

WEAPONS FROM THE CHALCOLITHIC PERIOD IN BULGARIA

(SUMMARY)

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INTRODUCTION

A number of artifacts from the Chalcolithic period in Bulgaria have been defined in the archaeological literature as weapons: stone mace-heads, battle axes of stone, copper and antler, arrowheads and spearheads of flint and bone, slingshots of stone and clay. However, there are no specialized analyses on most of these artifacts and especially on the problems of their function and functionality. Studies regarding the development of weapons and possible armed conflicts in this early period are also lacking.

In this study the term *weapon* is used to define a single artifact used in attack (against humans in battle or against animals in hunting). There are no remains left of defensive equipment (armours, shields, etc.) from the Chalcolithic in Bulgaria.

This study is concentrated on weapons which were probably designed especially for warfare and on ones which may have had both combat and hunting use. Thus, an analysis was made on all artifacts for which such a purpose had been suggested in the literature. Objects used in fishing like harpoons and others are outside the scope of the research.

The study has three main goals:

To clarify which sorts of artifacts from the Chalcolithic may be reliably regarded as specialized weapons.

To determine, as far as it is possible, their particular function (for warfare or for hunting) and thus to answer the question about the presence of specialized combat weapons in this period.

To trace out the chronological development and regional specifics in the distribution of different sorts of weapons during the Chalcolithic and consequently to analyze the potential to use them as cultural indicators and as source of information for possible armed conflicts.

The chronological frame of the work is naturally defined by the analyzed artifacts. Most of them first emerged in the Chalcolithic and were among the typical objects for this period. During the so called “transition period”, which followed the end of the “classic” Chalcolithic cultures, a number of changes in all spheres of culture are visible, including weaponry. Thus, this period remained beyond the scope of the study.

In this research the tripartite periodization of the Chalcolithic proposed by H. Todorova is used because of its applicability to the whole region concerned:

Early Chalcolithic: 4900/4850 – 4600/4550 cal. BC

Middle Chalcolithic: 4600/4550 – 4500/4400 cal. BC

Late Chalcolithic: 4500/4400 – 4100/3800 cal. BC.

The territorial span of the study covers nowadays Bulgarian lands. On one hand, the contact zones between the main Chalcolithic cultures in the Balkans (especially the large Late Chalcolithic cultural complexes Krivodol-Salkutsa-Bubani Hum Ia, Kodzadermen-Gumelnitsa-Karanovo VI and Varna) are located on this territory. This provides good opportunity to see if there are cultural specifics or extra-regional trends in the spread and development of the artifacts in question. On the other hand, the choice of the territorial span is also conditioned by the possibility to gather maximum information of the probable Chalcolithic weapons, including documentation and analysis of a number of unpublished objects stored in different museums.

In the study the territory of Bulgaria is divided into several regions on the basis of geographical features and, mainly, of cultural specifics. These regions are: Western Bulgaria; Central North and Northeastern Bulgaria; Thrace and the Rhodope mountains; the Black sea coast.

CHAPTER I. INTRODUCTION IN THE PROBLEMATIC

Visibility of prehistoric weapons

This part examines the problems of recognizing prehistoric weapons. They are due both to the lack of written sources and to the absence of parts of the artifacts, which were made by organic materials like wood, hide, etc. It is possible that some of the weapons used did not survive in the archaeological record at all (like wooden bows and arrows, spears, etc.). Another problem is that artifacts, which are traditionally defined as tools, may have also served as weapons (like some flat axes). In some cases even if the parts of the artifacts that we find clearly show that they belonged to weapons it is difficult to ascertain the exact kind of these weapons. Typical examples are points of arrows and spears, which can be very similar to each other.

General classification of weapons

In the large group of attacking weapons two classes have been differentiated: close combat and distance combat weapons. In terms of the main goal of the study this classification provides grounds to distinguish between artifacts, which were probably specialized for use in battle (“close combat weapons”) and those, which may have been used both in hunting and in warfare (“distance combat or projectile weapons”). Each of the classes is subdivided into categories of weapons, formulated on the basis of common shape and thus common function. The “close combat weapons” class includes maces, hammer-axes, double axes and double hammers and the “distance combat weapons” class includes bow and arrows, spears and slings. In some of the categories subcategories are differentiated according to the material artifacts were made of.

Terminology

The main problems regarding use of different terms in the archaeological literature for some of the artifacts, especially shaft-hole hammer axes, double axes and double hammers, are discussed.

Database

The study is based on the analysis of over 1200 artifacts. A large number of them are unpublished or the published information is very scarce. About 90% of the finds come from excavated Chalcolithic sites (settlements and cemeteries). The others are stray finds (collective or singular), which may be dated in the Chalcolithic according to their morphological features and/or other materials found with them.

CHAPTER II. HISTORY OF RESEARCH

The topic of the weapons used in the Chalcolithic in nowadays Bulgarian lands (their appearance, development, spread and the problems regarding their use) has not been thoroughly studied in the literature. Although a number of different artifacts have been defined as weapons by many researchers usually there are no particular arguments used to prove such function. Most of the categories of objects in question lack summarizing publications, with the exception of copper hammer-axes and flint arrowheads and spearheads. The only two summarizing studies regarding the topic of specialized weapons and evidences of armed conflicts in the prehistory of nowadays Bulgaria are made by J. Chapman and M. Ivanova.

CHAPTER III. CLOSE COMBAT WEAPONS

III. 1. *MACES*

The mace is a close combat weapon made of wooden handle and head of harder material (stone, metal), which has to increase the striking power. The objects attesting the existence of such weapons in the Chalcolithic in Bulgaria are 36 (so far) stone mace-heads. The shape of all of them is simple, usually close to sphere or cone. Round hole for attaching the handle is bored in the middle. According to the morphological features 4 types have been defined: type I is close to sphere; type II is rounded biconical; type III is rounded cylindrical-conical and type IV is symmetrical biconical.

The earliest mace-heads attested in nowadays Bulgarian lands are dated to the Early Neolithic. In the Chalcolithic increase in their number and territorial spread is visible. Type I is most largely spread and attested in all cultural areas and all phases of the Chalcolithic. The small number of artifacts from the other types (especially III and IV) does not provide grounds for outlining trends in their territorial spread and cultural development.

This category of artifacts is defined by almost all researchers as specialized weapons and/or symbols of status and prestige. Among the proofs for this presented in the current study is their morphological similarity with the stone hammer-axes (battle axes), suggesting similar function. The connection between these two categories of stone artifacts is most clearly shown by the mace-like axes from Krivodol and Karnobat settlements. They are approximately spherical but an edge is deliberately shaped.

The polished surface of the mace-heads, which has mainly visual effect, suggests the importance they had, while the notches and breakages on a number of them show their real use. The use of mace-heads as close combat weapons and may be as status symbols as well is also supported by a number of later historical examples from Egypt, Mesopotamia, etc.

III. 2. *HAMMER-AXES*

The hammer-axes (also known as shaft-hole axes) are artifacts made of stone, copper and antler with a hole bored to insert a handle. In most of the cases one part (defined as the front part) of the objects ends with a cutting edge parallel to the handle axis (like an axe) while the other has a butt end (like a hammer). The sharp part of some artifacts, mainly antler ones, is shaped like a perforating point rather than cutting edge. The diameter of the shaft-hole is usually small (between 17 and 25 mm), which suggests quite small and light handle. This assumption is supported by two stone hammer-axes from the Varna I cemetery, found together with gold cylinders covering their handles. The diameter of the cylinder (and of the handle, respectively) is approximately the same as that of the hole and their total length is between 35 and 40 cm.

III. 2. 1. *STONE HAMMER-AXES*

The conclusions made in the study are based on the analysis of about 400 stone hammer-axes. Approximately 90% of them come from excavated Chalcolithic sites, mainly settlements. Whole or almost whole (the entire shape can be reconstructed) are about ¼ of the artifacts analyzed. A classification of the stone hammer-axes from the Bulgarian Chalcolithic, based on their morphological features, is presented in the study. According to the horizontal longitudinal section (plan-view) of the objects 7 types have been defined:

Type I: The front part is triangular and the back is trapezoid.

Type II: The front part is triangular and the back is trapezoid. The specific feature distinguishing type II from type I is the edge that accentuates the turning point between the front and the back part.

Type III: The shape is close to oval. The sides are arch-shaped, without defined turning point between the front and the back part. The maximal width (respectively the shaft-hole) is near the middle of the artifact or slightly moved towards the butt end.

Type IV: The shape is close to that of type III but some particular differences are visible. The maximal width is close to the butt end and the butt end itself is oval, without flat hammer.

Type V: The shape is close to triangle.

Type VI: The shape is close to type III. A specific distinguishing feature is the arch-shaped widening (“protrusion”) at the maximal diameter.

Type VII: The shape is close to rectangle with triangular part forming the front edge.

The vertical longitudinal section and the vertical cross section (at the maximal width, across the shaft-hole) are both used as criteria to define subtypes. 21 subtypes have been attested. According to the differences in the sharp part 4 variants have been distinguished: **a** – straight or almost straight cutting edge; **b** – arch-shaped edge; **c** – triangular edge; **d** – perforating point.

Along with the morphological differences certain metrical ones are also visible and are sometimes considerable. On this basis three groups have been defined. The main distinguishing criterion is the thickness across the hole, which is usually the maximal thickness of the hammer-axes as well. Group A includes massive artifacts with a thickness exceeding 40 mm. Group B covers most of the hammer-axes known, between 15 and 40 mm thick. Group C comprises miniature objects, with a thickness less than 15 mm, length less than 80 mm and width less than 35 mm.

Certain interconnections among the groups and types of stone hammer-axes have been observed. In the most numerous group (B) all types (except VII), subtypes and variants are attested. In group A both types II and IV and variants **c** and **d** are lacking. Group C is the less numerous one, including mainly fragments of artifacts. The whole objects belong to type I.

The analysis of the chronological and territorial spread of the stone hammer-axes show that in nowadays Bulgaria the first appeared in the beginning of the Chalcolithic, almost synchronously in different cultural areas (as far as it can be attested so far). The situation in neighboring regions is similar. Only for the Vinca culture area in nowadays Serbia earlier date for their appearance has been suggested. However, the available data do not provide sure grounds to ascertain the center of origin (if one) of stone hammer-axes. Anyway, they obviously spread quickly over vast territories.

Certain specifics are visible in the chronological and territorial spread of types and subtypes. Type I (which is most numerous) and type III are attested in all regions. In Northwestern Bulgaria they are presented from the Early Chalcolithic on. In the other regions there are no surely dated whole artifacts from this period which hampers sure conclusions. Type II is spread in Northeastern Bulgaria and the Black sea coast and is dated in the Late Chalcolithic. Its subtype 5 is attested only in the Varna lakes area. Types IV, V and VI are presented by a small number of artifacts. So far there is no data for their spread in the Black sea coast area and for the existence of type V in Thrace. Type VII is presented by only one object, from Northwestern Bulgaria. Regarding the variants of stone hammer-axes the lack of piercing points (variants **c** and **d**) in Western Bulgaria and Thrace (with one exception from Krivodol) should be noticed. Differences in the spread of the groups are also visible. Group B is most numerous and most widely spread – in all cultural areas. However, in Northwestern Bulgaria it is more poorly presented than in the other regions. Comparatively large percent (30%) of the stone hammer-axes from this region belong to group A. The number of the artifacts from this group sharply decreases in Northeastern Bulgaria and in Thrace and the Black sea coast they have not been attested so far. Group C is too scanty, especially in Western Bulgaria. There it is presented by a single find from the Devetaki cave.

Important for the goals of this study is the analysis made on the morpho-metrical features of the stone hammer-axes, the use-wear traces on them and the raw materials used. This analysis is essential for clarifying the function of the artifacts. The objects from groups B and C have rather narrow blades (between 20 and 25 mm for group B), often without a sharp cutting edge (triangular, piercing or blunted). The blades of the artifacts from group A are wider but usually with bigger sharpening angle.

The use-wear traces are usually similar on the two opposite “working” edges: small notches or

breakages on the blade edge and the butt end. They are quite the same on different artifacts, from different groups and types, and differ mainly by intensity: usually the edges of the group A artifacts bear more and bigger notches. There are also stone hammer-axes without macroscopically visible use-wear traces. It should be noticed that all findings from type II, subtype 5 belong to this group.

The finding context of the stone hammer-axes from the Chalcolithic is also analyzed, with an accent on the cemeteries.

III. 2. 2. COPPER HAMMER-AXES

96 copper hammer-axes from the Chalcolithic in Bulgaria are known so far. All of them are whole. The classification made by H. Todorova (Тодорова 1986, 149; Todorova 1981) with some corrections proposed by K. Dimitrov (Димитров 2007, 41) is used in the study. Some additional small changes are made. According to the overall shape of the artifacts 4 types have been defined: Plochnik, Vidra, Varna and Devnya. In Vidra and Devnya types 3 subtypes have been differentiated (A, B and C). Based on the shape of the sharp edge 3 variants have been defined – **a**, **b** and **c**, corresponding to the respective variants of stone hammer-axes.

All copper hammer-axes with information about stratigraphic position or finding context date to the II and III phase of the Late Chalcolithic. The available data do not allow sure conclusions about the chronological development of different types. According to some data from neighboring regions an earlier origin of the Plochnik type may be suggested.

On the other hand, certain differences in the territorial spread of the types are visible. The Plochnik type has been found mainly in Western Bulgaria and Thrace and almost all known finds from the first region belong to it. In Northeastern Bulgaria and the Black sea coast area only few artifacts of the “classical” Plochnik type have been found so far. The Vidra type is the most numerous one and is attested in all cultural areas. However, certain regional specifics in the spread of its subtypes are visible. The Vidra B subtype has been found only in Northeastern Bulgaria and along the Black sea coast, being particularly numerous in the Varna lakes region. In Thrace more massive artifacts of Vidra A and C subtypes were spread, close in dimensions to the Plochnik type hammer-axes. The Varna type is typical of the Black sea coast area. Few artifacts have been found so far in the inland of Northeastern Bulgaria. The Devnya type is the least numerous and have most limited spread. Its “classical” shape is known only from the Varna lakes region.

The analysis of the copper hammer-axes spread in wider territorial and cultural context confirms the main observations made for the Bulgarian lands. The artifacts of the Plochnik type are concentrated in the territories of Serbia, Western Bulgaria, Western Romania and Hungary, i. e. the area of the Krivodol-Salcutsa-Bubani Hum Ia and Tiszapolgar cultures, while the main region of the spread of the Vidra type includes Northeastern Bulgaria, Eastern Romania and Moldova, i. e. the area of the Kodzadermen-Gumelnitsa-Karanovo VI, Varna and Cucuteni-Tripolie cultures.

The analysis of morpho-metrical features of copper hammer-axes shows certain relations between them and the types of hammer-axes. The most massive artifacts are those of Plochnik and Vidra C types (similar to group A of the stone hammer-axes). They have widest cutting edges (of variants **a** and **b**) and widest butt ends. The artifacts of other types are definitely lighter and more “graceful”, with smaller edges and butt ends. Their sharp edges are mainly of variants **b** and **c**. Some miniature copper hammer-axes have been also attested.

The use-wear traces are similar to the ones visible on stone hammer-axes. They have been observed on artifacts of all types. Some objects with strongly deformed sharp edge and butt end are worth noting.

The finding context of the copper hammer-axes is also analyzed. Most of them were found in cemeteries and especially in one particular cemetery – Varna I. They were attested both

in inhumation graves (mainly male ones) and in cenotaphs. Some collective stray finds are discussed as well.

III. 2. 3. ANTLER HAMMER-AXES

Unlike the stone and copper hammer-axes, which have similar morphological features, the antler shaft-hole artifacts show large variety. There are objects made of different parts of the antler; with different shape of both ends: one being a sharp edge and the other butt (like a hammer), both being sharp, one or both ends being hollow (sleeves?); with different shape of the sharp edge (cutting or piercing); with different surface treatment; different shape and dimensions of the shaft-hole; etc. All these differences in shape, often significant, suggest different function of the artifacts as well: as agricultural tools, picks, axes, weapons, etc. The detailed analysis of all antler shaft-hole artifacts and their use is beyond the scope of this study. It is also hampered by the lack of publications and the fragmentary state of a large number of findings.

Regarding the main goals of the study special attention is paid to the possible use of some particular antler shaft-hole artifacts as battle axes. This function is suggested on the base of both their morpho-metrical features and the finding context. Most important are the “collections” from cemeteries and especially the two most numerous ones: from the Durankulak and Varna I cemeteries. Antler shaft-hole axes were found both in inhumation graves (mainly male ones) and in cenotaphs. In the inhumation graves they were usually found in position as being hold in one hand (like a large percent of the stone and copper hammer-axes). This suggests that they had quite small handles, unsuitable for a hoe, ard or pick, for example.

Most of the antler shaft-hole artifacts from Chalcolithic cemeteries were found in poor condition, but those which were better preserved share common features. One of their parts is elongated, ending in cutting or piercing edge and the other is more massive, shaped as a hammer. The shaft-hole is round or oval. The surface of the artifacts is well smoothed. The main differences observed regard the shape of the sharp end. According to it three variants have been defined:

- Variant 1: Piercing edge (point).
- Variant 2: A cutting edge perpendicular to the handle is formed by cutting of the lower side of the artifact. The edge is narrow and arch-shaped.
- Variant 3: A cutting edge is formed parallel to the handle. It is quite wide and slightly arch-shaped.

Among the findings from cemeteries with preserved edge variant 1 significantly dominates.

The antler shaft-hole axes known from cemeteries appeared in the Early Chalcolithic but their number largely increased in the Middle and Late Chalcolithic. Almost all of them (with a single exception) are from the Black sea coast area. Antler hammer-axes with similar features are also known from Chalcolithic sites in Northeastern Bulgaria. The finding context of some of them (next to or in the fortifications of the settlements) also supports their possible interpretation as weapons. There are also similar artifacts known from Thrace but there is no additional information (regarding specific finding context or other) which may prove their use as battle axes. It should be noted that so far I have no information of antler hammer-axes close to the ones described from Black sea coast cemeteries coming from Northwestern Bulgaria.

However, the general problem regarding the determination of the function of the antler shaft-hole artifacts hampers to a large extent the analysis of the chronological and territorial spread of battle axes.

III. 3. DOUBLE AXES

Double axes are shaft-hole artifacts with two ends shaped as sharp edges. In some of the cases one or both of the edges are piercing but not cutting ones.

III. 3. 1. STONE DOUBLE AXES

The appearance of such artifacts in the Chalcolithic in Bulgaria is not surely proven yet. It is suggested on the basis of two finds without clear context but with good similarities with some stone hammer-axes from the Chalcolithic, regarding their morpho-metrical features and especially the shape of the edges (variant **d** of the hammer-axes). Both objects come from the Lovech town region and are almost identical.

III. 3. 2. COPPER DOUBLE AXES

Two types of copper double axes have been differentiated on the basis of the shape of their edges:

- Type I: One part is an arch-shaped, almost triangular edge parallel to the handle and the other is a long piercing edge. Two artifacts of this type are known so far. Only one of them has sure finding context. It comes from the Late Chalcolithic Varna I cemetery.

- Type II: Both parts are identical, ending in rather piercing than cutting edges. The shape is similar to the stone double axes. The type is represented by only one stray find from Aprlitsi, Stara Zagora region. Some analogies with the Yasladani type shaft-hole axes suggest its dating in the so called “transitional period” between the Chalcolithic and the Bronze age.

III. 3. 3. ANTLER DOUBLE AXES

Two types of antler double axes have been differentiated among the Chalcolithic artifacts from Bulgaria:

- Type I: One end is shaped as triangular edge parallel to the handle and the other part (the longer one) is cut from one side to form an arch-shaped edge parallel to the handle. Just a single artifact from this type is known. It is found in the Late Chalcolithic layer of the Durankulak tell (Varna culture).

- Type II: One end is cut from one side to form an arch-shaped edge parallel to the handle and the other is a piercing one. The shaft-hole is approximately in the middle of the artifact. The shape of the edges (and especially the piercing one) and the small shaft-hole (thus, probably, small handles as well) suggest possible use as weapons. However, there is no other data (as specific finding context) to prove this hypothesis. Objects of this type are specific for the Kodzadermen-Gumelnitsa-Karanovo VI culture.

III. 4. FUNCTION OF THE SHAFT-HOLE AXES

Different opinions about the function of the shaft-hole axes made of stone, copper or antler have been stated. They have been interpreted as agricultural or wood-working tools, as forging hammers (some particular stone artifacts), as weapons or status symbols. These hypotheses are analyzed in this study paying attention to all data, which may clarify the function of the artifacts: morpho-metrical features, use-wear traces, finding context.

It should be noted that none of the hypotheses offered in the literature suggesting working function of the hammer-axes includes at the same time those made of stone, copper and antler. However, the similarities of the stone, copper and antler shaft-hole axes together with their identical finding context in cemeteries suggest that they had identical function. All of the data analyzed show that these were most probably weapons. Moreover, they can be referred to specialized combat weapons since due to the small radius of action the shaft-hole axes are not suitable for hunting.

Briefly summarized, the evidences are:

First: placing the handle in the head allows two separate functional parts to be formed: an edge and a butt end (hammer-axe), two edges (double axes) or two butt ends (double hammers).

This is particularly convenient for the combat use of the artifacts since it facilitates the striking of blows in different directions.

Second: the small size of the handles indicates that the items discussed are not very functional either as heavy percussive tools (axes or hammers) or as farming tools. However, they have certain advantages in combat use. The possibility for holding them in one hand releases the other, e.g. for using a shield. Moreover, the thinner, short and light handles are more convenient both for continued carrying (which is not necessary when using working artifacts) and for fast, sudden movements as required in a combat situation.

Third: the specific use-wear traces, which are identical on the two different parts of the shaft-hole axes, suggest their similar use. It is possible that they are result of a strike into defensive armor or other similar weapon.

Forth: the specific morphometric characteristics of the edges of most items under discussion and especially their piercing qualities.

Fifth: the finding context of the artifacts – both in cemeteries (where they are typically found in adult male burials, usually having central position in the grave, including some of the richest Chalcolithic graves) and the specific situation in which the copper hammer-axe from tell Hotnitsa was found.

The sporadic use of some hammer-axes (especially more massive ones) as working tools cannot be excluded but there is no evidence to assume that this was the main function of the whole kind of artifacts (stone, copper and antler ones).

The central place which hammer-axes had in some very rich graves, as well as the polishing and lack of use-wear traces on some of them suggest that they gradually acquired a representative role as symbols of strength and power.

III. 5. DOUBLE HAMMERS

Double hammers are shaft-hole artifacts with both parts shaped as butt ends – hammers. Only stone items are known from the Chalcolithic in Bulgaria. They are quite rare. The earliest known objects date to the Early Chalcolithic in Western Bulgaria. In the Middle and Late Chalcolithic they have been attested in Northeastern Bulgaria and Thrace as well. In terms of morphology the stone double hammers have intermediate position between mace-heads and hammer-axes. This suggests their similar use, as weapons.

III. 6. DEVELOPMENT OF CLOSE COMBAT WEAPONS IN BULGARIAN CHALCOLITHIC

The analysis of the available data shows that the earliest specialized percussion weapons for close combat which appeared in the Bulgarian lands are the maces (attested since the Early Neolithic). During the Early Chalcolithic (the beginning of the 5th millennium BC) the first stone and antler shaft-hole axes and stone double hammers occurred. It is possible that the battle axes originated from the maces, as a response to the decreasing effectiveness of the latter against the developing protective armament (possibly leather and/or wooden) and the need for piercing weaponry for close combat. Indeed, the maces did not lose their significance when the battle axes appeared and their number even increased till the end of the Chalcolithic. However, both maces and double hammers remained much less in number than stone hammer-axes, which obviously dominated as preferred close combat weapons. The latter were scanty only in the Hamangia and Varna cultures, for which antler battle axes were typical.

During the Middle and Late Chalcolithic the spread of close combat weapons and especially of stone hammer-axes sharply increased. The shape of their percussion parts improved with a tendency toward higher pierceability. The stone hammer-axes may be regarded as a prototype of

the copper ones, which started to be produced in the Late Chalcolithic as a result of the improving metallurgical skills. The copper shaft-hole axes can be assumed as an improved version of the stone and antler pieces: they are stronger, sharper, heavier at the same volume and as a result, more piercing as well as more durable. Besides, they can be repaired and retreated. It seems that their occurrence and development reflect the demand for more efficient close combat weapons. However, the copper shaft-hole axes do not replace their stone and antler prototypes. Obviously, due to the value of the material and the more complicated workmanship, they were affordable only for certain individuals.

The development of the hammer-axes also resulted in the appearance of double axes in the end of the Chalcolithic.

The Late Chalcolithic was the summit both in the spread of close combat weapons and of their typological variety. Occurrence of certain “fashions” is also visible, probably reflecting the increasing importance of these artifacts and their transformation into prestige items, symbols of strength and power.

CHAPTER IV. DISTANCE COMBAT WEAPONS

IV. 1. *SLINGS*

A sling is a device typically used to throw a blunt projectile such as stone, clay or lead “sling-shot”. It has a small cradle in the middle of two lengths of cord. The use of sling as a projectile weapon is attested historically and ethnographically since Antiquity till nowadays. Because of the perishable materials slings are made of it is hard to expect them to be found in prehistoric sites and there are no cases known so far. However, a number of researchers interpret stone and clay artifacts from the Neolithic and Chalcolithic as “sling-shots”.

IV. 1. 1. *CLAY “SLING-SHOTS”*

According to differences in the shape of the so-called “sling-shots” two main types may be defined: rounded biconical (type I) and spherical (type II). They have similar dimensions: the length varies between 35 and 60 mm for type I and the diameter of the type II artifacts is between 25 and 45 mm; the weight varies between 25 and 65 g. The baking degree varies from unbaked to very well baked ones. Such artifacts have been found in quite few Chalcolithic settlements in Bulgaria but their spread covers all periods and cultural regions. Different interpretations regarding their function have been offered so far: sling-shots (used as weapons or for chasing birds away from the crop, or for driving in astray sheep); objects for testing the temperature in pottery kilns; grain models with specific role in agricultural rituals (regarding type I) and game balls (regarding some artifacts of type II).

Because of the main goals of this study the research is concentrated on their possible use as weapons. This hypothesis is based mainly on the parallels with lead sling-shots from Antiquity (especially of the type I artifacts) and on the similar shape and dimension of the clay objects, which would provide grounds for training and achieving better accuracy than the use of accidentally collected pebbles. However, the material they are made of questions their use in battle or big game hunting, while small game hunting would require too high accuracy. The historical evidence show that the use of clay sling-shots was rather sporadic than widely spread. The stone ones were much more preferred, being easily available and far more functional. The specific features of some finds of type II also reject the “weapon hypothesis”: one of them is hollow and the other two are decorated.

IV. 1. 2. *STONE “SLING-SHOTS”*

Stone objects defined as “sling-shots” have been found in all periods of the Chalcolithic and in all cultural regions. Most of them are roughly spherical. Stones with suitable natural shape were

used but in most of the cases additional hammering is visible. The diameter of the artifacts vary between 45 and 80 mm (in few cases even larger) and the weight – between 220 and 670 g (but in one case almost 2,5 kg). In a number of artifacts a flat platform was attested.

In my opinion, some arguments question the interpretation of these artifacts (or at least some of them) as weapons. First, the artificially made flat platforms are useless for a sling-shot but suitable for a hammer-stone. Indeed, on most of them use-wear traces (notches and small breakages) are visible. The second obstacle is the big dimensions of some of the artifacts (heavier than 500 g). The historical data show that the sling-shots used were lighter. Such weight is suitable neither for carrying (in a battle campaign or in hunting) nor for precise shooting. Besides, there is no information for accumulation of such stones in settlements, which may suggest possible defensive supply.

Theoretically, the use of some smaller stone balls (not heavier than 300-400 g) with roughly spherical shape and no flat platforms as weapons is more probable. However, when just a few artifacts are found in settlement or domestic context their interpretation is also doubtful.

All these observations do not mean that sling was not known and used as a weapon in the Chalcolithic in Bulgaria. However, the projectiles used may have been simple stones, either additionally shaped or not, which are very difficult to distinguish as weapons in the bulk of archaeological finds. It is also probable that sling-shots were not accumulated or made in settlements but gathered “on the way” in cases of hunt or battle march.

IV. 2. BOWS AND ARROWS

IV. 2. 1. BOWS

The bows used in the Chalcolithic in Bulgaria were probably entirely made of wood. The only evidence of them we have so far is from the Varna I cemetery. These are golden “cylinders” found in four of the graves, which were probably decoration of such weapons. This interpretation is most surely confirmed by the position of the golden fittings in grave 43. They were found in symmetrical pairs (the bigger in the middle, the smaller in the ends) forming a light arch along the body of the buried man. This position suggests that they decorated quite short (about 1,20 m) simple symmetrical bow.

IV. 2. 2. BONE ARROWHEADS

Bone artifacts with different morphological and metrical features have been defined as arrowheads in Bulgarian archaeological literature. They may be generally divided in two large groups: objects with both ends thinned out and sharpened (double points) and artifacts with one sharp and one butt end (the butt one being the epiphysis of the bone). At the same time items from both groups have been identified as awls by some researchers. Thus, special attention is paid in this study on the criteria for discriminating between arrowheads and tools (awls, needles, etc.). Different possible data have been analyzed: the features of the artifacts (morphological specifics and use-wear traces, especially breakages), the finding context of some of them, historical and ethnographic data, experiments conducted.

The analyses show that most of the double-pointed bone artifacts may be regarded as arrowheads: mainly the items with a marked tang but probably also the symmetrical ones. The points of some objects are blunt.

The bone double points analyzed have close dimensions. About 2/3 of the artifacts for which metrical data is available are between 40 and 65 mm long and usually about 2-3 g heavy. Five types have been defined according to differences in the longitudinal shape of the objects:

- Type I: It is characterized by a marked tang.
- Type II: The artifacts of this type do not have a marked tang but the whole body thins out in the back part to facilitate inserting into the shaft (asymmetrical double points).

- Type III: Symmetrical double points. Both ends are identically shaped which hampers discrimination between front and back part.
- Type IV: Approximately rhomboid shape. The front part is shorter than the tang.
- Type V: The type is presented by only one item. It differs significantly from the other bone arrowheads. The body is triangular and flat, with two side notches, probably for binding to the shaft.

7 subtypes have been differentiated according to the shape of the cross-section and 4 variants according to the shape of the point (piercing; rounded; flat – blunt; cutting edge).

Type I is the most numerous one, including almost 2/3 of the finds analyzed. It is the only type in which all subtypes and variants have been attested.

The earliest bone arrowheads from Bulgaria which may be surely dated belong to the Early Chalcolithic. Their spread sharply increased in the Late Chalcolithic. Over 90 % of the finds date to this period.

The analysis of the territorial spread shows almost complete absence of bone arrowheads (at least according to the information available so far) in Western Bulgaria and the Black sea coast, as well as in Greece. It seems that these artifacts were typical mainly for the Kodzadermen-Gumelnitsa-Karanovo VI culture, where they developed continuatively from the respective Early and Middle Chalcolithic cultures.

No certain chronological trends or territorial differences are visible in the spread of types, subtypes and variants. Probably the morphological differences reflect rather some functional specifics (use of different arrowheads for different purposes) than local phenomena.

The finding context of bone arrowheads is also analyzed. Almost all of them were found in settlements. Among the very few finds from cemeteries one is especially intriguing. This is a point from the Golyamo Delchevo cemetery, found between the ribs of a woman's chest. It is possible that the arrowhead was not part of the grave goods but the weapon that caused the death of the woman and remained stuck in her body.

Belemnites

According to R. Popov some artificially shaped belemnites, close in shape to the bone double points, were also used as arrowheads. However, the analysis of the morphological features of these objects and the finding context of some of them question such a use. Considering a number of historical and ethnographic examples it is more probable that belemnites were respected as “darts from the heaven” because of their natural shape, than actually used as weapons. It is possible that they served as amulets of hunters and warriors.

IV. 2. 3. COPPER ARROWHEADS

Symmetrical or slightly asymmetrical double-pointed copper artifacts, similar to types II and III bone arrowheads, are known from the Bulgarian Chalcolithic. However, unlike the bone artifacts, the tang of the copper ones was necessary for inserting into any kind of handle (short or long) and thus is no sure argument in determining their function. The finding of some copper double points inserted in short bone handles shows that they were used as awls. This may have also been the function of the other similar objects.

Worth noting is one double point with marked tang, very close to type I bone arrowheads (from Telish-Luga settlement). However, there are no arguments showing that it was used as a projectile point. Generally speaking, the use of copper arrowheads in this very early period of metallurgy is questionable, because the risk of losing the rare material objects was great, while bone and flint tips were absolutely functional as well.

IV. 2. 4. FLINT ARROWHEADS

Flint arrow- and spearheads are a distinct group of artifacts, which differ from the other flint objects both by morphological specifics and, usually, in terms of manufacture. Their shape is usually close to isosceles triangle. The lateral edges are sharp and cutting and join into piercing point. In most of the cases the base is thin, ending in sharp edge facilitating insertion into the shaft. Most of the projectile heads are bifacially retouched.

The distinction between arrowheads and spearheads in the total absence of their shafts is very problematic. It is additionally hampered by the fact that the dimensions of the head depend to a large extent on the specifics of each particular weapon and may vary a lot both for arrows and spears. Both different criteria for this discrimination (length, weight, etc.) and different values of the criteria used have been proposed in the archaeological literature.

The main criterion used in the current study to discriminate between flint arrowheads and spearheads is the length of the artifacts. The analysis of the metrical features of all available finds shows that among the length values there are certain intervals with concentration of artifacts and an intermediate interval almost lacking objects: between 51 and 57 mm. Although approximately, the length of 51 mm is considered a border between arrowheads and spearheads. Additionally the weight of the projectile points and a border value of 10 g is used.

The classification of the flint arrowheads is based on the shape of their horizontal longitudinal section. According to the symmetry of the artifacts two groups are differentiated:

- Group A: Symmetrical points. The items of this group are usually bifacially retouched.
- Group B: Asymmetrical points. These are the so-called geometric microliths. Their shape is asymmetrical trapezoid or, rarer, asymmetrical triangular (close to right-angled triangle). These artifacts are also discernible for their small size (between 15 and 33 mm long) and manufacture (on bladelets).

11 types have been defined among the group A arrowheads on the basis of the shape of lateral edges and base:

- Type I: Both the lateral edges and the base are straight or almost straight. The overall shape is of isosceles (or in few cases equilateral) triangle.
- Type II: The lateral edges are straight and the base is concave.
- Type III: The lateral edges are straight and the base is convex.
- Type IV: Both the lateral edges and the base are convex and the transition between them is smooth, with no angles.
- Type V: The lateral edges are convex and the curve of the arch is closer to the base. The base is concave.
- Type VI: The lateral edges are convex and the curve of the arch is closer to the base. The base is also convex, with angles between it and the lateral edges.
- Type VII: The lateral edges are convex and the curve of the arch is closer to the point. The edges are almost parallel in their proximal part. The base is straight.
- Type VIII: The lateral edges are convex and the base is concave.
- Type IX: The lateral edges are straight. In the middle of the base there is an arch-shaped notch.
- Type X: There are side notches on the lateral edges, placed closer to the base. The base is straight.
- Type XI: The lateral edges form an obtuse angle. The overall shape is almost rhomboid.

The artifacts with straight lateral edges without side notches (types I, II and III) dominate among the analyzed flint arrowheads, followed by those with convex lateral edges (types IV-VIII). Types X and XI are represented by few finds.

The projectile points of group B are much less in number and typological variety. According to their shape and position towards the shaft, respectively the way they “work”, two types have been differentiated:

- Type I (piercing points): The shape is asymmetrical trapezoid or almost triangular. The short cathetus was inserted into the shaft.

- Type II (cutting points): The shape is symmetrical trapezoid. The short base of the trapeze was inserted into the shaft and the long base was the functional part of the artifact. The way such point worked was thus cutting but not piercing. Only one such find is known from the Chalcolithic in Bulgaria.

Certain differences in the chronological and territorial spread of the two groups are visible. The group B arrowheads appeared in nowadays Bulgaria in the Late Neolithic. In the Chalcolithic they are attested only along the Black sea coast, mainly in the Hamangia culture (Early and Middle Chalcolithic). It seems that during the Late Chalcolithic they were replaced by the symmetrical points.

The group A arrowheads appeared in the Early Chalcolithic. Few finds from Thrace, Western and Northeastern Bulgaria are known from this period. Types I, II and III have been attested. In my opinion the available data do not support the hypothesis suggested by some authors that these artifacts appeared in nowadays Bulgaria as a result of influence from the Aegean and Adriatic areas. Both significant morphological differences between the arrowheads from these regions and the lack of finds from the intermediate territories (Eastern Macedonia, Southwestern Bulgaria and Aegean Thrace) confute it.

The spread of symmetrical arrowheads expanded in the Late Chalcolithic and covered all cultural regions in nowadays Bulgaria. The typological variety also increased. Some specifics in the territorial spread of different types are visible. The greatest variety is observed in Northeastern Bulgaria.

Regarding the finding context it is worth noting the large collection of flint projectile points from Madara. It includes artifacts in different manufacturing stages, showing that this was a workshop specialized in their production. It is also interesting that all finds from grave context are from cemeteries from the Black sea coast area and belong to group B.

IV. 3. SPEARS

The spears can be used both by throwing at a distance (throwing spear or javelin) or for thrusting, hold in the hand (pike). However, there are no shafts of spears preserved from the Neolithic and Chalcolithic in the Balkans, which could give more information on the dimensions and specific function of these weapons. The only source of information about their existence and use are the heads made of flint, bone or antler (?) and copper.

IV. 3. 1. FLINT SPEARHEADS

On the basis of the analyses mentioned, symmetrical and usually bifacially retouched flint points longer than 51 mm and heavier than 10 g are regarded in this study as spearheads. Their classification is based on the same principles as the classification of symmetrical flint arrowheads. 13 types have been differentiated:

- Type I: Both the lateral edges and the base are straight or almost straight. The overall shape is of isosceles triangle.

- Type II: The lateral edges are straight and the base is concave.

- Type III: The lateral edges are straight and the base is convex.

- Type IV: Both the lateral edges and the base are convex and the transition between them is smooth, with no angles.

- Type V: The lateral edges are convex and the curve of the arch is closer to the base. The base is straight or almost straight.

- Type VI: The lateral edges are convex and the curve of the arch is in the mid-part or closer to the point. The edges are almost parallel in their proximal part. The base is straight.

- Type VII: The shape is similar to type IV. Both the lateral edges and the base are convex. The specific feature defining the type is two small symmetrical “barbs” on the edges, close to the base.
- Type VIII: The lateral edges are straight. In the middle of the base there is an arch-shaped notch.
- Type IX: There are side notches on the lateral edges, placed closer to the base. The base is straight.
- Type X: There are side notches on the lateral edges, placed closer to the base. The base is convex.
- Type XI: There are side notches on the lateral edges, placed closer to the base. The base is concave.
- Type XII: Wide notches in the proximal part of the spearhead form a kind of tang, which is wider in the base. The lateral edges are straight in the distal part.
- Type XIII: Tanged spearhead. The distal part is triangular, with straight edges. The tang is almost rectangular.

Most of the types of spearheads are identical with arrowheads types. However, some differences are visible. The “simplest” types (with straight edges and no notches: I-III), which are most numerous among the arrowheads (almost 60%) cover just about 13% of the spearheads known. The types with convex lateral edges are best represented among the spearheads: almost 60%. Leader among them is type IV, which includes 30% of all spearheads analyzed. Another visible difference is the high percentage (about 20%) of points with side-notches (types IX-XII). Obviously these points were typical for spears (probably for securing better attachment of the heavier point to the shaft) and were used on arrows rather as an exception.

The earliest flint spearheads among the finds with stratigraphic data from Bulgaria can be dated in the Middle Chalcolithic. Most of the artifacts belong to the Late Chalcolithic and mainly to its phases II and III. In this time flint spearheads spread in all cultural regions of Bulgaria. The situation in Southern Romania is similar.

J. Lichardus and M. Lichardus-Itten proposed that the spearheads in Cucuteni-Tripolie, Kodzadermen-Gumelnitsa-Karanovo VI, Varna and Krivodol-Salcutsa-Bubani hum Ia cultures spread from the northeast, as an influence by the steppe cultures Sredni Stog II, Novodanilovka and Hvalinsk (Lichardus, Lichardus-Itten 1993). Several arguments confute this hypothesis. First, in nowadays Bulgaria artifacts similar in shape and technique of manufacture, namely flint arrowheads, appeared in the Early Chalcolithic. Second, the Sredni Stog II, Novodanilovka and Hvalinsk cultures are synchronous rather to the end of the Chalcolithic in Bulgaria. Third, besides the similarities between the spear points from the Northern and Western Black sea coast certain morphological differences are visible as well. The data available so far rather suggest local origin of the spearheads in the Balkans (in nowadays Bulgaria and Romania), probably on the base of already developed arrowheads manufacture.

The lack of stratigraphic information for most of the flint spearheads hampers tracing of possible chronological development. However, certain territorial specifics are visible. The flint spearheads are most numerous in Northeastern Bulgaria (over 40 % of the finds) and the greatest typological variety is observed there. This variety is also large in the Black sea coast area but most of the types are presented by singular or very few finds. In Northwestern Bulgaria and Thrace types IV and V largely prevail while those with side-notches are lacking. It seems that the latter ones are specific for the Northeastern Bulgaria and the Black sea coast. Types VII and XIII are attested only in the Varna culture. The latter one (presented by one find from tell Durankulak) suggests influence from the North Pontic steppes. Such an influence is also confirmed by the only arrowhead of type XI from Bulgaria, found in the same building level (IV) of the same tell.

The analysis of the finding context shows almost complete lack of flint spearheads in cemeteries. A concentration of stray collective finds in the Lovech region is also noticeable. It suggests the presence of local production center.

III. 3. 2. BONE SPEAR-HEADS

Finds of bone or antler “spearheads” are mentioned in the publications of a number of Chalcolithic sites in Bulgaria. In most of the cases these are artifacts with a sharp point and a butt end, which is the epiphysis of the bone (sometimes smoothed). This shape of the proximal part hampers the secure fixing of the point to a shaft but offers good support to grip and push with a hand. In my opinion the use of such artifacts as spearheads is too questionable. This function is more probable for objects with thinned proximal part. However, just a few finds of this kind are known which impedes further conclusions on their use and spread.

IV. 3. 3. COPPER SPEARHEADS

Four copper artifacts defined in the literature as spearheads are known from the Late Chalcolithic in Bulgaria. Three of them share similar morphological and metrical features. The front part is widened (leaf-shaped or rhomboid), ending in piercing point; the tang is long and thin; the total length is between 26 and 33 cm. Two of them were found in the Varna I cemetery and the third one is part of a stray find from the city of Varna, known as “Second grave 43”. Their function as weapons is confirmed both by the specific morpho-metrical features and the finding context of the Varna I finds – each one together with a flint spearhead.

The fourth artifact was found in the Peklyuk settlement, Western Bulgaria. It differs significantly from the other three and is closer to the bone arrowheads of type I. However, more or less similar copper objects have been found in short bone handles which show their use as awls. Thus, the finding from Peklyuk cannot be surely determined as a weapon.

IV. 4. SPREAD AND USE OF THE ARROWHEADS AND SPEARHEADS

The earliest sure data about the use of bow and arrows among the sedentary agricultural communities in nowadays Bulgaria come from the Late Neolithic and are connected with the appearance of geometric microliths. However, it is possible that the lack of evidence of these weapons in the earlier periods of the Neolithic is due not to their real lack but to the use of entirely wooden or other archaeologically “invisible” arrows.

The spread of arrow- and spearheads in the Chalcolithic and their gradual increase in number show the elaboration and increasing importance of these weapons. At the same time the variety of materials used, shapes and dimensions suggest certain specialization and differences in their particular use. A number of ethnographic data show differentiation in the use of organic and stone projectile points depending on the specifics of each material and the potentialities it provides. Bone or antler arrowheads are preferred for hunting small animals while flint ones are usually used when larger deadly wounds should be inflicted, i. e. against large game or in battle. Blunt bone or wooden points are designed for hunting small animals with valued fur or birds. It is possible that similar differentiation existed in the Chalcolithic. However, there is no data which may surely prove it. When considering this hypothesis the almost total lack of bone points in Western Bulgaria should be held in mind. In this region their function may have been served by entirely wooden arrows. On the other hand, bone arrowheads may have been also used against people, which is suggested by the artifact found in the chest of a woman from the Golyamo Delchevo cemetery (such cases are also known from the Mesolithic in the Iron Gorge, for example).

In traditional societies spears are used mainly for hunting large game or in warfare. In some tribes a differentiation has been attested between the heads used for javelins (stone points) and for pikes (entirely wooden). It is explained by the risk of breaking the stone point in close combat, which would disarm the warrior using it. The available data do not provide grounds to conclude whether differentiation between javelins and pikes and between the heads used for both kinds of spears existed in the Chalcolithic. To some extent this hypothesis is supported by the finding of

both flint and copper spearheads in two graves of the Varna I cemetery. It is possible that the larger, heavier and more valuable copper heads were used on pikes while the flint ones were for javelins.

It is difficult to answer surely the questions whether bows and arrows and spears were used in armed conflicts in the Chalcolithic and whether there were specialized combat weapons of these kinds. Indirect evidence supporting this hypothesis is provided by the analysis of the role of hunting in the Chalcolithic. According to the archaeozoological researches no significant difference in the domestic/wild animals ratio is visible neither between Neolithic and Chalcolithic nor between Late Chalcolithic and earlier periods. Thus, it is possible that the large increase in number of the arrow- and spearheads in the Late Chalcolithic reflects their battle function.

CHAPTER V. DEVELOPMENT AND DISTRIBUTION OF WEAPONS AND EVIDENCES OF ARMED CONFLICTS IN THE CHALCOLITHIC

In the last chapter of the study a summarizing analysis is made of the development and distribution of all artifacts, which may be regarded as weapons and especially specialized combat weapons. The observations are afterwards discussed in the context of other evidences of possible armed conflicts in the Chalcolithic in nowadays Bulgaria. It is namely in the Chalcolithic when (together with the appearance and spread of weapons) a trend towards defense of the settlements is visible in all cultural regions – both through their relocation on a naturally defended places or by building fortifications around them. Skeletal remains with violent traumas have been also attested, although not numerous. Especially indicative is the situation in the last Chalcolithic building level of tell Yunatsite. A large number of its inhabitants have been found under the burnt houses' debris. On the skulls of some of them traumas have been observed, which according to the anthropologists were caused by blows with hard and heavy sharp-edged objects – most probably copper hammer-axes. Similar situation is observed in tell Ruse.

General analysis of all possible evidences of warfare in terms of time and place is especially tempting, as it may shed light on ethno-cultural processes in the Chalcolithic as well. The accent in this analysis is put on Northeastern Bulgaria and the Black sea coast because almost all totally excavated tells and explored cemeteries from the Chalcolithic as well as most of the weapons with information about stratigraphic position and finding context come from these regions. The first weapons and fortifications in Northeastern Bulgaria appeared almost synchronously, in the II-III phase of the Early Chalcolithic. This suggests that the situation in the region was tense and the population was prepared for armed conflicts. However, direct evidence of such conflicts is lacking: there are no violent skeletal traumas, burnt settlements or other attested. The situation changed in the Middle and the beginning (I phase) of the Late Chalcolithic. Increase in the number of weapons is clearly visible as well as burnt settlements (building levels in tells) all over. The settlements of the Hamangia culture (its IV phase) were also fortified in this period. In the totally excavated cemetery at Durankulak a decrease of the percentage of buried men and increase of the symbolic graves has been observed, together with a decrease of the men's age (only one being older than 40 years). Battle axes appeared among the grave goods. They have been attested in $\frac{1}{4}$ of the male burials and $\frac{1}{2}$ of the cenotaphs. Altogether, these data bear record of armed conflicts, which affected the whole region in question. It is possible that the conflicts were result of the gradual expansion of the Hamangia culture people to the south, to the Varna lakes and Provadia area. It seems that their settling in this area caused clash with the neighboring cultures. Further on, it may be suggested that these conflicts led to the consolidation of larger ethno-cultural (or may be even political?) unities, which are archaeologically attested in unification of the culture on large regions: the so-called cultural complexes Kodzadermen-Gumelnitsa-Karanovo VI, Varna and Krivodol-Salcutsa-Bubani hum Ia.

During the II and III phases of the Late Chalcolithic the situation in Dobrogea became more stable but the tension continued in the neighboring regions between Varna and Kodzadermen-

Gumelnitsa-Karanovo VI cultures. Significant increase in the number and variety of potential combat weapons is visible in the Varna lakes area. The data from cemeteries suggest change in the social structure, related to increasing power and importance of warriors. A concentration of weapons has been also attested in some settlements and cemeteries of this period from the inland of Northeastern Bulgaria. The life in most of the tells in this region ended with burnt building levels. However, in some of them this happened still in the II phase of the Late Chalcolithic. Although the available data do not provide grounds for sure conclusions, the existence of local-scale conflicts in certain areas may be suggested.

The quantity and quality of the information available for the other regions of nowadays Bulgaria hamper detailed observations about the chronology of possible armed conflicts and the reasons for them. However, some general trends similar to the situation in Northeastern Bulgaria and the Black sea coast are visible: small number of weapons in the Early Chalcolithic and increase in the Middle and especially in the Late Chalcolithic; fortification of settlements; concentration of burnt building levels around the middle of the V millennium BC.

The observations made provide grounds to suggest that the transition between Early and Late Chalcolithic was related to armed conflicts, which more or less affected all cultural areas in nowadays Bulgaria and the neighboring regions. Probably they were result of different reasons: movement of people in some areas, increased settlements density, development of the trade with different valued materials and consecutively aspiration for control over their sources and trade routes, etc.

Armed conflicts have been surely attested in the very end of the Chalcolithic in Northeastern Bulgaria and Thrace. The evidences include not only the eloquent situations in tells Yunatsite, Ruse and Hotnitsa but also the burnt last building levels of most of the tells, which were inhabited until the III phase of the Late Chalcolithic. A number of researchers have stated that the end of the Chalcolithic cultures in the Balkans was caused by an invasion of nomadic tribes from the North Pontic steppes. However, the question whether the devastations attested in Northeastern Bulgaria and Thrace were inflicted only by this nomadic tribes or were also a result of "inner" movement of people caused by their pressure (or by other factors as well) cannot be surely answered so far. It should be noted that the skull traumas on the dead inhabitants of tell Yunatsite (and probably of tell Ruse as well) testify for the use of copper hammer-axes, which were not typical for this steppe region but rather for Northeastern Bulgaria and the Western Black sea coast. Anyway, it is obvious that the end of the Chalcolithic cultures in Bulgaria was more or less accompanied by armed conflicts, in which close combat weapons played an important role.

CONCLUSIONS

The analysis of the artifacts from the Chalcolithic in Bulgaria, which have been defined in the literature as weapons, shows that most of them were weapons indeed: stone mace-heads, hammer-axes and double axes of stone, copper and antler, stone double hammers, bone and flint arrowheads, flint and copper spearheads. This is confirmed by their specific morphological and metrical features, use-wear traces, and the finding context of some objects (especially in cemeteries). Some of them may be interpreted as specialized battle weapons: mace-heads, shaft-hole axes and double hammers. It is possible that the spears with copper and flint heads were also designed mainly for warfare. The hypothesis that the so-called "sling-shots" and "bone spearheads" were indeed used as weapons is questionable.

The tracing of the chronological development and territorial spread of the weapons shows both general trends (like appearance of most of them in the Early Chalcolithic and maximal spread and variety in the Late Chalcolithic) and territorial and cultural specifics in the spread of different types, subtypes and variants.

A concentration of weapons (as a whole or of certain kinds) in particular regions and periods has been also observed. Usually it coincides with other evidences of possible armed conflicts. The complex analysis of all these data provides grounds to trace out certain events during the Chalcolithic.