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Human Skull Artifacts–Roundels and a Skull Cap Fragment from Kozareva Mogila, a Late Eneolithic Site

Petya GEORGIEVA / Victoria RUSSEVA

Abstract: Human skull artifacts are found relatively rarely and in various cultural environments. They have been discussed in anthropological literature since the nineteenth century during which the discovery of the majority of the known finds from Western Europe, mostly related to the Neolithic, occurred. Unfortunately, the discovery context is known for only a few of them. It is assumed that they were made and used as objects with supernatural properties. They are usually considered together with human skull trepanations. According to one of their interpretations, roundels were made from skulls of people who survived trepanations or other skull traumas, and had a magic and protective function.

This paper presents five new finds of skull roundels, as well as a bowl made from a human skull, that were discovered in Late Eneolithic layers of the Kozareva Mogila settlement. Two of the roundels bear marks of survived skull traumas. The roundels were found in two adjacent buildings in a burned layer of the settlement mound. Potter’s kilns and other finds in this layer give grounds for the assumption that this part of the settlement had been turned into a potter’s workshop at the time.

In the necropolis, in a burial dating from approximately the same time, a skeleton was found with a significant part of the skull removed and buried in a separate little pit next to the grave. The fragments are perforated in ways analogous to the roundels while skulls from other burials show marks of cutting, incomplete trepanation, and complete survived trepanation. The possible connections between the finds from the necropolis and the settlement are discussed. Additionally skull rattles and little drums (damaru) known from North America and Tibet, which are analogous to skull roundels from Europe, are presented.

Key words: skull roundels, cranial amulets, trepanation, Kodjadermen-Gumelniţa-Karanovo VI culture, Varna culture, eneolithic.

Five objects of the same type, made from human skull fragments, were found while exploring a burned layer from the Late Eneolithic at Kozareva Mogila (Kodjadermen-Gumelniţa-Karanovo VI culture); such objects are known in archaeological literature as skull roundels or skull amulets. Their shape is oval, close to circular, with diameters ranging from 5.8 to 9.8 cm. Each of them has a small hole in the middle. Even though they have been subjected to fire, it is quite clear that these roundels were carefully processed. Their side edges were diligently polished, traces of which have been preserved on the convex surface. The central holes were drilled when the objects were made, after separation from the skull – the perforation was made by a rotating movement and is well centered. There is a round scar from a survived trauma on the outer surface of one of the roundels. Besides these objects, a significantly larger fragment of an intentionally cut part of a skull cap was found in an earlier layer of the settlement mound.

Various kinds of marks from interventions on skulls were found in the necropolis at the same site, in several burials which can be related
on the inner surface (inner table), which identify it as a fragment of a parietal bone. The rim is smoothened whilst scratches are visible on the outer surface and the rim of this object as well.

Roundel E, the final object of this kind (fig. 7, 11), has diameters of 8.0-8.4 cm along the sagittal and the coronal anatomical planes. It has a perforation at its approximate centre with a diameter of 8 mm at the outer table. The morphological sites recognised on the bone are

**Fig. 6.** Roundel D, a fragment of a roundel made from a parietal bone: 1-2 Views from the ecto- and endocranial surfaces (outer and inner sides); the arrow points at traces of the sagittal suture at the periphery of the roundel

**Fig. 7.** Roundel E, made from an occipital bone squama: 1-2 Views from the ecto- and endocranial surfaces (outer and inner sides); 3 Detail of the endocranial surface; arrows – unclear traces of porous bone formation in the endocranial sinuses

**Fig. 8.** Artifact F, a fragment of a skull vault: 1 Right lateral view; 2 Top view; 3 View of the endocranial surface; 4 Detailed view of the edge of the cut

**Fig. 9.** Anatomical position of roundels cut from frontal skull bone. Roundel A
Inscribed Lead Sling Bullets with the Name of Alexander the Great and with Other Names and Symbols Found in Thrace

Metodi MANOV / Nartsis TORBOV

Abstract: Inscribed lead sling bullets are seldom found in archaeological research. In recent years, interest in this kind of archaeological find is considerably larger as connecting them with some literary sources enables reconstruction of historic events in a given region.

In this work 27 lead sling bullets are presented, inscribed and with symbols; only one has a symbol and no inscription. They come from the registered private collection “Vatevi” – Plovdiv, Bulgaria and were collected for years from the lands of ancient Thrace.

It was first presented as a homogeneous group of 12 such inscribed lead sling bullets found in Bulgaria north of the Balkan Mountains, which have the name of Alexander the Great (336-323 BC. Chr.). Lead sling bullets of exactly this kind were not known before, because these are labeled on both sides with two different names – and Alexander and Philip – in the genitive, that categorically defines them as belonging to the troops of Alexander the Great. Presented in the catalogue homogeneous group of 12 weights – from # 1 to # 12 are associated with the campaign of Alexander the Great in Thrace in 335 BC.

Also other lead sling bullets are presented with other names – including one with the name of Lysimachus and names of commanders of detachments of slingers, some of them met for the first time.

Inscribed lead sling bullets are prime sources of historical information when they can be linked with information from literary sources.

Key words: sling bullets, Macedonian king, Alexander the Great, campaign, Thrace.
Abstract: An extensive army bathhouse, excavated in the years 1974-2011 by the International Interdisciplinary Archaeological Expedition of the Adam Mickiewicz University of Poznań, was situated west of the headquarters building (principia), under the ruins of the early-Christian basilica and episcopal residence in Novae (4 km eastern of the Lower Danube city of Svishtov, Bulgaria). In the first phase, dated to the first half of the 2nd century AD, the bath formed a compact complex, almost square in outline, of approximately 700 sq. m in size (fig. 1). Two porticoes constructed of Tuscan columns lined the northern and eastern sides, opening onto two of the camp streets (the via principalis and the street between the principia and the bath). In the west, the bath was surrounded with an enclosure wall facing another small street. The earliest building was a blockhouse, evidently divided into two parts. The heated rooms were located in the western part, aligned latitudinally; a row of unheated rooms aligned north-south were attached in the east: an apodyterium, a frigidarium with a pool and a sudatorium/laconicum. The barrel-vaulted rooms with apses in the western part have been interpreted as tepidarium I, tepidarium II and the caldarium. Their location on the western side was exceptionally advantageous because of the good lighting inside the rooms. Each room was furnished with a semicircular pool in the apse. The northernmost chamber, the caldarium, was connected with a rectangular area occupied by two small hot-water pools, alvei. A chamber with a furnace (a praefurnium) was located directly to the north. A hypocausted heating
late Antiquity. New chambers were added from east to west and from north to south, the chief objective being apparently the creation of a symmetrical layout with two sets of rooms assuring simultaneous use of the bath by the two sexes. The bathing areas were integrated into a single harmonious complex with a new component, the *palaestra*,

Fig. 2. A floor plan of the large legionary bathhouse of Novae. The arrow indicates the *caldarium*. The three-dimensional reconstruction of the bath (A. Jasiewicz)
Heraclea Sintica in the Second Century AD: New Evidence from Old Inscriptions

Nicolay SHARANKOV

Abstract: The paper proposes new readings for two second-century inscriptions which mention Heraclea Sintica and reveal important details about the history and the institutions of the city. A letter by Emperor Antoninus Pius, found in Sandanski (IGBulg IV 2263; AD 157/158) is shown to have been provoked by a conflict over territories between the neighbouring cities Heraclea and Parthicopolis, which possibly originated with the foundation of Parthicopolis ca. AD 116-119. A donation for a gerusia, of unknown provenance (IGBulg V 5925; AD 181-188) is attributed to Heraclea; it provides valuable evidence on several civic institutions – gerusia / gerusiasts and epimeletes (curator) of the gerusia, argyrotamias (treasurer) and mnemon (registrar) of the city.

Key words: Roman Macedonia, Heraclea Sintica, Ulpia Parthicopolis, conflicts between cities, civic institutions, gerusia.

The ancient city near the village of Rupite (previous names Muletarovo and Shirbanovo), district of Petrich, Southwestern Bulgaria, was identified with Heraclea Sintica after the discovery of two inscriptions with the ethnic Heracleota / Ἡρακλεώτης – the rescript of Galerius and Maximinus Daia to the IIIviri et decuriones Heracleotarum of AD 307-308 (AE 2002, 1293; Mitrev 2003; Lepelley 2004) and the funerary inscription set up by a migrant from Scotussa to Heraclea, Σκοτυσσάς ὁ καὶ Ἡρακλεώτης (AE 2005, 1398; Mitrev 2005). In fact the ethnic Ἡρακλεώτης was already present in two other inscriptions (IGBulg 2263 and 5925, discussed below) but remained unrecognized.

INTRODUCTION. HERACLEA SINTICA IN THE FIRST CENTURY AD
Heraclea Sintica seemingly flourished in the first century AD. The city must have been enjoying certain privileges given to it by Augustus because we see at least two praetorian soldiers from Heraclea Sintica (sic) in the first half of the first century AD who were C. Iulii and were inscribed in Augustus’ tribe Fabia: C(aius) Iulius Dizalae f(ilius) Fab(ia) Gemellus domo Heraclea Sintica (CIL VI 2645) and C(aius) Iul(ius) Zoili filius Fabia Montanus domo Heraclea Sintica (CIL VI 2767). It is probable that many other soldiers with origin denoted only as Heraclea (see a list in Malavolta 2011, 27-35, # 1-25), especially those from the Fabia tribe (ibid., ## 5-8, 13, 17, 19, 21-22), were of Heraclea Sintica and not of Heraclea Lyncestis.

Another piece of evidence attesting to the importance of the city during the first century AD could be seen in some coins of Augustus and Tiberius (of the types RPC I 1656 and 1657 = BMC Mysia, Parium 86-88 and 89-91) which, in my opinion, have been countermarked by Heraclea Sintica (fig. 1). The coins of this type, depicting the emperor’s head on the obverse and two men ploughing with oxen on the reverse, were initially thought to be connected with Parion in Mysia, but are now generally attributed to an uncertain mint in Macedonia, prob-
denarii. (§ 5) As ambassadors were acting Demeas son of Paramonos and Crispus son of Toskos, to whom the travel money is due unless they have offered to bear the expense themselves. Farewell.

(This letter) was written (on stone) and set up in the term of the politarchs Valerius Pyrrhos and his colleagues, in the year 189 (= AD 157/158)

In l. 3, I read ΕΝΕΡΓΑΚ[.]ΗΜΑΤΑ; in l. 4, the reading of the stone is clearly ΗΡΑΚΛΕΩΤΑΙ, and not ἤρχετε ποιεῖν, γρά[πτερον], or πράττεις[...] as proposed by previous editors. In l. 6-7, I confirm the reading ΑΦΟΥΧΡΟ[.]ΝΟΥ suggested by G. Souris (cf. SEG 51, 836; AE 2001, 1780). The nomen of the politarch in l. 18 is written ΟΥΑΔΕΠΙΟΝ with delta instead of lambda.

The reading ἐνεργά κτήματα in l. 3 is close in sense to J. H. Oliver’s ρικεία κτήματα, and corresponds even better to the Latin expressions suo usu / (res) ad usum proprium which he adduced as parallels for our text (Oliver 1958, 54).

The new reading of l. 4 with the name of the Heracleans is of great importance because it reveals that the letter of Antoninus Pius was the...
Investigation of Mortar from Bulgaria Dated from 5th Century BC fo 13th Century AD

Abstract: The present paper is the first archaeometric study of mortar from some of the archaeological sites in Bulgaria. We try to evaluate the kind and the characteristics of mortars which were used in the territory of Bulgaria during a wide time interval – from mid of Iron Age to medieval time. The evaluation of the proportion ratio of lime to aggregate or additives in mortar – \([\text{Ca(OH)}_2] : \text{sand (bricks, stones)}\), is one of the characteristics which is very important to the conservation work. This proportion in some cases depends on the historical period when the mortar was produced and of course on its function. In the present paper are analyzed 114 samples of mortar, using ICP-AES, ED-XRF and thermal heating. The samples are taken from sites and fortified walls from different archaeological objects in Bulgaria; 3 samples are taken from Albania. The usefulness of a solution of HCl and complexing agent EDTA for extraction of \(\text{CaCO}_3\), which are produced by \([\text{Ca(OH)}_2]\), was verified. In the paper the data is given for the quantity of \(\text{CaCO}_3\) which is obtained after solution of the mortar with HCl as well as after separation of \(\text{CO}_2\) by heating of the samples of mortar. There is also data about the quantity of \(\text{CaCO}_3\) in mortar taken from different archaeological sites in Bulgaria today.

Key words: mortar, Bulgaria, ICP-AES, ED-XRF.

Introduction

Mortars are mixtures obtained by mixing a binder, water and sand, in suitable proportions and used to bond diverse types of stone materials or bricks in ancient and modern masonry. Among historic building materials, lime mortar has been the most widely used. The documented use of lime in buildings dates back to the third millennium BC, with the plastering in Egyptian pyramids (Boynton 1966; Cowper 2000). Mortars have diverse compositional and material characteristics as a result of different construction needs and the technological knowledge of the workers who produced them. Indeed the restoration of buildings of importance in architectural heritage requires an advanced knowledge of the building materials. The composition of historic mortars can vary dramatically depending on the geographical location and the time period of construction. The as-found composition is also strongly dependent on levels of alteration/deterioration. As such advanced knowledge of their composition is required. The study of ancient mortars is of utmost importance in providing valuable information about their production technology and past intervention, and in guaranteeing the conservation of ancient monuments. Moreover, the design of new materials for their restoration, from both functional and aesthetic points of view, requires a detailed knowledge of the original construction materials.

The process of production of mortar presented burnt the lime at the temperature over 900 °C resulting in a conversion to unloaded lime (CaO) (Adam 2005; Hale et al. 2003). Finally by adding water to the unloaded lime slaked lime \([\text{Ca(OH)}_2]\) is produced. Mortars are
ods give reliable results and could be used for such measurement.

**Determination of the ratio slaked lime : insoluble materials.**

The result of calculating the quantity of calcium carbonate (CaCO₃) (in percent) according to the amount of the separated CO₂ is presented in Table 2.

Sample H-075.KRI was a few pieces of CaCO₃. It was practically pure CaO converted with the time again into CaCO₃ by absorbing CO₂ from the atmosphere (see Table 2). It was found in a kiln for production of unloaded lime near to the village of Krivina (# 13 in Fig. 1). The very high concentration of CaCO₃ shows that the kiln produced very pure unloaded lime (CaO). Later it is used for production of a binder [Ca(OH)₂] in mortar.

According to the amount of the separated CO₂ the calculated quantity of calcium carbonate (CaCO₃) [mg/g] is presented on Fig. 3. Figure 3 shows that the most used concentration of calcium carbonate in mortar was between 20 and 30%. That means that the ancient builders most frequently used the recipe for preparation of mortar with slaked lime [Ca(OH)₂] to sand (stones, bricks) ratio about 1:2. That means that in 34% of all investigated cases (see Table 1 and Table 2) the mortar was prepared in such proportion: one part of slaked lime and two to three parts of sand. That occurred without any difference throughout the periods – from mid Iron Age (mid 5th century BC) to the medieval period (13th – 14th century AD). Relatively rare, in about 23% of the investigated cases, the slaked lime, which was transformed into CaCO₃, is 30 to 40%. The calcium carbonate is from one third to one half of the quantity of mortar, and more rare – in about 10% of the cases – the quantity of calcium carbonate is less than one fifth of the mortar.

Five of the samples from the archaeological site of *Heraclea Sintica* near Rupite (# 1 in Fig. 1) show that the CaCO₃ is one forth of the mortar, and for the other two samples the quantity of CaCO₃ is one third of the mortar. But for other sample from Rupite the quantity of CaCO₃ is about the half of the mortar. This result shows that the alteration/deterioration is very important in the process of sampling and that in many cases it is the reason for dispersing the results.


Im ersten großen Kapitel der Arbeit widmet sich Valčev der Lagebestimmung von außerstädtischen Heiligtümern in der Provincia Thracia (S. 17-37). Wie nicht anders zu erwarten, liegen die Heiligtümer vor allem in den ebenen Gebieten und erstrecken sich häufig an ihrer Peripherie, wobei sie sich dann auch in Senkflächen von Höhenzügen und Gebirgen befinden können. Wie der Autor betont, gilt dies insbesondere für die Anlagen in der oberthrakischen Ebene und den Bereichen östlich davon bis zum Schwarzen Meer. Eine beigefügte Karte auf S. 18 verdeutlicht dies. Dabei ergibt sich auch die Lage an den wichtigsten Verkehrswege. In den folgenden Ausführungen arbeitet Valčev einige Spezifika in der Dislokation heraus. Erstmals in der bulgarischen archäologischen Literatur hat der Verfasser eine topographische Klassifikation von Heiligtümern vorgenommen. Es handelt sich dabei um Kultplätze auf freier, ebener Fläche, solche, die auf einem Terrain mit bedeutender Denivellation angelegt sind, ferner auf Bergkuppen, außerdem Felsheiligtümer, solche an Quellen, schließlich Höhlenheiligtümer. Für die Existenz von heiligen Bäumen und Hainen lassen sich allerdings nur antike Schriftquellen anführen. Ein anderer, von Valčev behandelter Aspekt betrifft die Situation...

Mit den umfassend charakterisierten und nach geographischen Gesichtspunkten aufgeführten Heiligtümern wird gleichsam ein nicht hoch genug einzuschätzendes Corpus für diese Materie präsentiert. Hier sowie im vorangegangenen analytischen Teil, wo jeweils immer auf diesen umfangreichen Katalog hingewiesen wird, kann Vălčev eine exzellente Kenntnis der umfangreichen bulgarischen Fachliteratur bescheinigen werden, wobei sogar Werke bis nahe am Erscheinungsjahr des Buches berücksichtigt worden sind.


**Bibliographie**


