

HANDCRAFT PRODUCTION IN HERACLEA SINTICA (ON ARCHAEOLOGICAL DATA)

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Heraclea Sintica is located in Kozhuh locality near the village of Rupite, Petrich region. The ancient city occupies the eastern and southern slopes of Mount Kozhuh and part of the non-flooded river terrace between the Struma and Strumeshnitsa rivers. Due to regular excavations on the site conducted from 2007 onwards, there are numerous artefacts related to the craft production in the city (Вагалински, Чолаков 2008; Вагалински, Чолаков, Александрова 2012; Вагалински 2013). Various artefacts coming from archaeological excavation conducted at the site in 1958 and finds discovered by chance in the vicinity have also been published (Милчев 1960). Given the numerous small finds, it is certain that terracotta production in the city was well-developed. Much data also confirms the processing of bone, stone, fabric and leather, and crafts such as sewing, spinning and weaving. The present study aims to examine some of the production activities carried out in the ancient city of *Heraclea Sintica* on the basis of the archaeological data obtained so far.

Terracotta production. Most evidence is related to the activity of a center of terracotta production located in the ancient city. The bulk of the finds discovered at the site in the 2007 archaeological season have already been published (Cholakov 2008). Terracottas found at *Heraclea Sintica* have also been included in

forthcoming research that presents various deities depicted on objects from the region of the Struma River (Cholakov forthcoming). Terracotta molds found at the site provide one piece of evidence for production on the spot (Cholakov 2008, fig. 14, 15) (Fig. 1/ 1-7). Taking into account the items discovered during the 2012 field season, they amount to nine, including two fragmented lamp molds (Fig. 1/ 8, 9). The scale of production can be ascertained by the large number and variety of the finished products. Terracottas similar to those found near the Rupite village originate from the vicinity, and masks discovered near the Palat village, Blagoevgrad region, were probably produced in the workshops of *Heraclea Sintica* (Katalog 2007, Kat. № № 171, 172; Die Thraker 2004, Kat. № № 306 a-d; Cholakov forthcoming). The precise workmanship of the majority of these artefacts refutes the assumption that manufacturing technique was simpler and coarse during the Roman period (Дремсизова-Нелчинова, Тончева 1971, 7). The discovered terracottas are precisely crafted and more closely resemble Hellenistic models typical of the region of the Middle and Lower Struma River and the Northern Aegean coast.

The terracotta workshop was localized in Site 2, lying in the so-called craftsmen's quarter of the city at the southern foot of the Mount Kozhuh. This is the site where Prof. A. Milchev



Figure 1.

conducted archaeological excavations in 1958. He concluded that this was a weaving and painting workshop, generally dating from the 4th century BC – 6th century AD (Милчев 1960, 381). The archaeological excavations conducted in the 2007 and 2012 seasons, however, did not confirm that hypothesis. The "painting workshop" in question was fully excavated and it turned out that it was actually part of the city's system of sewers. Nevertheless, the pebbles and soil in different colors mentioned by Milchev, as well as the yellow mineral paint encountered by him, suggest the use of these materials in production processes associated with coloring. Several small lumps of red pigment, probably minium, were also documented during the 2007 field season. Among several shells of sea snails encountered in the excavations was a specimen of murex from which a dye staining in purple red was extracted in antiquity (Вагалински, Чолаков 2008, 386).

Processes involved in painting should probably be related to the activity of the excavated terracotta workshop. The majority of terracottas are coated with glaze, suggesting the use of this technique in the city's ceramic production. Some of the items bear traces of white, red, yellow and blue paint. Chemical analysis of some of the objects was carried out. The analysis was conducted by the use of Energy Dispersive X-ray Fluorescence spectrometer (EDX-720) in the laboratory of the National Institute of Archaeology with Museum in Sofia. According to the results obtained, the glaze used for the terracotta production contains a very high percentage of lead – 76-86% (Cholakov 2008, 56). Lead-containing glazes are characteristic of the ceramic production of the 1st century BC onwards (Tite *et al.* 1998, 242).

A large number of lead fragments have been encountered during the excavations at all sites. Some of them can be considered waste from production of fishing weights. The majority, however, are probably related to the terracotta manufacturing process. Glazes in antiquity were mainly produced by using

compounds such as lead oxide (PbO), the crystals of which are yellow or red in color; red lead / minium (Pb_3O_4); lead white ($PbCO_3$, $Pb(OH)_2$) – white mineral paint or galena (PbS). Their use is usually as suspension in water. They are prepared by melting the lead in a kiln or hearth and the resulting oxide layer is picked up. Although galena can be directly used, it is also possible to be burnt (Tite *et al.* 1998, 248). Vitruvius describes the preparation of lead white. Lead shavings are put in a vessel and concentrated vinegar is poured on them. Then covers are put on the vessels in order to avoid evaporation and after a while the lead pieces are transformed into white (Vitruvius, 7. 12. 1). Minium (Pb_3O_4) is a red or orange pigment that is water-insoluble, but is also dissolved in acetic acid. Galena or lead sulphide (PbS) is an inorganic compound of lead and sulphur whose crystals are greyish-blue to silver-grey in color. Although all lead compounds are toxic, some of them are still used today in the industry. Some of the unglazed terracottas are painted in white, which is achieved by covering the terracotta with grout. Thus the background is uniform and the paints adhere more firmly to the clay (Дремсизова-Нелчинова, Тончева 1971, 8).

Because of its low melting point (327° C) lead can be treated at home. The lack of kilns discovered so far in the excavated area of *Heraclea Sintica* suggests that the melting processes were carried out in portable metal or ceramic vessels (stoves) in which combustion was provided through charcoal. The painting and glazing of the terracottas was also done on the spot, and the firing of items was probably undertaken in the near vicinity. In a room next to the terracotta workshop a pool carved into the rock was unearthed. It was probably used for flotsam and kneading of clay. During these processes, indispensable to the ceramic production, the material is cleaned from salts, solids and inorganic substances (Вакарелски 1977, 360). More than a dozen sticks of clay bearing traces of yellow-brown glaze were found in the course of excavation. Similar items



Figure 2.

have been discovered and considered by A. Milchev as having sacred significance (Милчев 1960, 376). The traces of glaze are probably not intentional, but rather accidental. These sticks are more likely to have been used in the process of coloring terracottas. One possible explanation is that they were placed through the openings of the masks in order to attach and hold them during dyeing. Another possible function is their use as stirrers for mixing dye solution (Fig. 2/ 1-3).

The great number and the variety of products suggest that this workshop satisfied not only the needs of the city, but also those of other neighboring communities. The importance of the production is implied by the fact that, despite the great fire occurring after the mid-3rd century AD, it was resumed on the same site (Cholakov 2008, 55). Multiple diggings into the rock shaped as shallow pools date to the earliest period of occupation of the workshop, and are probably related to similar activity.

The high artistic value of the terracottas associated with this site contrasts with similar items of the same date found in other parts of the country. Reasons for this could be their strong manufacturing tradition using themes and techniques characteristic of the Hellenistic period. Close parallels of these finds, still unpublished¹, could be adduced from Roman *Philippopolis*.

Processing of bone. Many bone artefacts—including hairpins, needles, spoons, handles, spindle whorls, amulets and plates—have been found during the archaeological excavations of *Heraclea Sintica*. One cannot locate with certainty any workshop for processing bone in the section of the city excavated so far. The archaeological materials found there, however, certainly suggest its existence. Some of the bones bear traces of

processing tools – axes, saws and files. The use of bone as raw material for production is also attested by the presence of blanks (Fig. 2/ 4, 5). These are mostly pieces of deer horns and less of ram's (Нинов 2012, 370). Blanks with large, flat surfaces for making plates were encountered. One of the bone appliqué found has incised decoration of geometric patterns. It was probably prepared for a comb plate. Such plates were also used in the manufacture of various appliqué or decorations (Fig. 2/ 6, 7).

Bone artefacts are most often related to crafts such as sewing, spinning and weaving. They will be discussed below as separate type of production activity. Another large group of bone artefacts are those used as toilet and cosmetic articles.

The largest group is composed of hairpins. The artefacts found in the so-called craftsmen's quarter far outnumber those encountered in the other territories of the ancient city. 18 out of 25 hairpins are discovered at Site 2. The presence of this typical women's accessory corresponds to the evidence for fabric production, which is also an exclusively female activity. The most characteristic feature of the hairpins is the shape of their occipital parts. They will be examined in the present study according to the typology proposed by P. Vladkova (Владкова 2006, 269; Vladkova 2012, 221).

Hairpins with a spindle-shaped form of the body, without a head. Two hairpins are to be assigned to this type (Fig. 2/ 8, 9). There is some doubt whether the latter is a hairpin or an object used as an awl. Only a few parallels are found on the territory of Bulgaria, as all of them are dated to the late 3rd – early 4th century AD (Владкова 2006, 270; Vladkova 2012, 224).

Hairpins with round heads. Two variants belong to this type – hairpins with regularly shaped big round heads and hairpins with small round heads (Владкова 2006, Табл. VII/2-10). Both variants belong to the 3rd – 4th century AD. Three samples found in the territory of *Heraclea Sintica* are assigned to the first variant. Two of them terminate in small balls of slightly elliptical shape at the occipital part (Fig. 2/ 10,

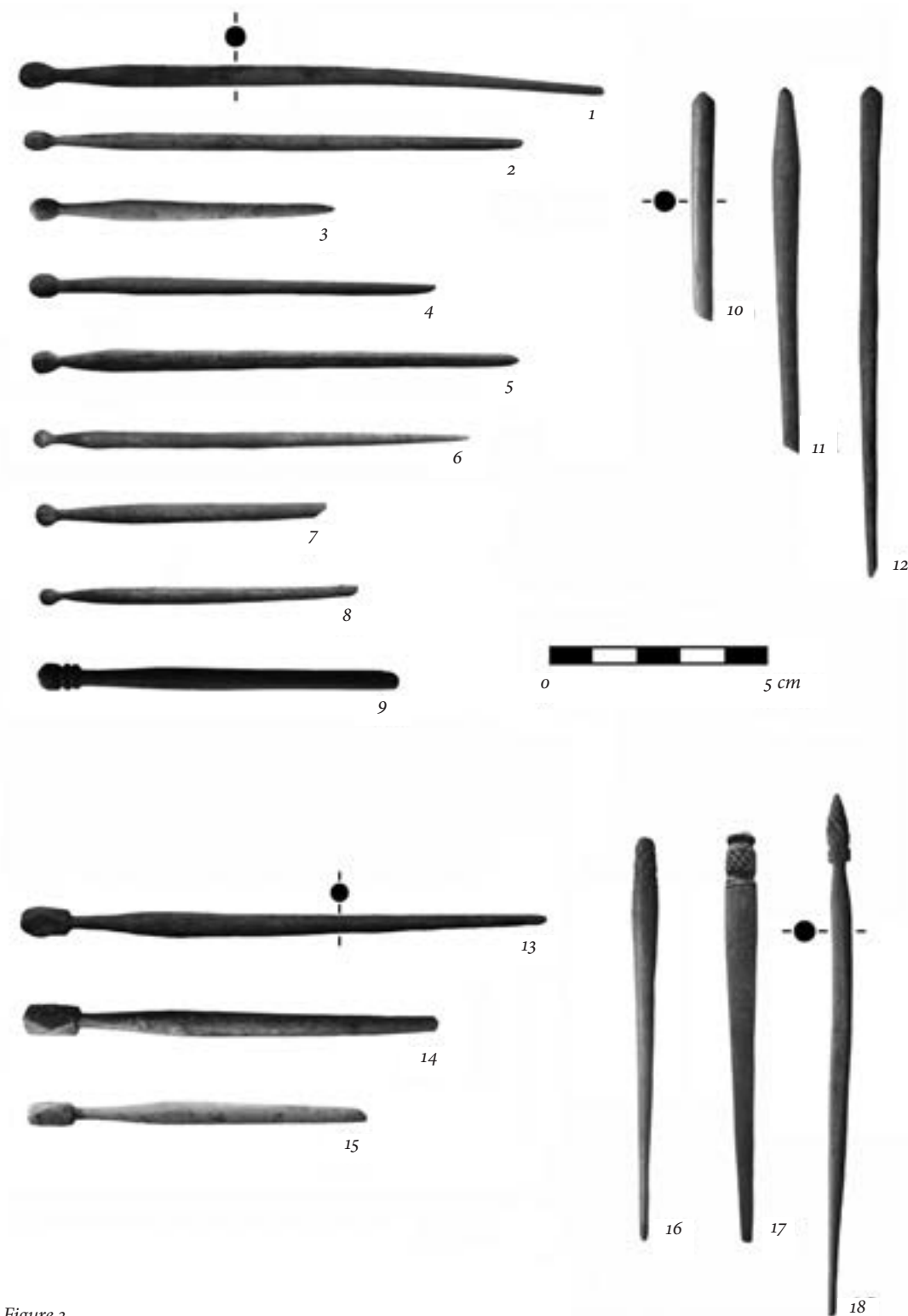


Figure 3.

¹ I had the opportunity to see the terracottas found during the 2008 archaeological excavations of the site "Museum" conducted by G. Tankova (Regional Museum of History-Plovdiv), to whom I am deeply grateful.

11). The second variant is evidenced by nine examples (Fig. 3/ 1-9). One of the hairpins has additional ring-shaped decoration right beneath the ball (Fig. 3/ 9). A similar example comes from *Novae* (Vladkova 2012, Pl. VIII/ 52). Hairpins of this variant are among the most common type discovered in Bulgaria.

Hairpins with a cone-shaped occipital part of the head. Three hairpins belong to this type. One of them is fully preserved, while the tips of the others are missing (Fig. 3/ 10-12). The type dates from the mid-1st century AD to the 4th century AD (Владкова 2006, Табл. VII/11-13). There are about 50 hairpins of this type found in *Moesia Inferior* and *Thrace* (Vladkova 2012, 224).

Hairpins with a polygonal-shaped head. Three of the hairpins belong to this type. The occipital part of one of them is shaped as prism and that of the others as dodecahedron (Fig. 3/ 13-15). This hairpin type is widespread among metal samples, and there are specimens of such material dated even to 7th century AD (Владкова 2006, 271). The parallels found in Bulgarian territory are dated to the 2nd – first half of the 4th century AD (Vladkova 2012, 228).

Hairpins with heads in the form of a stone-pine. There are three samples decorated in such a manner (Fig. 3/ 16-18). The type is widespread on the territory of present-day Bulgaria. Hairpins of this type occurred in the late 2nd century AD, being most characteristic of the Severan period, and they were used until the end of the first half of 3rd century AD. The pine-cone rendered on bone hairpins is associated with the cult of Dionysus (Vladkova 2012, 229). Imagery of the cult is widely represented in the terracotta production at ancient *Heraclea*. Besides depicting of the deity and his suite in different varieties, the pine-cone is used as a model for one of the discovered terracotta molds (Cholakov, 2008, Fig. 14, 46).

Five hairpins cannot be defined on the basis of the occipital part because it is broken. They probably belong to the type of hairpins with a round occipital part.

Bone spoons were commonly used for activities related to cosmetics, pharmacy and

medicine. Eight spoons at different stages of preservation were found as a result of the excavations of the ancient city in recent years (Fig. 4/ 1-8). Another five samples are mentioned in the publication of A. Milchev, who published two fully preserved items (Милчев 1960, Табл. XV, обр. 2,а-в; Табл. XXVIII, обр. 2, а). According to the numismatic material, the bone objects are to be dated to the 3rd century AD. Many parallels can be adduced from Bulgaria and from other parts of Europe (Vladkova 2012, 231).

Two bone objects were probably used as *amulets* (Fig. 4/ 9, 10). This type of amulet is known as Hercules' club amulet. Similar samples are found in all fortresses along the Lower Danube Limes, ranging widely in date from the 3rd century AD onwards (Vladkova 2012, 240).

Numerous finds of various bone objects and prepared blanks suggest the presence of one or more workshops within the city. Domestic animals and hunted wild game provided the raw material necessary for this production activity.

Fabric production. A large number of loomweights have been found in the course of the archaeological excavations of *Heraclea Sintica*. The finds come from a relatively small area, suggesting the presence of organized production within the so-called craftsmen's quarter of the city. A. Milchev also published a large number of loomweights; some of them are separate finds while the others were encountered as a result of archaeological surveys. The specimens found by him number over 70 (Милчев 1960, 383). The author mentioned in the same article two collective finds, one of them consisting of 25 loomweights and the other of 41, registered during the excavations of the craftsmen's quarter just north of the unearthed stairway (Милчев 1960, 381). Two more caches, composed of 23 and 17 specimens, were found in, respectively, the 2007 and 2013 field seasons. These collective finds appear to reflect the approximate number of loomweights used in the looms of that time. A total of 174 loomweights



Figure 4.

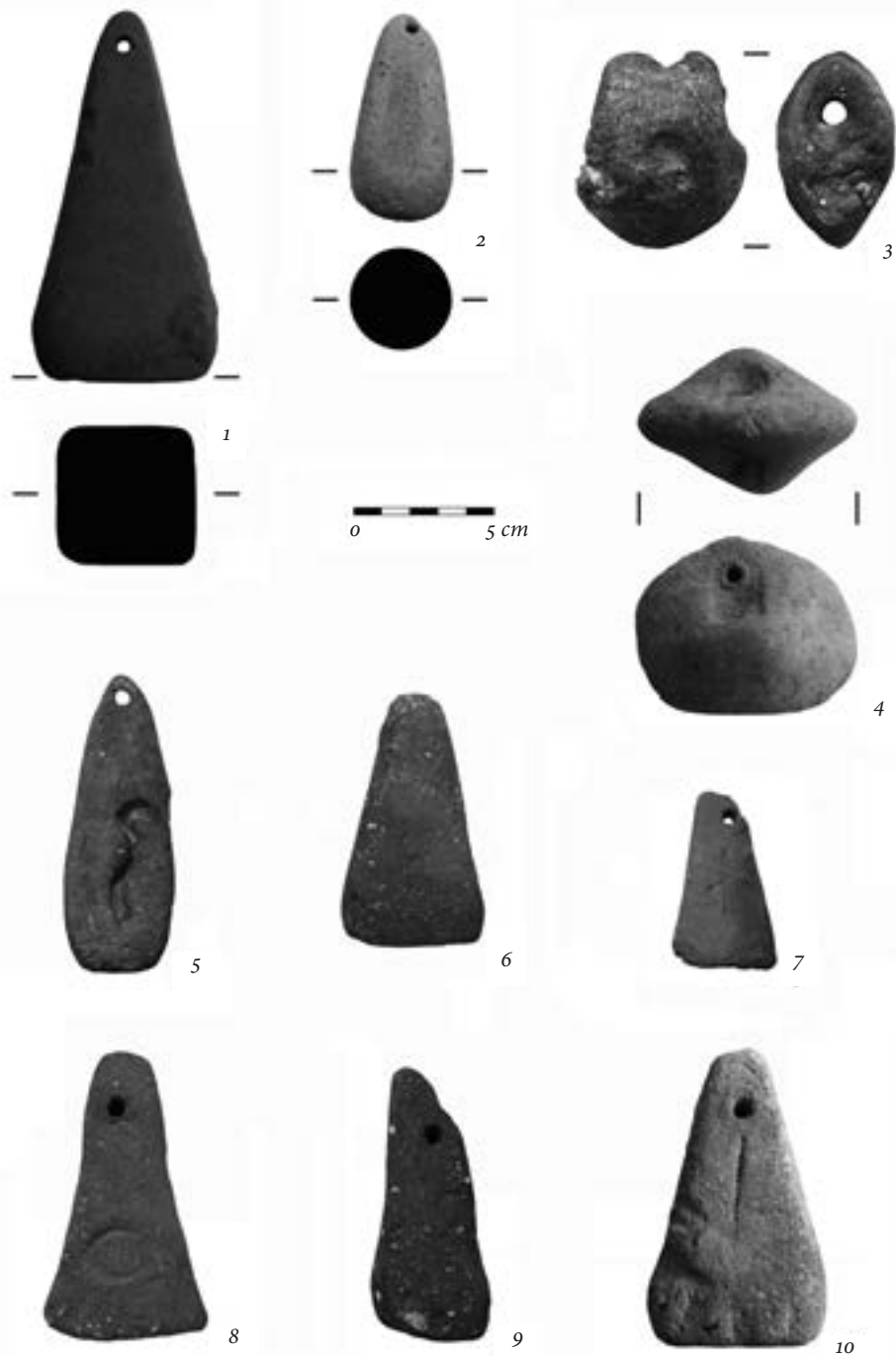


Figure 5.



Figure 6.

were discovered during the 2007-2013 archaeological excavations; 155 are ceramic and 19 are made of stone (Fig. 4/ 11-13). According to the context of discovery, it seems that both types were used together. Pyramid-shaped items prevail, amounting to 126 examples, and in almost all cases they are shaped with rounded edges (Fig. 5/ 1). These loomweights are the most frequently encountered at archaeological sites in different parts of the country and they have a wide chronology. Conical specimens are significantly less in number – 11 pieces (Fig. 5/ 2). Fiddle-shaped loomweights pinched at the top in order to make a hole for hanging are discovered as well (Fig. 5/ 3, 4). The loomweights shaped in that way are typical of the Hellenistic period, but they are found at the site in stratigraphic layers dated to the Late Roman period. In addition, a collective find of the second half of the 3rd century AD contains specimens of both types. Parallels for the fiddle-shaped loomweights are evidenced by artefacts of pre-Roman date at the emporion *Pistiros* and the settlement at *Koprivlen* (Bouzek 1996, fig. 11.16, 1-9; Димитрова 2002, Фиг. 166/1, 2, 4-6). The strong tradition established in *Heraclea Sintica* was probably the reason for the use of loomweights of characteristic Hellenistic shape in later times as well. Some of the items are decorated with stamps and incisions (Fig. 5/ 5-10). The collective find consisting of 17 loomweights (16 ceramic and 1 lead) is of particular interest (Fig. 6/ 1). They feature small sizes and a variety of shapes. Nine of the clay items and the lead weight are pyramid-shaped, six are fiddle-shaped, and one is oval. The small sizes suggest their use in a specialized production. Loomweights are found in all parts of the city that have been investigated so far, associated with layers dated to 3rd – 4th century AD.

Other types of artefacts related to fabric production are the needles and spindle whorls. Needles are mainly made of bone, while the spindle whorls are made of a wider variety of materials, including bone, clay and metal.

Needles. Five bone needles are found during the excavations at *Heraclea Sintica*

(Fig. 6/ 2-6). Three of them are fully preserved while the other two are fragmented. The termination of their occipital part is round or flat-shaped. Examples of such needles can be adduced from different archaeological sites in Bulgaria and they are dated to 2nd – 4th century AD (Roberts 2007, 70; Vladkova 2012, 216). One of the needles has two holes, drilled one above the other, though this part is broken off at the present.

Spindle whorls. Of a total of 10 spindle whorls from the site, 7 are made of clay, 2 are made of bone, and one of lead. The number mentioned includes two clay spindle whorls published by A. Milchev (Милчев 1960, Табл. XXIII, обр. 16; Табл. XXVII, обр. 1, 6). The clay spindle whorls belong to two types based on shape: three have biconical-shaped body (Fig. 6/ 7) and two have a cylindrical-shaped body (Fig. 6/ 8). Two bone spindle whorls originate from the site (Fig. 6/ 9, 10). They differ in shape and manufacturing technique. Both are well smoothed. One of the items is strongly flattened. Its surface is polished and decorated with two concentric circles on one side and five on the other. The other specimen is hemispherical in shape and made out of the articular cartilage of an animal bone. Similar examples originate from different archaeological sites (Владкова 2006, 263); only a small percentage (20 %) of these spindle whorls are bone. The lead specimen is conical-shaped (Fig. 6/ 11).

Stonework. Stone processing tools constitute the bulk of the metal tools found at the site. This is unsurprising if one takes into consideration the fact that part of the rock is cut and levelled up in order to accommodate dwellings and other structures on the slopes of Mount *Kozhuh*. Traces of stoneworking tools are evident in many places. The execution of various architectural elements and decorations also requires the use of such instruments. The discovered metal items can be defined as wedge-chisels – type 1 after Cholakov (Чолаков 2010, 112) (Fig. 7/ 1-3). A marble quarry used until quite recently is located at

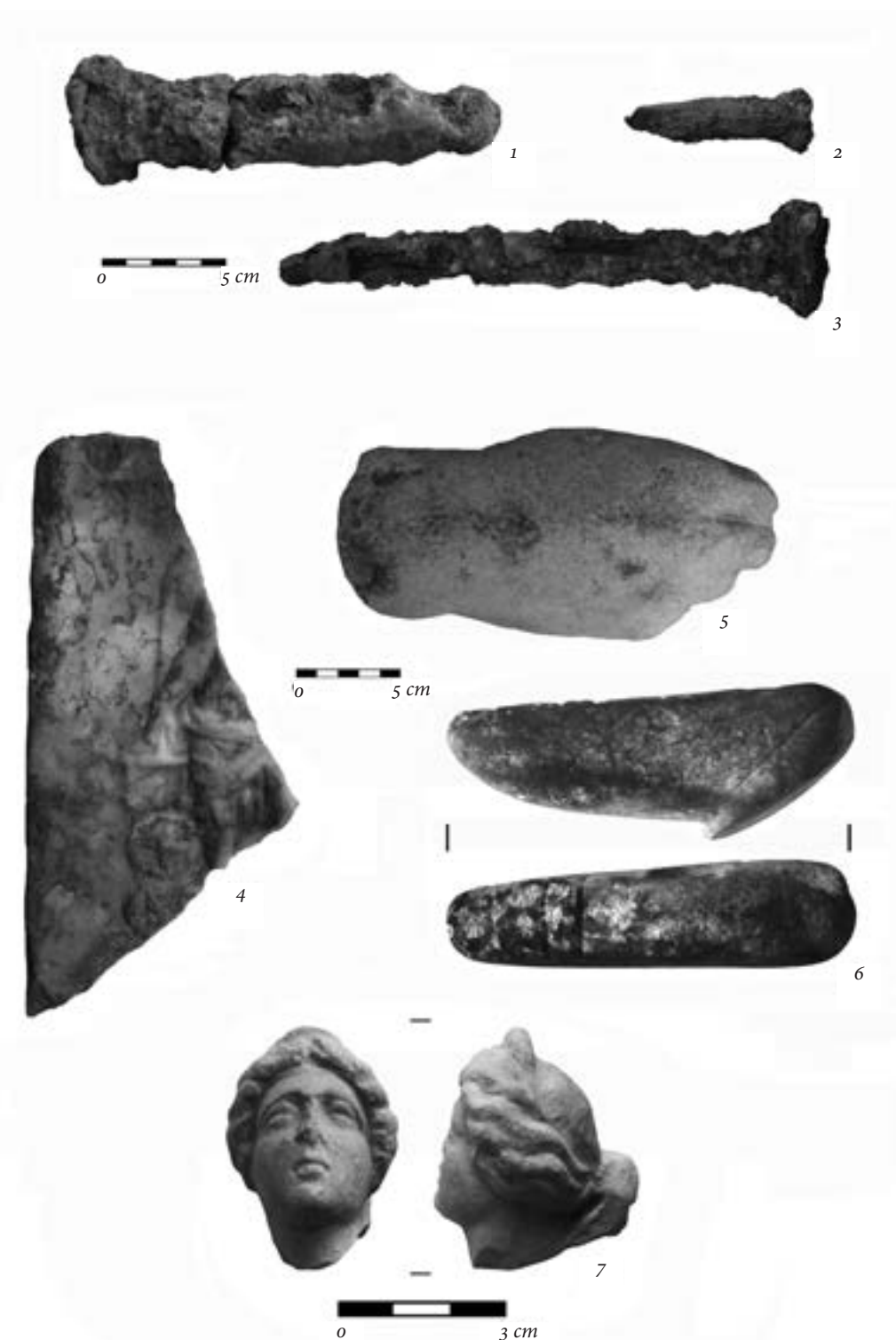


Figure 7.

the northeastern foot of Mount Kozhuh, ca. 500 m away from the city of *Heraclea Sintica*. Despite the lack of data about its exploitation in antiquity, it likely supplied raw materials for masons' production. The stone does not distinguish itself by particularly high quality and is beige-brown in color. Traces of a second marble quarry are located in the middle part of the Mount Kozhuh.² Since marble is not quarried there in modern times, the quarry seems to have been used mainly in antiquity. Many architectural fragments, including parts of statues and votive tablets, encountered on the territory of *Heraclea* are made from high-quality white marble. It was probably obtained from quarries located in the near vicinity. Nowadays numerous marble deposits are exploited along the Struma River valley between Kresna and Rupel Gorges. In his article, A. Milchev mentioned a large number of chance finds of marble capitals, columns, column bases and thresholds, many of which are reused in modern buildings in Rupite village and the town of Petrich (Милчев 1960, 375). A finely executed Corinthian capital of large dimensions, found in the territory of *Heraclea Sintica* and dated to the late 2nd – early 3rd century AD, is kept in the culture center of Petrich (Димитров, Иванов 2007, 146). Three marble votive tablets were discovered as a result of the recent excavations of the ancient city. Two of them, one depicting Heracles and one Artemis, have been published (Peeva 2010, fig. 1, 2). The tablets are made from coarse-grained marble similar to that used for an unpublished fragment of a votive tablet dedicated to Nemesis found in the 2012 archaeological season. The preserved right half of the figure depicts the goddess holding scales in her right hand over pinwheel (Fig. 7/ 4). Life-sized marble statues, in all likelihood, were also produced in *Heraclea*, since different fragments have

been found during archaeological excavations. Two fragments of hands, probably belonging to life-sized human figures, were found (Fig. 7/ 5). One can note the precise execution of a marble figurine head of a woman found in 2012 (Fig. 7/ 7). The following monuments probably belong to the stone workshops of *Heraclea*: marble finger used as pestle and fragment of a second similar item (Fig. 7/ 6); fragments of marble reliefs depicting a horse, an eagle and a lion's head (Fig. 8/ 1-3); parts of capitals, column bases and architectural decoration (Fig. 8/ 4). Almost all of the above-mentioned monuments are made of white, coarse-grained marble. Five fully preserved millstones and numerous fragments of others, probably made by local craftsmen, were recorded during the archaeological survey (Fig. 8/ 5, 6). Several stone vessels, e.g. mortar and beehive-like vessels, also come from the site (Fig. 8/ 7, 8). Two mug-shaped objects (one almost fully preserved while the other is fragmentary), are of particular interest, since they are made from volcanic rock (Fig. 8/ 9). The reason behind the production of various stone objects, including kitchenware, presumably lies in the presence of suitable stone that is easy to process.

Other activities. It is noteworthy that no tools related to agriculture and stock-breeding are registered among the artefacts encountered during the archaeological excavations at *Heraclea Sintica*. One possible reason for this might be that only a small section of the city has been excavated to date. Only one fragmentary billhook can be associated with similar type of production (Fig. 9/ 1). It belongs to the type of billhook with insertion but without appendage (*securis*) of the occipital part – type 1 after Cholakov. The type in question, dated to the Roman and early Byzantine period, is frequently found on the territory of Bulgaria. Parallels can be adduced from Asia Minor, along with Hellenistic materials (Чолаков 2010, 41). This singular example cannot provide us with a clear notion about the agricultural activities performed by the citizens of *Heraclea*. The presence of billhook suggests viticulture,

² This observation is a result of field surveys of the Mount Kozhuh conducted by the author together with L. Vagalinski (NIAM-BAS) and S. Ivanov (HM Petrich) in June 2013.

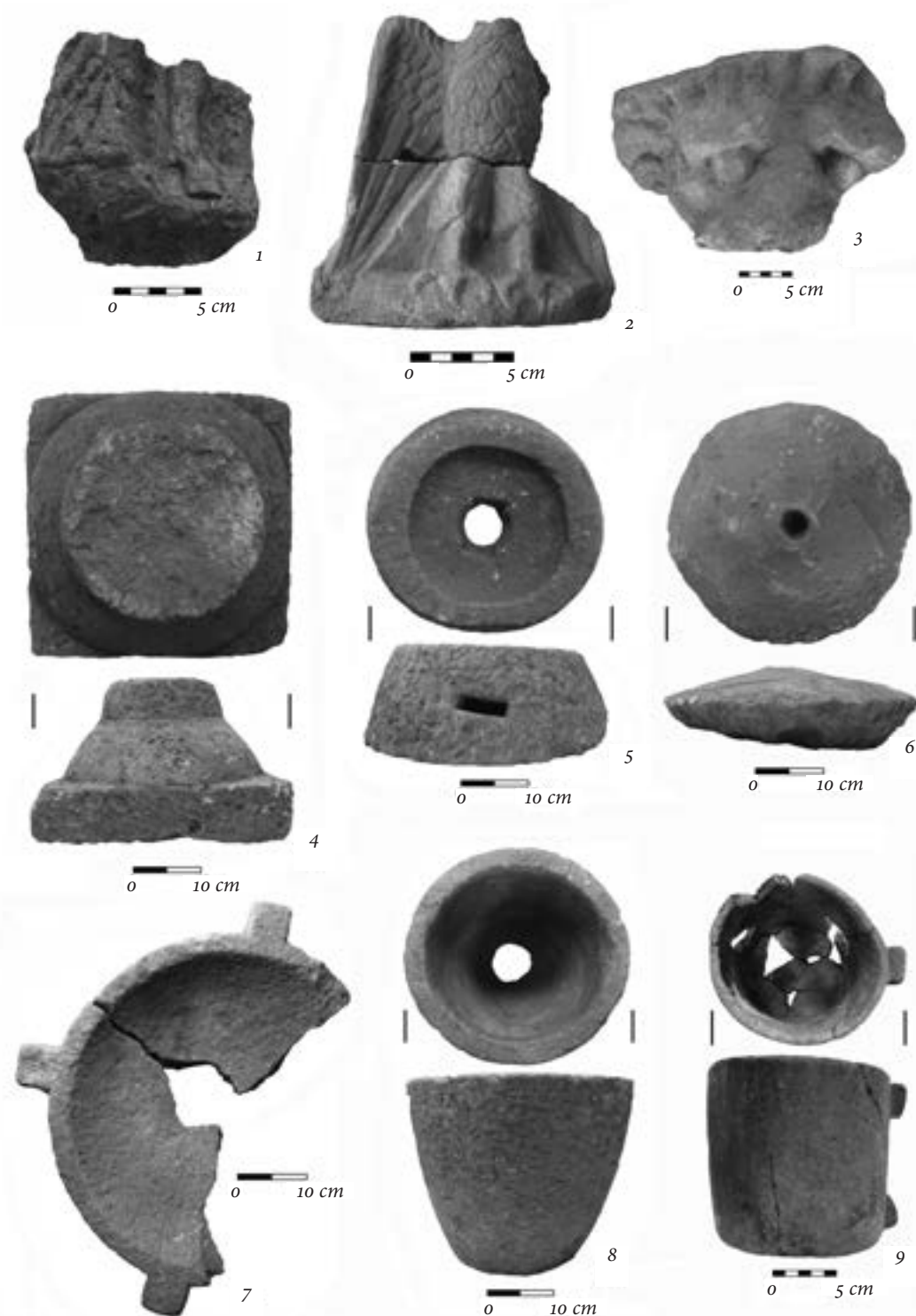


Figure 8.

which even nowadays is typical of the region due to the suitable climatic conditions. The numerous bones found are the only evidence so far in support of the claim for livestock breeding. Bones of pigs, sheep, goats and cattle predominate as regards the animal species (Нинов 2012, 370). Two lamp molds discovered suggest the existence of specialized ceramic workshops in the city. The large part of the numerous and various ceramic artefacts found during the excavations is probably the output of local production.

Fishing. A small number of the finds originating from *Heraclea Sintica* can be linked to fishing. These are mainly fishing net weights. The artefacts are made out of clay or lead. The majority of the clay weights are pottery fragments reused in an appropriate modified shape (Fig. 9/ 2, 3). Their production on the spot is evidenced by the presence of blanks, e.g. fragments with unfinished hole (Fig. 9/ 4). The lead weights are rectangular in shape with folded edges on both long sides. Four weights are certainly identifiable among the numerous lead fragments found during the excavations (Fig. 9/ 5). Their purpose is to hold the fishing net tight in its lower part by being pressed to the threads. The presence of fishing net weights is not surprising given the two rivers located in immediate proximity to the city – Struma River (ancient *Strymon*) and Strumeshnitsa River (ancient *Pontos*). The citizens of *Heraclea* used not only fishing nets, but also fishing rods, the evidence for which is presented by a hook (Fig. 13) (Fig. 9/ 6). An iron object found at Site 2 may have been used as a harpoon (Fig. 9/ 7). The presence of fish in the diet of the citizens of *Heraclea* is suggested by the fish bones discovered at the site (Вагалински/ Чолаков/ Александрова 2012, 304; Нинов 2012, 370). Five pyramidal lead weights among the lead finds are noteworthy (Fig. 9/ 8, 9). They were probably used as loomweights, since one of them belongs to a collective find. The use of lead for that purpose is quite expensive, given that the citizens of *Heraclea* used pottery as well as stone in order to produce such weights. One

should not exclude the probability that some of them were affixed to fishing nets. Similar items are found in the eastern Mediterranean, from late Roman and Byzantine shipwrecks in Haifa District, Israel (Galili, Rosen, Sharvit 2002, figs. 2, 4) and in Thessaloniki, Greece, dated to the 4th century AD (Papanikola-Bakirtzi 2002, cat. nos. 177 a, b).

The artefacts included in the present study and found during the archaeological excavations at *Heraclea Sintica* probably encompass only small part of the activities and productions of the ancient city. The accumulation of more archaeological data will contribute to a fuller understanding of the everyday life, trade contacts and various crafts practiced by the ancient citizens.

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Figure 9.

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ЗАНЯТЧИЙСКО ПРОИЗВОДСТВО В АНТИЧНАТА ХЕРАКЛЕЯ СИНТИКА (ПО АРХЕОЛОГИЧЕСКИ ДАННИ)

Иво Чолаков

/резюме/

Настоящото изследване е опит да се направи възстановка на някои производствени дейности на територията на античната Хераклея Синтика. Всички налични данни за това са открити при археологически разкопки. Изследваните артефакти предполагат добре развито каменоделство, обработка на тъкани, кожа и кост. Проучено и документирано е ателие за производство на теракоти, снабдяващо с продукция античния град и неговата околност.

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