blue glass in its upper part (Z4/210) [see ***Fig. 3***]. A similar example comes from a Coptic burial at Matmar (UC59788, tomb 1101). While blue and blue-green glass tear-drop pendants characterize post-Meroitic assemblages in Lower Nubia (Then--Obłuska in press b), they have so far not been identified in Upper Nubia.

METAL SHANK-BEAD AND BELLS

One solid-cast silver fly amulet has a body decorated by stippling. It has a perforation running through the narrow part protruding at the back, making it a so-called shank-bead (Z4/95.2) [***Fig. 4***]. Amulets in the form of shank-beads and made of diverse materials are well known from Meroitic assemblages (Then--Obłuska 2016b; Rose, Then-Obłuska, and Pyke forthcoming). Unlike Egypt where fly amulets were common, they had special significance in Nubia. Made of precious metals, these amulets characterized rich assemblages, starting with a gold fly in the royal A-Group tomb in Qustul (Williams 1986: 306, Pl. 110a, b). Later on, large fly pendants made of ivory and gold were found in elite tombs in Kerma. Many small fly amulets were recorded in Nubia from the period of Egyptian domination in New Kingdom times. Gold flies are known from the First Archaeological Survey of Nubia (Firth 1927: Pl. 28 b), such as the gold fly pendant found in el-Kurru, Ku. 16 tomb of Tanwetamani (MFA [=Museum of Fine Arts, Boston] 21.314). Gold fly pendants with an attached loop or fly beads were also identified as having originated from the Meroitic period. A bracelet, consisting of 13 such gold fly beads, strung together in original order, was found in Meroe, in tomb Beg. W 179, on the right wrist of the deceased (Dunham 1963: Fig. 133 =MFA 24.1092). Another 11 gold fly elements were also found in Meroe (MFA 24.538). Two gold fly pendants were found in the Eastern Desert, in Wadi Terfowi, tomb D 16.1. Each fly has a suspension loop on its head (Castiglioni and Castiglioni 2004: Cat. 106=SNM 31347). Last but not least, six silver toe rings, consisting of a ring and an attached fly were found in the Nobadian royal Tomb, B. 47, at Ballaña (Emery and Kirwan 1938: Pl. 42, object B.47-48). A similar fly ring was also found in the large tumulus tomb at Firka, A.11/55 (Kirwan 1939: Pl. XXI). Although the fly shank-bead from the el-Zuma tomb has no strict parallel, it is an example of an elite style that was popular for a long time in Nubia.

Small metal bells, found in tumulus T.4 at el-Zuma, were made of silver (Z4/11), copper alloy (Z1/33) and copper alloy with an iron clapper (Z4/82) [see ***Fig. 4***]. A better-preserved specimen was cast with a half-elliptical profile and outlined rim. On the top of the bell there was a hole, both for the passage of the wire forming the handle and of the hook for the clapper. The clapper is made of wire bent at its extremity to clasp the handle. Copper-alloy bells similar in their construction

Fig. 4. Metal fly amulet and bell pendants (PCMA Early Makuria Research Project)

were found in two other el-Zuma tumuli (Then-Obłuska 2016c: Figs 8:Z15.9, 9:Z16.24). The el-Zuma examples resemble a specimen known from the Napatan site of Hillat-el-Arab, although they can also be associated with some post-Meroitic objects (Vincentelli 2006: A.18:857). They are also reminiscent of two bells from the post-Meroitic graves, T1 and T300, in Nag el-Arab (Pellicer Catalán and Llongueras Campañà 1965: 89, 98, 177, Fig. 33:5; MAN [= National Archaeological Museum, Madrid] 1980/95/20bis and 206bis, personal observation). A very similar bronze specimen was found among the beads from grave S56/T2 on Saffi Island in the Fourth Cataract region.

One of the bells made of copper alloy has an iron clapper (Z4/82) [see ***Fig. 4***]. The bell is 17 mm in diameter. The handle is made of a wire bent at its extremity into a hook to clasp the clapper. However, the clapper is not bent, but simply perforated. Three bronze bells with iron clappers on a string were found around the neck of a camel at Firka (Kirwan 1939: Pl. 16:A. 11/6). A chain bracelet with bronze bells and iron clappers similar to the el-Zuma example was found with a human body (Kirwan 1939: 6, Pl. 18:A.11/50).

The copper-alloy bell Z1/33 is larger in terms of its diameter [see ***Fig. 4***]. Traces of a most probably iron handle and clapper can be discerned at the top and inside the bell.

Although the bell could have been part of a copper-alloy necklace dated to the late Roman period (Petrina 2014: Fig. 8), small

Fig. 5. Earrings (PCMA Early Makuria Research Project)

metal bells might have been employed in a variety of adornment forms in Nubia in the period under discussion (Then--Obłuska 2016c and references therein). In one case in el-Zuma, the bells were found in a burial chamber next to a human skull (Then-Obłuska 2016c: object Z16/24). It is not certain that the bells from tumuli T.1 and T.4 were associated with a necklace worn by a person.

EARRINGS

Two earrings were found in el-Zuma. In both cases, a pendant was attached to a crescent-shaped hoop. One was a fine copper-alloy – most probably brass – earring found together with a silver bell pendant in Tumulus T.4 at el-Zuma (Then--Obłuska 2016c: Fig. 12:Z4/12) [***Fig. 5***]. The earring measures about 12 mm in width and 22 mm in height. It consists of two parts, the hoop and the pendant, soldered with an alloy. The hoop is a crescent-shaped penannular ring with a circular section. One terminal is markedly thinner than the other. Crescent-shaped earrings[1] are known from Nubia (Allason-Jones 1991: Cats 17–18, and references therein) and Aksum (Phillipson 2000: 344, Fig. 299e; Munro-Hay 1989: Fig. 15.189). Similar hoops of diverse metals are known from Nubia from the period under discussion, such as the upper part of pendant earrings, as in the case of this example from el-Zuma (Then-Obłuska 2016c and references therein).[2] The wire pendant attached to the hoop has two rolled up spiral terminals with thinned ends. One segment was beaded by using a rolling technique and it is bent to solder onto it a semi-spherical boss made of sheet metal. The side of the boss protrudes out onto what was presumably the earring's front side. Loops with spiral ends constitute a very common element of ancient jewelry, including Nubian and pre-Aksumite (Then-Obłuska 2016c and references therein).

The second earring, made of gold, also has a hoop and pendant soldered with an alloy (Z1/32) [see ***Fig. 5***]. The hoop is again a crescent-shaped penannular ring with a circular section. The pendant attached to the hoop consists of two conical caps containing a faded coral bead in between. The upper cap is made by assembling a ring of beaded wire at the top and bottom, and four looped wires soldered between them. The looped wires have outwardly bent ends. The lower cap was made with the same technique, but the bottom has a claw setting additionally soldered onto it. Similarly constructed earrings with a hoop and a pendant, made of silver and with a coral bead, are known from the royal Nobadian cemeteries at Qustul and Ballaña (Emery and Kirwan 1938: Pl. 41A: B.47-21, 53, B:Q.14-65, C:Q14-59 =JE 70361a,b, 7035?a,b, 70365a,b). A pair of silver hoop earrings with coral bead was also found in Grave 64 at Cemetery E at Gamai (Bates and Dunham 1927: 59, Pls 38.2.D, D', 68: Fig. 37; =Peabody Museum 24-24-50/B4037)

RING

The gold or copper-rich gold finger ring consists of a lozenge bezel (set with mosaic glass) and a hoop [***Fig. 6***]. The box-type shield of thin beaten metal is bordered by beaded wire, while the hoop, round in

[1] For Late Meroitic metal lunate nose-rings with pointed ends that are much larger in size, see Żurawski 2010: Fig. 43.

[2] The style of a lunate hoop with soldered pendant(s) was observed to exist already in the Meroitic period (e.g., Dunham 1963: W27 (45–50)?, Figs 79f, 80f).

section, is grooved. The glass inlay is made of mosaic glass cane section in a checkerboard pattern of yellow, red, white, and black. Checkerboard mosaic glass has been identified mainly in Meroitic and post-Meroitic bead assemblages (e.g., Then-Obłuska 2015a). Globular checkerboard beads were found in post-Meroitic Nubian royal tombs (Emery and Kirwan 1938: Pl. 46D, No. 157) and post-Meroitic contexts at Serra (Williams 1993: 230; OIM E19841). It is uncertain whether these are reused Meroitic items. Checkerboard glass with diverse color patterns is known to have been in use as of late antiquity (Lankton 2003: Fig. 7.0, 596) and the production of checkerboard mosaic beads continued into the medieval period (e.g., Siegmann 1997: 138, Pl. 3, 4 – H11/A1).

A similar ring but with a bezel of thin beaten gold set with a beryl was found in Ballaña (Emery and Kirwan 1938: Pl. 42B, object B.2-15). A ring with a similarly executed grooved hoop was found at Gamai (Bates and Dunham 1927: Pl. LXXVIII: Figs 6, E/R52, 18, Z4/R11). Two bronze finger-rings with beaded hoops and simple silver bezels were found at Kosha (Kirwan 1939: Pl. XIX:K1/23). A silver ring from Soba is said to have had incised grooves (Allason-Jones 1991: 126, Cat. 3).

CHAINS

Two types of chain were found in el-Zuma: single and double loop-in-loop. The first is a fragment made of copper alloy or copper-rich gold, in the form of a basic single loop-in-loop chain [***Fig. 7:Z4/98***]. It has two cross-shaped elements: a perforated cross with flared arms simply threaded onto the chain, and a decorated cross with wire loops at its ends attached to the chain. One loop wire is bent upward, while the other is bent to one side.

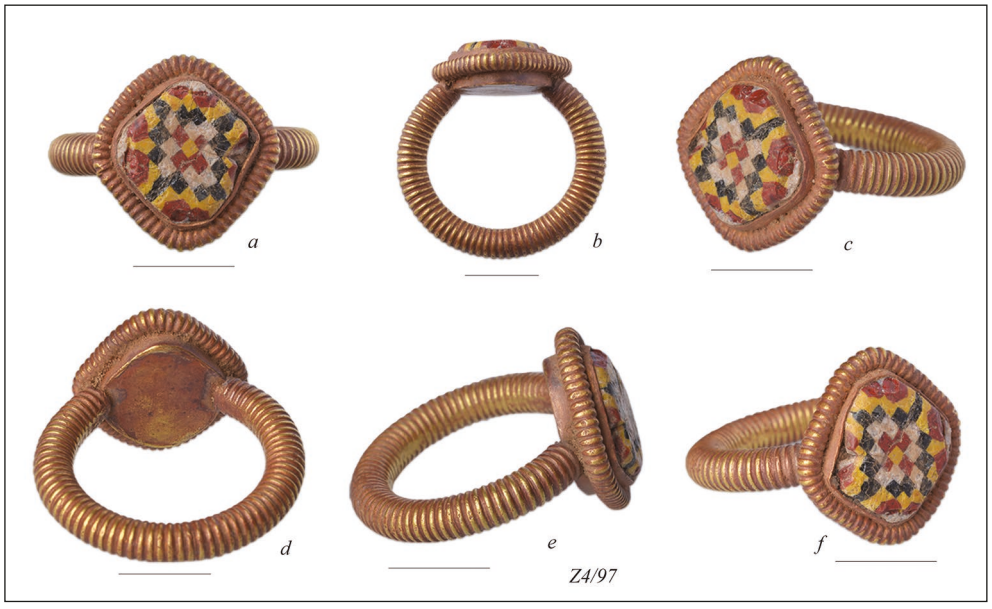

Fig. 6. Ring (PCMA Early Makuria Research Project)

Fig. 7. Chain fragments and a pin (PCMA Early Makuria Research Project)

The second is a silver basic double loop-in-loop chain [see ***Fig. 7:Z4/113***]. In contrast to single loop-in-loop chains, in which the link being added is inserted through the last link on the growing chain, double loop-in-loop chains are made by inserting a link through both the next-to-last and the last links (Stark and Smith 1997). This chain type can be observed attached to archer bracelets made of metal sheet, most probably to be hung on a thumb (Emery and Kirwan 1938: Fig. 86C, Pl. 52A, B, objects B.80-49, B.9-28). A much larger (in terms of its thickness) chain of this type was also used for the silver horse equipment bits in Q.3-93 and Q.31-48 (Emery and Kirwan 1938: Pl. 59).

PIN

A silver pin consists of a long thin shaft, circular in section, with a round end [see ***Fig. 7:Z4/212***]. It is 70 mm long, 2.5 mm thick and 6 mm in head diameter. Its thickness at the terminal was smaller. It might have been a hairpin. Still, in Roman times hairpins were mostly carved in bone and ivory, while dress pins were usually made of metal (Rodziewicz 2007: 28–30).

CABOCHONS AND SETTINGS

Fifty round, oval and rectangular cabochons made of precious stone and glass were found in the tunnel of tumulus T.4 at el-Zuma [***Fig. 8***]. Some of them (26 in all) were mounted in silver settings. Additionally, eight beaded settings (Z4/144.1, Z4/146.1–3, Z4/147, Z4/148, Z4/149, Z4/171) and many fragments were collected (Z4/138, Z4/144.2–6, Z4/145, Z4/150, Z4/172.1–8).

Round cabochons outnumber the oval and rectangular ones. In the case of one rectangular cabochon, the exterior part was faceted. Some are lentoidal in shape. Most of the cabochons were made of carnelian or red agate, while the remaining ones seem to be garnet, green or green and yellow glass, and differ in size. With regard to round cabochons those measuring 7 to 11 mm in diameter dominate (Z4/118–125, 27–131, 136, 140–141, 154–158, 161, 164, 166–168, 170). Smaller ones, 4 to 5 mm in diameter (Z4/126, 151, 153), or larger measuring 15.5 mm in diameter (Z4/163) are also found. The largest oval cabochon (Z4/159) measures 16 mm in width and 22 mm in length, and the smallest ovals are 6 mm by 11 mm (Z4/152, 173). The rectangular cabochons are 10 mm by 14 mm in size (Z4/114, 117).

The bottom and the sides of the box-type settings are made of thin beaten and soldered silver, and are bordered with beaded wire, which goes around the sides. The settings are filled with white plaster to keep their shape and to facilitate the setting of the cabochon. The metal sheet at the bottom is usually partly preserved and shows an irregular layer of plaster. The plain surface of the plaster reveals the negative of the cabochon that was once set in it. Most of the round specimens measure from 11 mm to 15 mm in diameter (Z4/118–125, 127–130, 136, 164, 166–168). The smallest are 9 mm in diameter (Z4/126) and the largest is 20 mm in diameter (Z4/163). Oval settings measure 10 mm by 14 mm to 17 mm by 21 mm (Z4/115, 116, 162, 173). The rectangular settings are 14 mm by 17 mm and 14 mm by 19 mm in size (Z4/114, 117).

Silver settings with stone cabochons were found at the Nobadian royal cemetery of Qustul in the following objects: a jeweled collar that was an element of horse equipment (Emery and Kirwan 1938:

Fig. 8. Cabochons and settings (PCMA Early Makuria Research Project)

Pl. 62A, Q.3-93, 94), a child's bracelet (Emery and Kirwan 1938: Q.14-60 Pl. 38F), and rings Q.14-84 (Emery and Kirwan 1938: Pl. 42B,D), however they lacked the beaded wire decoration. Furthermore, two bracelets from Ballaña (Emery and Kirwan 1938: Fig. 80, Pl. 40: object B.47-14, and B.47-15 =The Nubian Museum in Aswan) and two from the royal cemetery at Meroe (Dunham 1963: Fig. 126, 127a =MFA 24.1001, 24.1002, W 130 (55–65?)[3] were encrusted with round, oval and rectangular settings. However, unlike the Nobadian crowns and the el-Zuma finds, the bracelets lack the beaded settings around the small cabochons. Approximately 50 round, large and small, oval and rectangular bezels of carnelian, garnet, emerald and green glass adorned three of the Nobadian crowns; thus, the 50 cabochons from el-Zuma would definitely have made at least one of the crowns as illustrated in Ballaña (Emery and Kirwan 1938; Török 1988). The Ballaña crowns were simple circlets or circlets encrusted with stones. Additionally, some of them have elements attached at the edges,[4] sometimes encrusted with stones. The Nobadian crowns were constructed of silver, iron, plaster and wood, and often encrusted with precious stones. The circlets were fastened at the back with a metal strap and nails. All the circlets were decorated with embossed friezes (Emery and Kirwan 1938: 183–186).

Except for B.6-20 and B.4, found in one of the princes' tombs, crowns decorated with stones were found in royal tombs (Emery and Kirwan 1938: B.47-13, Pl. 35A; B 80-48, Pl. 33A; B.95-22, Pl. 32B; B.114-11, Pl. 34A; B.118-29, Pl. 36A) dated to between AD 420 and 490 (Török 1986: 197). Some of them were encrusted solely with round and oval cabochons (B.6-20, B.47-13, B.80-48). Others were decorated with large round, oval and rectangular settings arranged in three rows (B.95-22, B.114-11, B.118-29). Stone settings are found in the upper and lower rows, as well as in the middle row, alternating with embossed kings' busts in B.95-22 and B.114-11, and *udjat* eyes in B.118-29. Additionally, small stones adorn the *nef-nef* crown of embossed kings' busts motifs (B.95-22) and *udjat* eye motifs (B.118-29). Furthermore, the eyes of a ram's head attached to the circlet's edge are set with tiny cabochon settings in B.95-22 and B.114-11, without beaded wire. It should be added that some of the cabochons in B.114-11 and B.118-29 are made of green glass.

The three tombs in which crowns with round, oval and rectangular settings (B.95-22, B.114-11, B.118-29) were found have been dated to a period between AD 470 and 490 (Török 1986: 197).

OTHER DECORATED METAL FINDS

Many pieces of embossed metal sheet, beaded wires and cabochon settings, as well as studs, nails and staples were found in tumulus T.4, and a few in tumulus T.7 [***Fig. 9***]. Four fragments of a flower-embossed silver sheet, Z4/23.13–16, find exact parallels among certain metal fittings

[3] The bracelets were found with a faceted long square bicone of carnelian that belongs to the post-Meroitic repertoire (e.g., Then-Obłuska 2016c).

[4] Four types were distinguished according to the elements at the edges: a circlet with a ram's head at the front and surmounted by a plumed crest on the forehead and uraei around the edge of the circlet, the same without uraei, a circlet surmounted by three plumed crests, a circlet with uraei around the upper edge (Török 1988: 169).

Fig. 9. Decorated metal fittings (PCMA Early Makuria Research Project)

found in Ballaña. In one case, a pattern was embossed on a scabbard sheet found in royal tomb B.80-36 (Emery and Kirwan 1938: 220, Pl. 49D), dated to about AD 420 (Török 1986: 197, Fig. 81A). The Ballaña scabbard consists of two flat pieces of wood held together with a sheet of silver embossed with a variety of patterns (Emery and Kirwan 1938: 219, Fig. 81A–D). The same motif can be observed on the back side of a saddle fitting that was an element of horse equipment (Emery and Kirwan 1938: object Q.36-165, Pl. 63E). Tomb Q.36 was dated to about AD 400 (Török 1986: 197). However, while sword fragments have been found, no horse bones have been identified from tumulus T.4 (U. Iwaszczuk, personal communication).

There are a few fragments of embossed silver 18-petal rosettes, about 20 mm in diameter (Z4/23.17–22) [see ***Fig. 9***]. Some fragments have staples preserved in certain places. Whereas the same rosette motif can be observed on a saddle fitting from Qustul tomb Q.31-40 (Emery and Kirwan 1938: Pl. 63G), a silver wreath with a series of rosettes that has been illustrated from Ballaña would be a better fit for the el-Zuma remains (Farid 1963: 101, Fig. 57-1, Pl. 26).

Many fragments of elongated plaques were embossed with a scarab motif with a *hem-hem* crown and an *ankh* cross between the rear legs (Z4/23.1–3, 5–6, 8–12). The best-preserved fragment, Z4/23.1, measures approximately 38 mm by 28 mm. Fragments Z4/23.3 and Z4/23.6 appear to be parts of one element. The *hem-hem* crown is set above horizontal ram's horns, and consists of stylized bundles of reeds and a sun disk, flanked on each side by a single ostrich feather and a uraeus. No parallels have been found for the plaques so far. However, the scarab motif is reproduced in repoussé technique on a jeweled horse collar (Emery and Kirwan 1938: Pl. 62A) and embossed on an archer's bracelet (Emery and Kirwan 1938: Pl. 86C). It remains a moot point whether the scarab was a motif applied frequently, alongside the rosettes, on Early Makuria crowns.

Three fragments of a silver sheet with embossed plumes were found (Z4/95.1–5) together with the fly bead-shank mentioned above and a nail. No parallel for such a motif could be traced so far.

Z4/23.24 [see *Fig. 9*] is a 12-petal rosette stud. Two anklets of red leather decorated with a series of silver disks in the form of rosettes are mentioned as having been found in Burial C of prince's tomb B.6 at Ballaña. The leather was cut into narrow strips and hemstitched with the disks attached with wire pins (Emery and Kirwan 1938: 187, Cat. No. 15). The tomb was dated to about AD 420 (Török 1986: 197). Leather elements with lead rosette studs were also found in private grave R 49-5e in Qustul (Williams 1991: Pl. 66c, Fig. 53c,e,f). They have been interpreted as armor studs.

Two rosette plaques are probably made of debased gold sheets (Z4/213.1–2). They measure 18 mm in diameter. The rosettes were punched with a patrix on a mould and consist of 17 petals. They are perforated in the middle. Both examples have a nail driven through the perforation. They might be leather decoration, similarly to the above-mentioned examples.

A copper-alloy badge takes the form of a round shield with a punched cross with flared arms and four nits (Z7/7). It measures about 40 mm in diameter and might have served as a leather ornament.

A similar motif of a cross with flared arms is punched into a bronze pan found in one of the Ballaña tombs (Emery and Kirwan 1938: Pl. 76B, B. 118-5).

LID KNOB

One copper-alloy object (Z4/96) is a profiled cylinder made out of a beaten metal sheet [***Fig. 10***]. At one end, the edge was

Fig. 10. Lid knob: top, bottom and side views (PCMA Early Makuria Research Project)

bent outward and decorated with bosses. The top of the cylinder is decorated with a beaded ring that has the function of a setting for a carnelian bead. The bead is most probably threaded onto a wire that ends with a spherical ball. Its shape and construction are the same as of the metal knobs known from Ballaña, although they differ in the type of metal used. Silver cups with convex lids surmounted with a cylindrical knob are known from Ballaña tombs (Emery and Kirwan 1938: Pl. 66C-F). A carnelian bead is set on the top of one of them, B.6-11 (Emery and Kirwan 1938: 275, size 13.4 cm in height). Again, the above-mentioned objects were found in a prince's tomb dated to the period between AD 420 and 440 (Török 1986: 197).

IVORY CONTAINERS

All the fragments of ivory containers are small in diameter and they feature external decoration consisting of incised lines and dotted circles. Four ivory fragments form one cylindrical container [***Fig. 11***:Z4/8.3, Z4/8.19, Z4/54]. It has its top edge cut back to receive the lid, and there is a step back inside to fix the bottom. It measures 26 mm in diameter. The interior is smoothly finished, while the exterior surface is decorated with four alternating panels. Two of them are made of rows of four incised parallel lines, with four rows at the top and six at the bottom. These bands are alternated with "dot-in-a-circle" rows, three and two accordingly. The other two are decorated with pairs of semicircles with three dotted circles at their ends.

Another fragment [***Fig. 11***:***Z4/8.4***] was part of a cylindrical container with edges cut back to receive the lid and to fix the bottom. It measures 25 mm in diameter and about 45 mm in height. The exterior surface is decorated with rows of incised parallel lines alternated with two rows of a "dot-in-circle" motif. The main panel is decorated with dotted circles which form a swastika meander pattern.

Z4/207 and Z4/221 are most probably fragments of the same object [***Fig. 12***]. The diameter of the top is 25 mm. They form a container with two recesses inside, one on top to receive the lid, the second on the base to fix the bottom. Tiny traces of blue-green and red paste can be discerned in the incised lines and dotted circles. Bone plaques with colored geometric patterns have been found in Alexandria (Rodziewicz 2007: 55–56, Cat. Nos 82, 83, 87).

Another small fragment [***Fig. 12***: ***Z4/211.1***] originates from a cylindrical container with one edge cut back probably to receive the lid. The exterior surface is decorated with three incised bands consisting of three and four lines. A row of dotted circles lies between the first and the second linear band. A wide band of dotted circles in triangular arrangements is placed between the second and the third linear band.

A fragment of a cylindrical container (Z4/211.2) has its exterior surface decorated with linear bands alternated with dotted circles in a row. Except for the widest band that is decorated with quadruple dotted circle motifs arranged in a checkerboard pattern, the other bands are simple rows of a "dot-in-a-circle" motif or they are arranged in the form of a garland.

One other fragment (Z4/106) also belongs to a cylinder container. The exterior surface is decorated with a band of four parallel lines between two bands of dotted circles.

The small diameter of the el-Zuma remains would point to their use as toilet containers: kohl tubes or ointment containers. The round pyxides may have also served as dice-boxes (Rodziewicz 2007). Ivory kohl tubes and a vessel have been identified at Gabati (Edwards 1998: 126–127, Fig. 5.11; = 2004: Cat. 177, Fig. 5.12, object 8309) and at Qasr Ibrim cemetery 123 (Mills 1982: object 123.22.15), but they lack the incised decorations. A few ivory and wood kohl flasks and remains of ivory ointment containers were found at the Qustul cemeteries (Emery and Kirwan

Fig. 11. Ivory containers (PCMA Early Makuria Research Project)

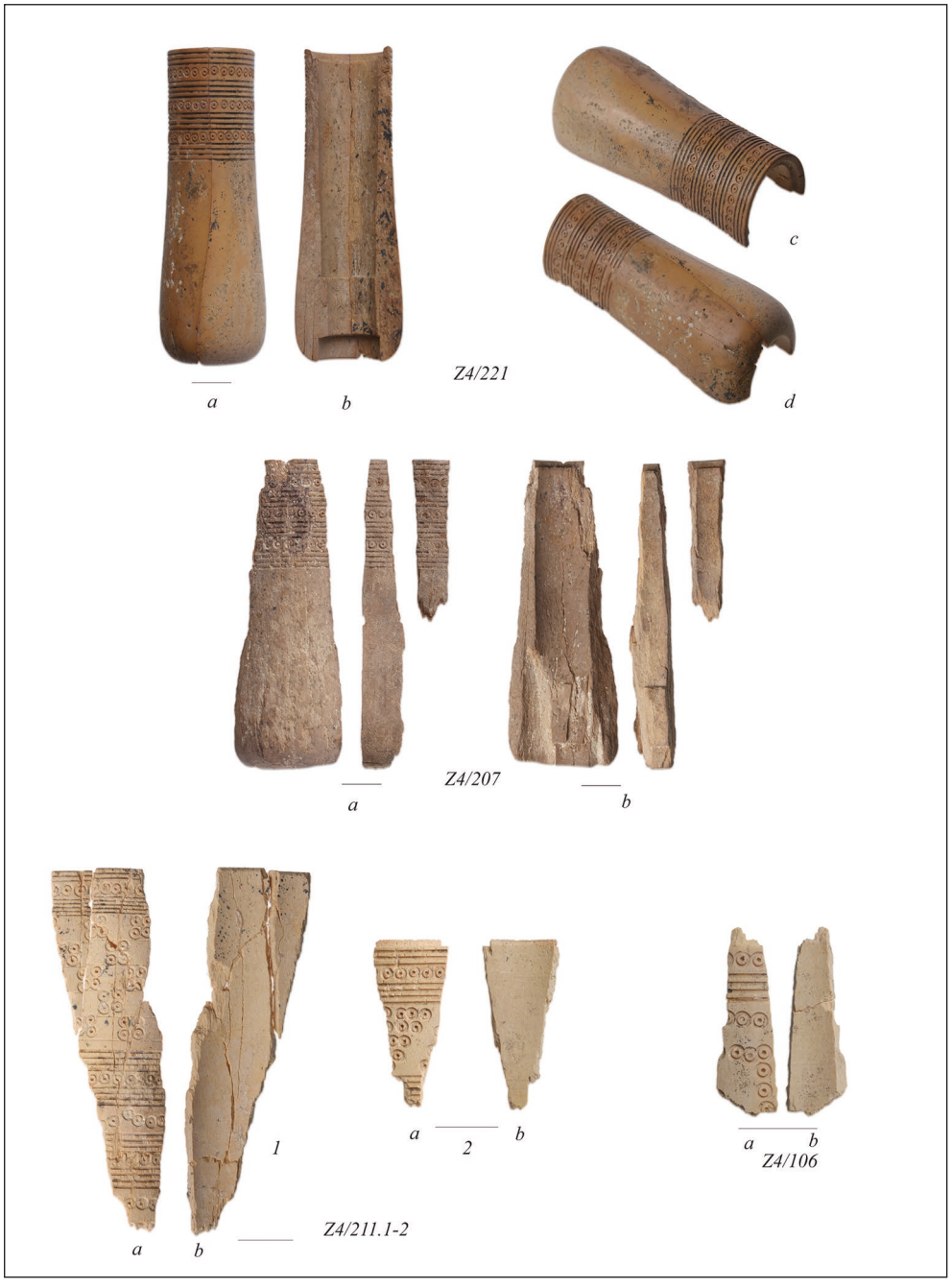

Fig. 12. Ivory containers (PCMA Early Makuria Research Project)

1938: 342–343, Pl. 86; Williams 1991: Fig. 154b).[5] They also lack any decoration in the form of dotted circles or they are figural in shape and do not fit the el-Zuma fragments. Bone fragments decorated with incised lines and dotted circles were excavated in Kharga Oasis, where they were dated to the 4th–7th centuries AD (MET X.606.2a–x). Decoration consisting of incised lines and dotted circles can also be observed on an elongated fragment of a wooden vessel in Wadi Qitna (P 3004) and another unidentified object (P 3005) (Strouhal 1984: 237–238, Fig. 155). An ivory kohl tube, similar in shape and with a similar decoration to Z4/207 and Z4/221, is presently on exhibition at the Bibliotheca Alexandrina Antiquities Museum (BAAM Serial 0907; showcase 24; Inv. Coptic Museum 1077). It measures 12.5 cm in height and is dated to the Byzantine Period (AD 395–641).

INTARSIA AND IVORY GAMING PIECES

Five fragments of an ivory intarsia have been found in el-Zuma in Tumulus T.7. They are floral-shaped but without any incised decoration. The fragments, 1.8 mm to 2 mm thick, form a pattern [***Figs 13: Z7/66, 14:b***] that to some extent resembles an ivory vegetal motif that was set in the central panel of a wooden gaming board as found at Qustul [***Fig. 14:a***]. The board was found in the mound above Tomb 3 (Emery 1932: Pl. III, bottom; Emery and Kirwan 1938: 345, Pl. 87A, Q.3-95, Cat. No. 742; currently in the Nubian Museum, Aswan), and it was decorated with three rows of 12 squares of a floral design. Each

Fig. 13. Intarsia and gaming pieces (PCMA Early Makuria Research Project)

[5] For a bronze kohl flask with a lid from Ballaña, see Farid 1963: Fig. 65.2, Pl. 38B, from Jebel Adda (Millet 1963: 163).

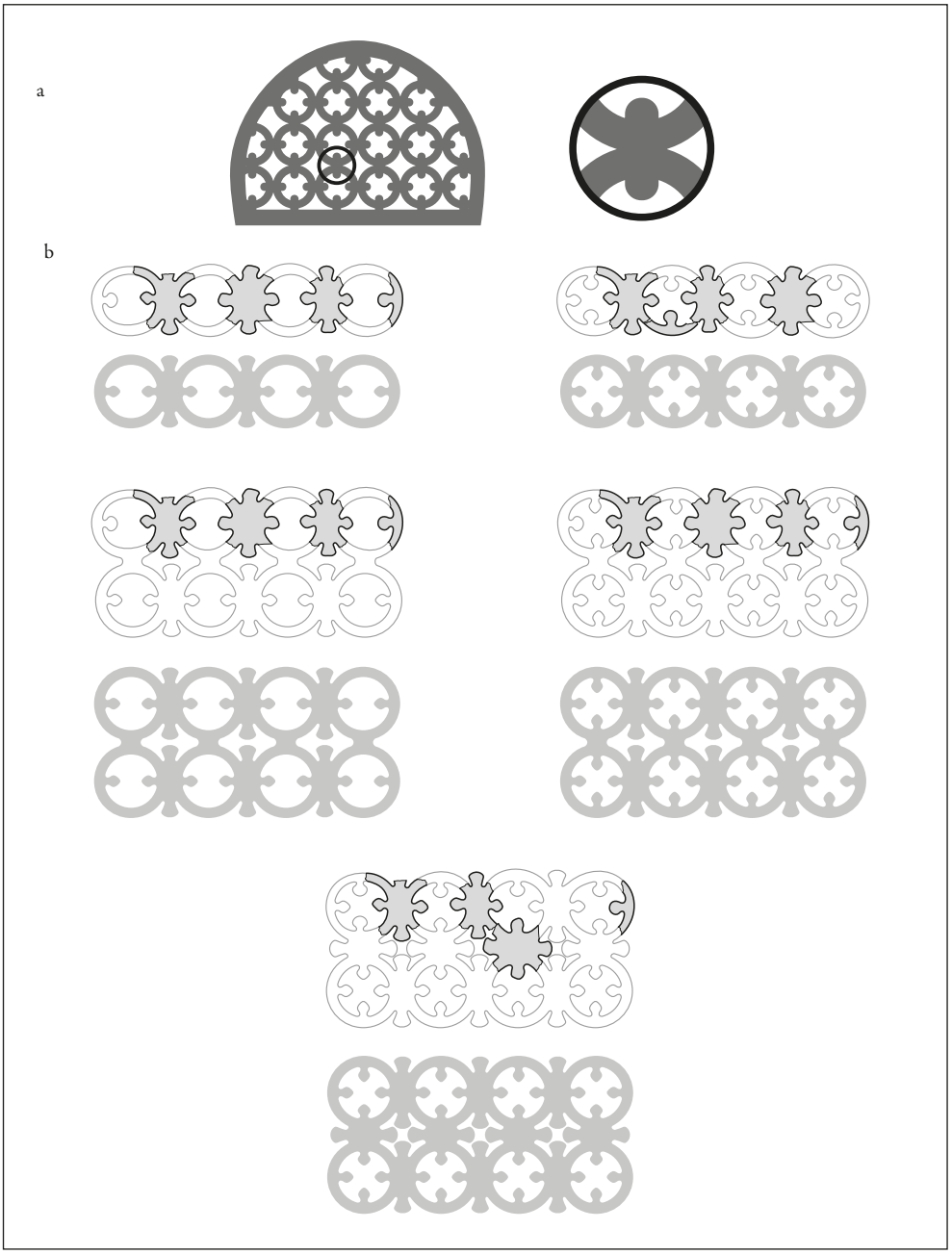

Fig. 14. Intarsia patterns: a – pattern on a gaming board from Qustul, not to scale; b – reconstruction of various intarsia patterns, not to scale (PCMA Early Makuria Research Project)

line is divided by center pieces, in the form of a circle and two semi-circles with small bolted rings inside, into groups of six. The gaming board measures 77.5 cm by 37 cm. This would mean that the central panels are about 8.5 cm in diameter, while the decorative fragments, analogously to the el-Zuma ones, would be about 1 cm wide. Thus, in terms of their size, the el-Zuma remains would correspond to the Qustul board decoration.

Furthermore, half of a large game piece made of ivory was found in the same el-Zuma tumulus (Z7/83). It measures about 40 mm in diameter and 40 mm in height. It is possible that Z7/82, Z7/83 and Z7/84 (not illustrated) are fragments of gaming pieces.[6] A leather bag with similar ivory gaming pieces was found beneath the board in the said Qustul tomb (Emery and Kirwan 1938: 345, Pls 87B,C,D,F). It contained a set of 15 parallel white ivory game pieces, together with 15 black wooden pieces, five dice and remains of a *fritillus* (dice-box) (Emery and Kirwan 1938: 345, Pl. 9F, 87C. A:Q.3-96). Furthermore, two ivory gaming pieces were found by the Finnish Expedition together with a bone die in grave 154 at Gamai Site 2. One is nearly cylindrical in shape with the top decorated with concentric circles (22 mm in height and 20–25 mm in diameter) (Donner 1998: 282, Object 2/154A:11). The second item, Object 2/154A:15, is similar in shape and size to the el-Zuma and Qustul pieces and measures 50x45x45 mm (Donner 1998: 282, Pl. 201:4).

A fragment of bone dice showing a "five", marked with dotted double circles, was found in the same tomb (Z4/108). The fragment measures 15.5 mm in length. Various bone fragments, including one with a dotted circle incision (Z4/180, not illustrated), might also belong to another die. They measure about 15 mm in length. Bone/ivory dice were found throughout the late Roman Mediterranean world (e.g., Rodziewicz 2007: Cat. 558, Alexandria; Davidson 1952: Pl. 100, No. 1745, Corinth). Similar dice of bone and ivory can be traced to post-Meroitic sites in Lower Nubia, for example, in a single mound burial at Faras East (Säve-Söderbergh 1981: 68, object 19/1:13, Pl. 95:3, 12x14x16 mm, AD 500–600) and at Site 2 in Gamai East (Donner 1998: 282, Pl. 209:3, object 154A:4, 10.6x9.6x8 mm), and they also accompanied the Qustul gaming board and pieces mentioned above (Emery and Kirwan 1938: Pl. 87F).

The Qustul game board was found in a royal tomb dated to about AD 380 (Török 1986: 197). Bell (1979: 28–29) suggested that the board has the same layout as a *duodecim scripta*, for which there was apparently a preference in the early Roman period, replaced later by a variant called *tabula* (Bell 1979: 31). In Nubia, remains of *duodecim scripta* game boards, gaming pieces and dice were found in two Meroitic graves from the 1st century AD at Sedeinga (Crist, Dunn-Vaturi, and de Voogt 2016: 136; de Voogt, Francigny, and Baas 2017 and references). However, their inlays lack the sophisticated decoration of the boards found at Qustul. According to László Török (1988: 102), the decorative ivory inlays of the Qustul board imitate *opus interrasile* jewels, suggesting that

[6] Two likely gaming pieces were also found in the el-Zuma Tumulus Z4 (Z4/53, not illustrated here). They are much smaller (about 2.5 cm in length) than the newly excavated examples.

the game board was made sometime in the last few decades of the 4th century AD. In the history of Roman games, the el-Zuma fragments would constitute the southernmost example of a *duodecim scripta* board found in a grave context, which is dated between the mid-5th and mid-6th century AD.

DISCUSSION AND CONCLUSIONS

Although found in robbed and not fully excavated contexts, the Early Makuria adornments from the largest el-Zuma tumuli represent a wide range of materials and types identified at other contemporary private and royal Nubian cemeteries. While silver-in-glass, faience, and small stone beads perforated from one end are widely found at post-Meroitic sites throughout Nubia, the el-Zuma assemblage contributes a few bead types that are quite rare. These are large beads of carnelian and rock crystal, a flattened tear-drop pendant of cobalt blue glass and green and orange-on-red glass beads. The green and orange-on-red beads are made of drawn and rounded glass of Sri Lankan/South Indian origin.

Imported glass beads have been recently identified in tombs at private cemeteries in post-Meroitic Nubia (Then-Obłuska 2016a; 2016c; in press b). Furthermore, the body of a queen from Tomb 47 in Ballaña was richly adorned, also with four anklets made of South Asian drawn and rounded orange glass beads (JE 88820). What is more, she was found with large lenticular carnelian beads of a type usually found in warrior tombs. Thus, it might be that the large carnelian beads found at el-Zuma under tumulus Z7 belonged to the burial of either a queen or an elite warrior.

Interestingly, glass beads are not present on the kings' bodies in Tomb 80 and 95 at Ballaña (Emery and Kirwan 1938). Instead, local types, i.e., stone, faience and ostrich eggshell, were used to make the kings' beadwork, necklaces and bracelets. The rock crystal beads, such as the ones from T.4 (Z4/48.2-3), have so far only been found with the bodies of Nobadian kings. Large truncated cone stone bead types, illustrated by Z4/49.2, were also found with a king's body in Ballaña. The presence of rock crystal and truncated cone stones would support the idea of a king's burial in tumulus T.4. The presence of glass beads might indicate additional burials under tumulus T.4.

Török (1988: 174) claims that it was a workshop of Egyptian origin that manufactured the Nobadian silverwork. It is characterized by embossing done with the help of matrices instead of proper repoussé work, the white plaster fillings of the jewels, and cabochon box settings bordered by wire. Török emphasizes that both royal insignia and objects of everyday use were made in the same royal workshop by Egyptian silversmiths, at least at the beginning, who had brought Egyptian matrices with them. The finding of similar silverwork in Nobadian and Early Makuria tombs suggests the existence of a prosperous, mobile workshop run by a family over a few generations, that is, over a long period of time and across a wide area, though it remains uncertain whether it was Egyptian or not.

While Egyptian religious iconography (e.g., the scarab motif) remained strong in post-Meroitic Nubia and some elements of jewelry style, like the hooped earrings, were

continued since the Meroitic period, some jewelry techniques used in late antique Nubian adornments (e.g., beaded wire) were inspired by Byzantine workshops rather than the pharaonic Egyptian ones.

The royal jewelry of Meroe was produced mainly with the repoussé, cloisonné and enamel techniques, as well as granulation (e.g., Markowitz and Doxey 2014; Rose, Then-Obłuska, and Pyke forthcoming), but the post-Meroitic craft employed embossing and cabochon box-settings and beaded wire. It must be emphasized that beaded wire appears to be a characteristic feature of late antique jewelry in Nubia. Aside from the examples of metalwork with beaded wire from royal Qustul and Ballaña (cabochon settings, hoops of earrings, lid knobs, wire bracelets) and el-Zuma (earrings, cabochon settings, a finger ring, a lid knob), more examples come from Gamai and Kosha (rings) (Bates and Dunham 1927: Pl. LXXVIII: Fig. 6, E/R52, Fig. 18, Z4/R11; Kirwan 1939: Pl. XIX:K1/23). Furthermore, a silver beaded wire bracelet with projecting knobs, topped with red glass inlay was found at Firka (Kirwan 1939: 6, object A11/49, Pl. XVII: A11/59[7]). Beaded wires appeared in the Mediterranean world about the 7th century BC, and became a common decorative motif in Byzantine jewelry, and spread in India by or during the Sasanian period (Williams and Ogden 1994; Ogden 1994: 166; 2003: 4–5, Fig. 5).

Silver dominated Nobadian and Early Makuria jewelry metal assemblages. The unplundered Ballaña tombs, such as B.6, 9, 10, and especially 95, 114 and 118, indicate that gold jewels were also incidentally found accompanying such burials. Török (1988: 173) considers the more elaborate pieces, like some bracelets decorated with stones and certain earrings, as undoubtedly imports from Egypt. However, some silver and gold earrings from Nobadian royal cemeteries and from el-Zuma were composed of a bent hoop with an attached pendant. Such a composition is a continuation of indigenous Meroitic style (e.g., Markowitz and Doxey 2014).

Hoop earrings with coral pendants, including the one from el-Zuma, are a characteristic feature of elite jewelry in Nobadia (Emery and Kirwan 1938). In general, coral beads were one of the main Mediterranean products (*Corallium rubrum* sp.) imported to Roman and Coptic Egypt and exported as far as China (Francis 2002: 156). Although known from many Nubian sites, no doubt the largest assemblage of coral beads comes from the royal cemeteries in Lower Nubia (Then-Obłuska in press b; Emery and Kirwan 1938: Pl. 43, Type 8, 9, 17, 27–29, 38). The Mediterranean coral together with the Red Sea mollusk shells and imported Sri Lankan/South Indian glass beads are well known from Red Sea cosmopolitan port sites (Then-Obłuska 2015b; Then-Obłuska and Dussubieux 2016). It might be that mollusk shell and imported glass beads reached the el-Zuma site via the Red Sea ports.

Archaeological traces of pagan religions – Christianity, Judaism and Buddhism have been recorded at cosmopolitan Red Sea port sites (e.g., Sidebotham, Hense, and Nouwens 2008: 144–150; Then-Obłuska in press a). No doubt, Nubia was exposed to Christianity in the post-Meroitic period (Edwards 2001; Dijkstra 2013 and references). The road from the

[7] Note the incorrect description on the Plate in Kirwan 1939.

Red Sea coast across the Eastern Desert into the Nubian Nile Valley might also have been an alternative to the Nile Valley route along which Christian symbols (Z4/98, Z7/7) (e.g., Emery and Kirwan 1938: object B.2-7, Pl. 48F; Williams 1991: 305, Fig. 145c; Edwards 2001; Then-Obłuska 2016c: Fig. 9) arrived in post-Meroitic Nubia.

Archaeological evidence regarding the production of ivory objects in late Roman and Byzantine Alexandria is increasing (Rodziewicz 2007). The remains from el-Zuma tumulus T.4 constitute the largest assemblage of decorated small ivory containers found in late antique Nubia. They may have served not only as toilet containers, but also as dice-boxes. A few fragments of intarsia, imitating *opus interrasile*, found together with ivory gaming pieces in the tumulus T.7 at el-Zuma, might be elements of one of the most splendid artifacts of the late antique world, a *duodecim scripta* game board.

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