

Non-polished lithic artefacts from the Hamangia cemetery at Cernavodă – *Columbia D*. Technological, typological and contextual analysis

Raluca KOGĂLNICEANU^a, Loredana NIȚĂ^b, Constantin HAITĂ^c

^a "Vasile Pârvan" Institute of Archaeology, Bucharest; e-mail: raluca.kogalniceanu@gmail.com

^b "Valahia" University, Târgoviște; e-mail: loredana_nita2003@yahoo.com

^c National History Museum of Romania, Bucharest; e-mail: costel_haita@yahoo.com

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Abstract: The non-polished lithic artefacts from the Hamangia cemetery at Cernavodă – *Columbia D* belong to several technological groups, namely laminar blanks, flakes, cores, hammers and indeterminate fragments, all of them made of various types of chert and limestone. Most of the laminar blanks are represented by proximal and median fragments. Some of the intentionally modified ones are endscrapers, truncated blades, or marginally retouched blades. When available, their archaeological context (inside/outside of the grave, sex and age of the deceased, etc.) will be discussed.

Cuvinte-cheie: neolitic târziu, context funerar, tehnologie și tipologie litică, artefacte de chert și calcar

Rezumat: Piesele litice neșlefuite din necropola Hamangia, Cernavodă – *Columbia D* pot fi încadrate în câteva categorii tehnologice, mai exact suporturi laminare, așchii, nuclee, percutoare și fragmente indeterminabile, obținute din tipuri variate de chert și calcar. Majoritatea suporturilor laminare este formată din fragmente proximale și meziale. Unele dintre piesele retușate pot fi definite drept gratoare, troncaturi sau lame retușate marginal. În măsura în care informațiile disponibile o permit, contextul descoperirii pieselor (localizarea în cadrul necropolei, sexul/vârsta defuncților etc.) va fi, de asemenea, discutat.

INTRODUCTION

The Hamangia cemetery from Cernavodă – *Columbia D* (Fig. 1) was excavated in the 1960s. Its full publication has yet to wait, the only data published by the initial excavators of the site consisting of several annual excavation reports (Berciu, Morintz 1957; 1959; Berciu *et alii* 1959; 1961; Morintz *et alii* 1955) and other general information in volumes of synthesis (Berciu 1966; Hașotti 1997).

In spite of the discontinuous information and incomplete materials, we consider that the results obtained so far are significant enough to perform an analysis of these important discoveries. This paper is the sixth of a series of publications (Kogălniceanu 2012; 2014; Kogălniceanu, Haită 2015; Mărgărit 2012; Morintz, Kogălniceanu 2008) dedicated to bringing forward and analysing or re/analysing unpublished and published data from Cernavodă – *Columbia D*.

This study will discuss the non-polished lithic artefacts, which include hammers and chipped lithic artefacts.

Nothing has been published so far on this type of finds from the Cernavodă – *Columbia D* Hamangia cemetery. Both field notes and field drawings paid very little attention to this type of artefacts. They were briefly mentioned in the notes and rarely represented in the drawings, being obscured by the more prominent grave

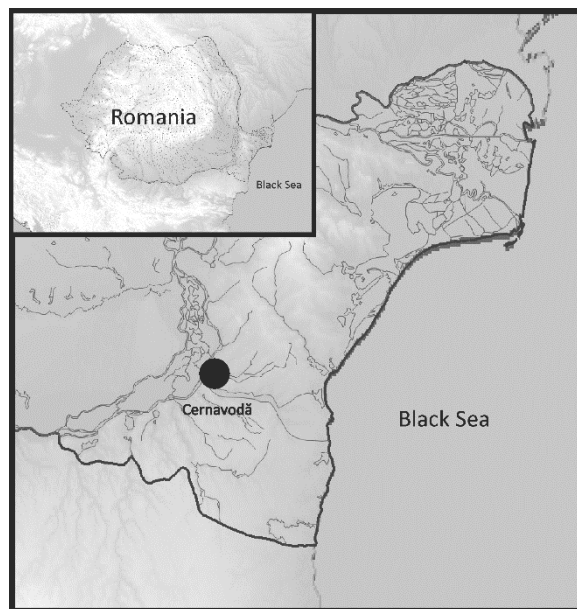


Figure 1. Map of Romania with the location of the Cernavodă cemetery.

goods such as pottery, animal bones, *Spondylus* adornments and polished stone tools. This oversight of the flint implements was also remarked by the Bulgarian researcher who analysed the Durankulak assemblage (Sirakov 2002, p. 214).

According to all consulted sources, such as field notes (Berciu 1954; 1955; Morintz 1954; 1954–1955; 1955; 1956), drawings, and artefacts, the non-polished lithic artefacts discovered within the cemetery amount to approximately 50 items, out of which 33¹ were available for the present analysis (Fig. 2, Annex).

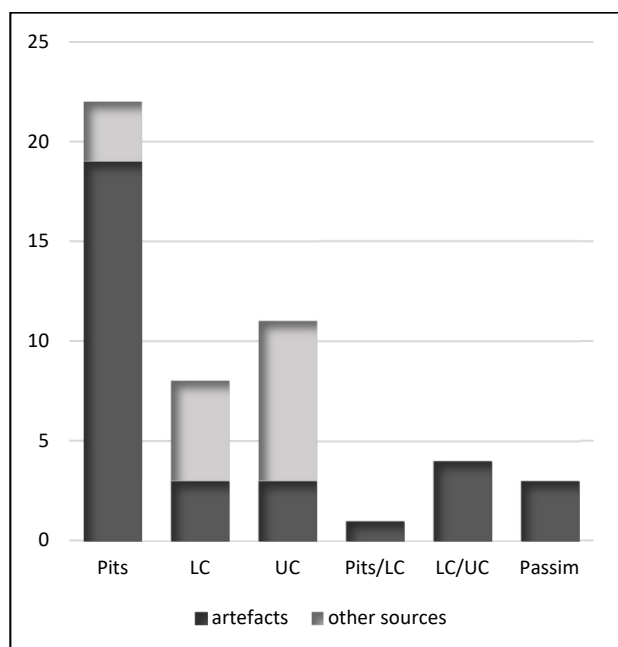


Figure 2. Distribution of non-polished lithic artefacts per cemetery areas, according to the source of information (Pits – Pits area, LC – Lower cemetery, UC – Upper cemetery, Pits/LC – interference area between the pits and the Lower cemetery, LC/UC – interference area between Lower and Upper cemeteries; for more details on the internal organisation of the site see Part II of this text).

PART I

TECHNOLOGICAL, TYPOLOGICAL AND PETROGRAPHICAL ANALYSIS

Technology

The studied assemblage (Fig. 3) has a clearly marked laminar component, defined by numerous proximal and median fragments of retouched and unretouched blades (Fig. 4). It comprises four major artefact categories: hammers (5),debitage by-products (10), blanks (9), and retouched items (9). Within thedebitage by-products category, we included indeterminable items (3), cortical products (2), cores and core fragments (4), while under “blanks”, we listed the unretouched flakes (3) and blades (7). The retouched items recovered are either marginally or distally modified blades.

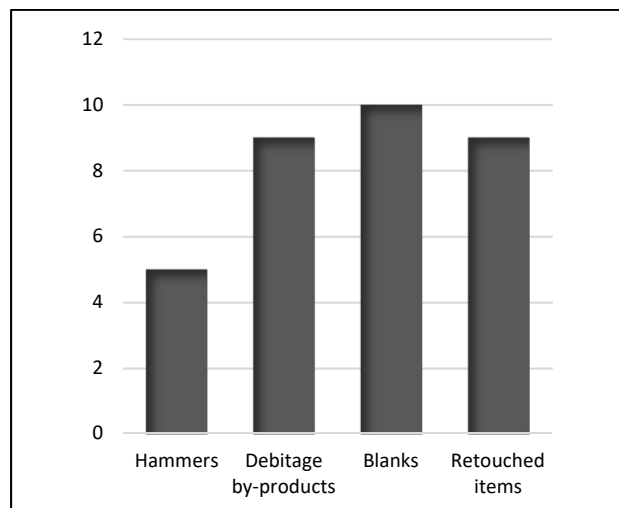


Figure 3. Artefact assemblage structure.

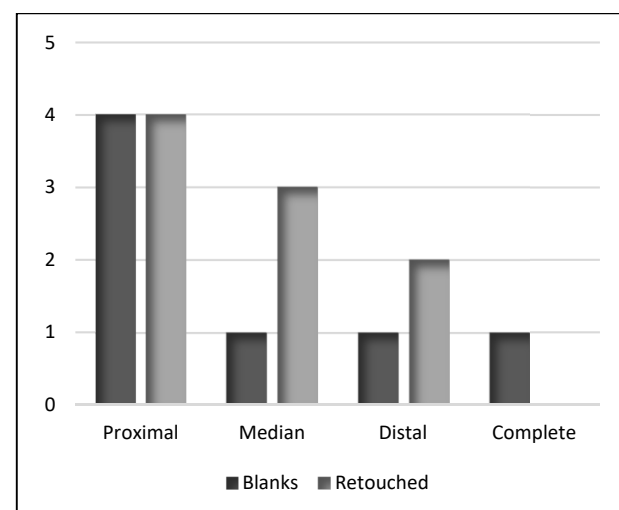


Figure 4. Retouched and unretouched blade fragments.

The four cores and core fragments found in the cemetery (Fig. 5) are almost exhausted specimens, of relatively small sizes, showing scars of short blades and flakes as the last performed removals and, in one case, a cortical surface of significant extent; the last stages of the reduction sequence used one main striking platform and all thedebitage surfaces available.

Flakes are represented by several proximal and distal fragments, among which there are two with residual cortical areas, and one with a dorsal glossy patch. Besides cores, flakes and indeterminable items, a little more than half of the studied sample includes also several hammer stones (Fig. 6), with small grooves covering their surface. Other than their use as hammers in the lithic production, the quasi-spherical implements might have been also used as sling projectiles, given the extent of the pit-covered surfaces.

¹ All artefacts are part of the collection in custody of the “Vasile Pârvan” Institute of Archaeology, Bucharest.

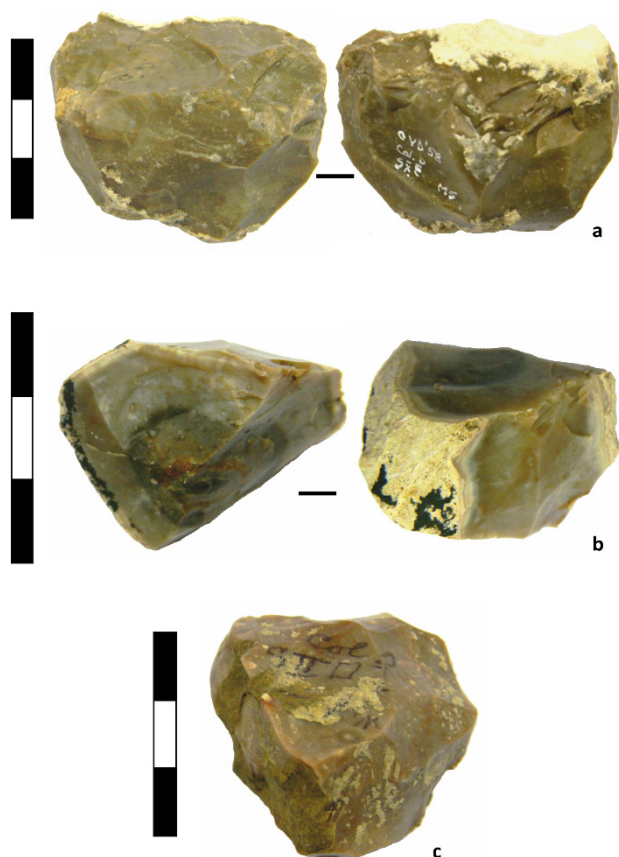


Figure 5. Flint cores (F 167, F 332, F 178).

The laminar blanks, both the retouched and the unretouched, exhibit signs of hard hammer percussion on the ventral side of the flat-butt proximal specimens (this is also the case for some of the flakes in the collection). The largely concave, trapezoidal blades originated from the main stage of the reduction sequence, namely from the unipolar exploitation of large/long convex debitage surfaces; the blanks are roughly 20–25 mm in breadth with various length values, due to fragmentation – the longest proximal fragment is 112 mm, while the only complete specimen is only 73 mm long.

Typology

There are not many typological categories to describe, among which the marginally, continuously or partially retouched blades prevail. All the retouched blades are proximal and median fragments. Apart from the lateral, direct retouch, some proximal and median fragments which could be described as unfinished truncations, exhibit a retouched surface placed on a former transverse fracture. The collection includes also two distal endscrapers, one of which shows direct retouches on the proximal third of the long edges, probably in order to facilitate hafting.

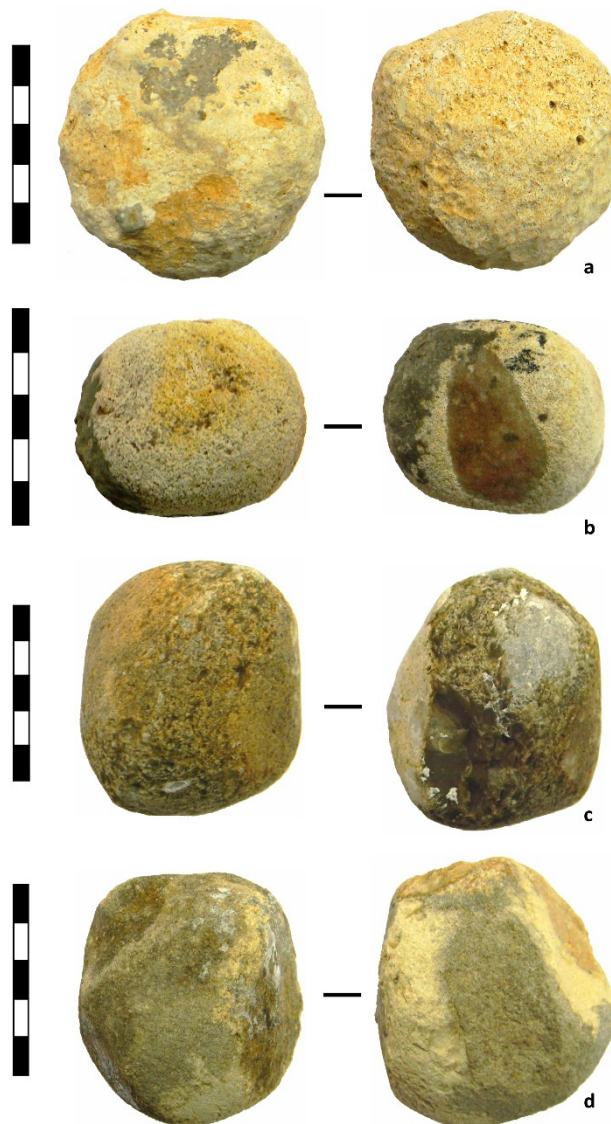


Fig. 6. Hammers (F 310, F 309, F 348, F 317).

Petrography

The studied lithic inventory was made of limestones and silicolites.

Limestones are represented by two varieties: the first one is fine crystalline, yellowish, homogeneous, compact, fine porous, with small (mm size) whitish inclusions. The second one is a fine gritty limestone, homogeneous, compact, light grey and reddish, burned, with a calcium carbonate crust.

The silicolites were described according to their macroscopic features: texture, homogeneity, colour, structure and impurities. Under this term, we included all the different forms of primary siliceous deposits (concretions of chert but also flint types, and layered deposits or intercalations) or gravels in secondary deposits.

The varieties of silicolites were established on the same basis as for the petrographic study performed using optical microscopy of the lithic chipped material found at

two Chalcolithic sites, Hârșova – *tell* and Bordușani – *Popină*; the raw material from these two settlements is very similar to the lithic assemblage presented here, in terms of their macroscopic features. Most of the pieces have cortex areas, including transition to limestone, the initial rock where the silicolites were formed. Also, the carbonate impurities, of different dimensions and irregular outlines, are part of this transition areas, being relics, non-silicified material, from the native rock. The silicolites present three types of texture, from fine to medium and coarse, according to the classification of fine sedimentary rocks (silt and sand on the Udden-Wentorth grainsize scale). The colour varies from yellowish, light to dark ochre and greyish ochre to yellowish brown, medium brown and reddish brown.

The varieties encountered in the non-polished lithic assemblage from Cernavodă can be summarised as follows:

The **Ah** type – fine and homogeneous. It has a fine or very fine texture (few, if any, individual fine inclusions, <1 mm), and it is homogeneous (very few whitish fine impurities) or very homogenous and compact (Fig. 7/a). It presents various colours: light ochre, medium ochre, light greyish ochre, medium brown, or medium reddish brown. It may, in some cases, include rare and fine, millimetric carbonate impurities, cortex areas and banded structure with longitudinal stripes with diffuse limits (Fig. 7/b). In four situations, it presents areas with frequent ferruginous reddish impregnations.

The **An** type – fine and non-homogeneous. It is a silicolite with fine or very fine texture, but heterogeneous, compact, with greyish reddish brown or medium ochre colour. It includes frequent whitish millimetric/centimetric impurities, reddish and black when burned, with a cortex area in one case.



Figure 7. Silicolite types. a) The fine textured and homogeneous type (Ao), blade (F 62); b) Banded structure with diffuse limit, fine homogeneous chert (F 63); c) The medium textured homogeneous type (Bo), splinter (F 312); d) The coarse textured heterogeneous type (C), blade fragment (F 342).

The **Ac** type – fine with concentric structure. It is represented by a fragment of fine textured silicolite concretion, homogeneous, compact, with concentric structure, with yellow-greyish ochre, medium brown and reddish-brown colours, with cortex.

The **Bh** type – medium textured and homogeneous. It is a silicolite with frequent inclusions (“grains”), less than 1 mm, homogeneous, compact. It has light greyish ochre, medium ochre or dark brown colour, with no or rare impurities, and areas of cortex in three cases (Fig. 7/c).

The **Bn** type – medium textured and non-homogeneous. It is a silicolite with frequent inclusions, heterogeneous and compact. It has yellowish, light ochre or medium ochre colour, with reddish-brown areas, frequent impurities, reddish ferruginous zones, and with cortex in one case.

The **C** type – coarse textured type. It is a silicolite with frequent inclusions (up to 2 mm), very heterogeneous, compact, with medium ochre colour, frequent impurities of different sizes and cortex (Fig. 7/d).

Of the 33 items found in the cemetery at Cernavodă – *Columbia D*, five are hammers and 28 items belong to the chipped assemblage.

Two hammers are made of limestone, and the other three are made of silicolite with fine, homogeneous, compact texture (type Ah), yellowish, light to medium ochre or medium brown, without impurities, with transition areas to limestone and cortex areas in two cases.

The chipped lithic material found in the cemetery was made of all six types of silicolites (Fig. 8). The relative domination of the first type of silicolite could be considered as a normal consequence of the fact that the texture and homogeneity make this material the most appropriate for achieving good chipped pieces.

The optical microscopy of the material from Bordușani – *Popină* indicated that the texture, from very fine to medium and coarse, is the result of the mass crystallinity, formed of opal and microquartz, and of the frequency of the bioclastic inclusions – sponge spicules, echinid radioles, foraminifera skeletons or other bioclasts, replaced by chalcedony (Haită, Tomescu 1997, p. 133).

All these characteristics (including the presence of cortex and of the transition areas with limestone) indicate that these silicolites can be attributed to the *chert* (*chaille*) type, representing diagenetic concretionary formations on calcareous rocks.

These rocks occur on large areas in central Dobroudja, in Upper Jurassic deposits, and also in

southern Dobroudja in Cretaceous deposits (Chiriac 1968; Haită 2011, p. 86–87; Haită, Tomescu 1997, p. 134). The cherts observed in outcrops near Hârșova and Ghindărești present a very large variability in terms of their colour, texture and microstructure (including the concentric or banded type).

The possible source areas for the lithic inventory found at Cernavodă can be represented by Cretaceous deposits occurring in the vicinity of the site. Jurassic deposits occur also on the right bank of the Danube, at distances between 15 and 25 km, in the proximity of Capidava and Topalu.

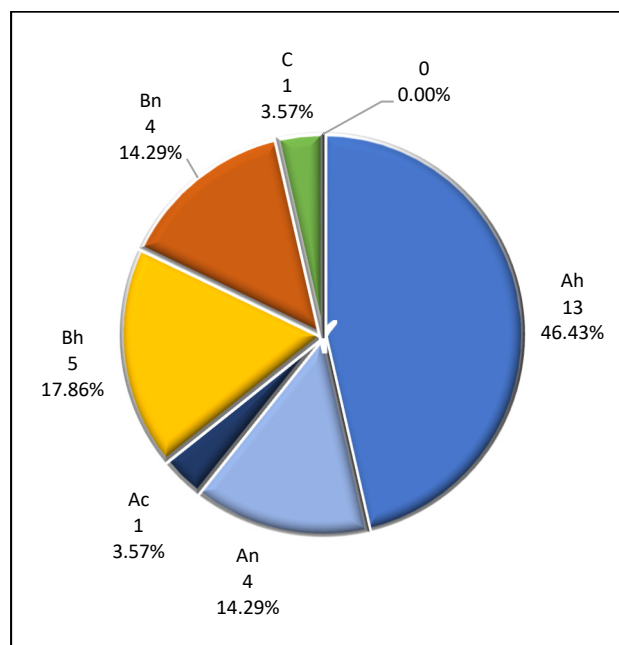


Figure 8. The frequency diagram of the different types of raw material for the chipped inventory from Cernavodă – *Columbia D*.

Use-wear

Several items (F 57, F 277, F 341) exhibit macroscopic traces of use-wear. Apart from the fractures and the irregular flaking of the long edges, frequently affecting the unretouched blades, the three retouched specimens also show gloss traces, probably due to prolonged contact with vegetable silica and/or organic (leather) bindings, used in hafting (Figs. 9 and 10). The gloss marks are usually overlapping previously modified surfaces, either through intentional retouching, or through accidental flaking of the long edges.

Two items (a hammer – F 309 and an indeterminate fragment – F 318) were burned. It is impossible to say whether their firing occurred before or after their deposition in the cemetery.

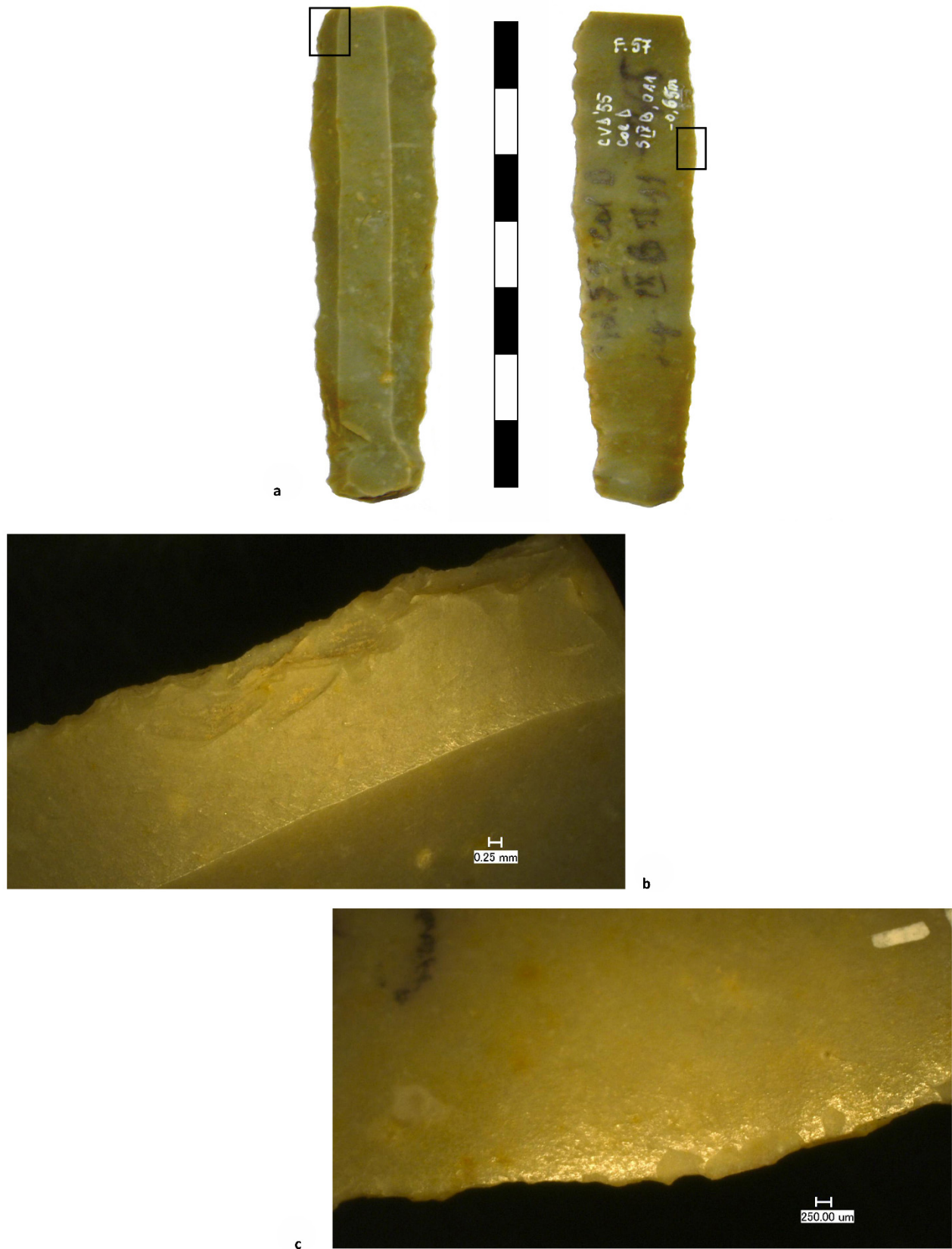


Figure 9. Retouched proximal blade: a. dorsal and ventral view; b. direct retouch, overlapped by crushing marks (20x); c. ventral marginal gloss (30x).

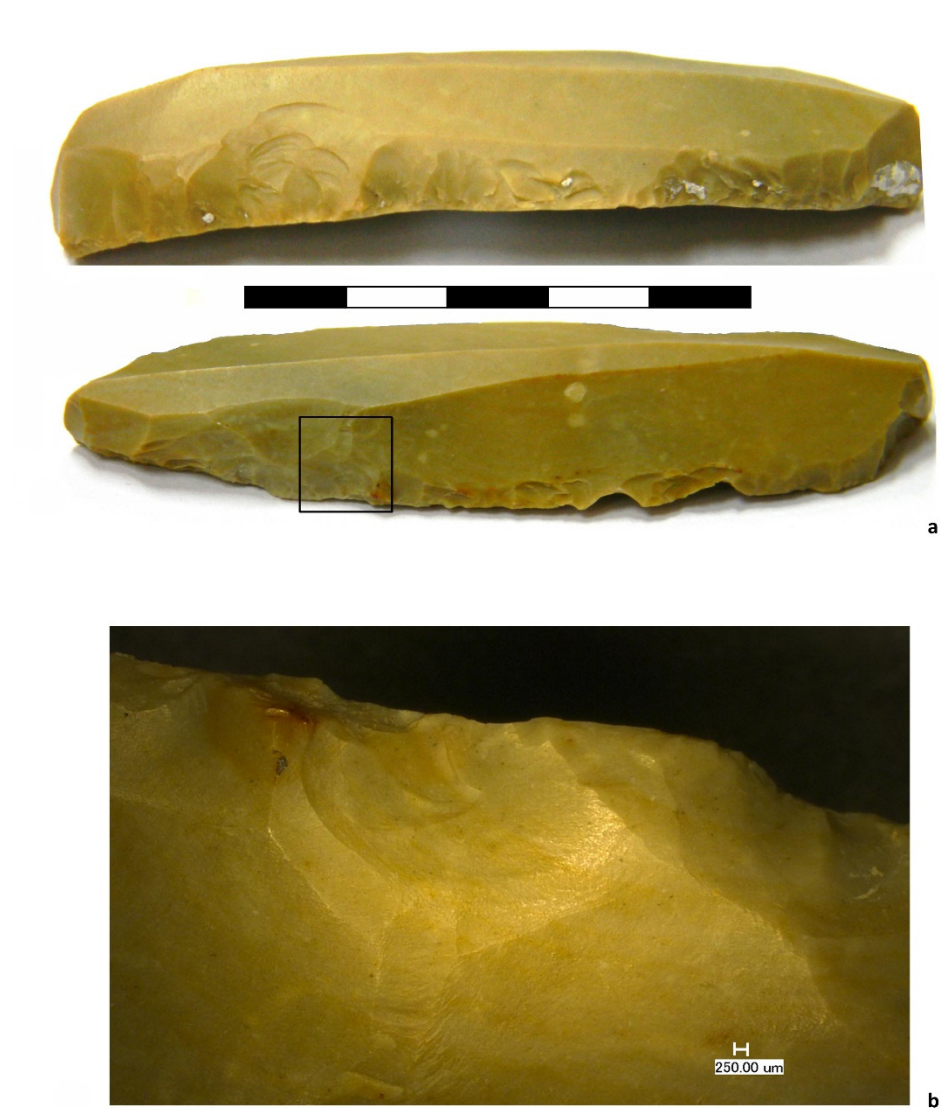


Figure 10. Endscraper: a. right and left sides; b. partially developed gloss on lateral retouched surface (20x).

PART II CONTEXTUALIZATION OF ITEMS

The cemetery of Cernavodă – *Columbia D* had been divided, based on certain differentiating characteristics, into two main parts: the Upper cemetery and the Lower cemetery. North of these, two ravines had also been identified, in which the finds had the aspect of both ritual depositions and garbage disposals (Pits no. 1 and 2). Other materials were also excavated in the north-western extremity of the site, named on the labels of various artefacts 'the collapsed area' (for more details concerning the internal organization of the site see the excavation reports, and mainly Morintz *et alii* 1955).

Some differences between the various parts of the cemetery were noted by the initial researchers and we followed this issue in every recent publication of various artefacts (adornments and polished stone tools). The initial observation that some differences existed, more or less pronounced, was confirmed with every thorough analysis. So far, we did not try to ascribe these differences to either a chronological or social factor and we are not doing it here either.

The location of the items inside the cemetery (Figs. 11 and 12)

At this point, there is only a slight indication of differences in the non-polished lithic presence among the various parts of the site. The bulk of the items was recovered from the pits area (22 pieces – approximately half of the total); most of them appear to aggregate on the south-eastern limit of Pit no. 2. The only two burned pieces (F 309 and F 318) came from this area.

Fewer pieces (considering the area size) were found in the Lower or Upper cemetery; for most of them we have information only from other sources, such as field notes and field drawings.

Keeping in mind that some artefacts could not be analysed directly (approximately one third of them, mainly from the Upper cemetery), based on those that could be analysed we noticed zonal characteristics. All types are represented in the pits area, but this is not necessarily something unexpected since this is the area where almost half of the items were found. Hammers and blanks seem to be found only in the pits area and in the immediate vicinity (the Lower cemetery). The Upper cemetery and its immediate vicinity seem to be characterized by retouched items.

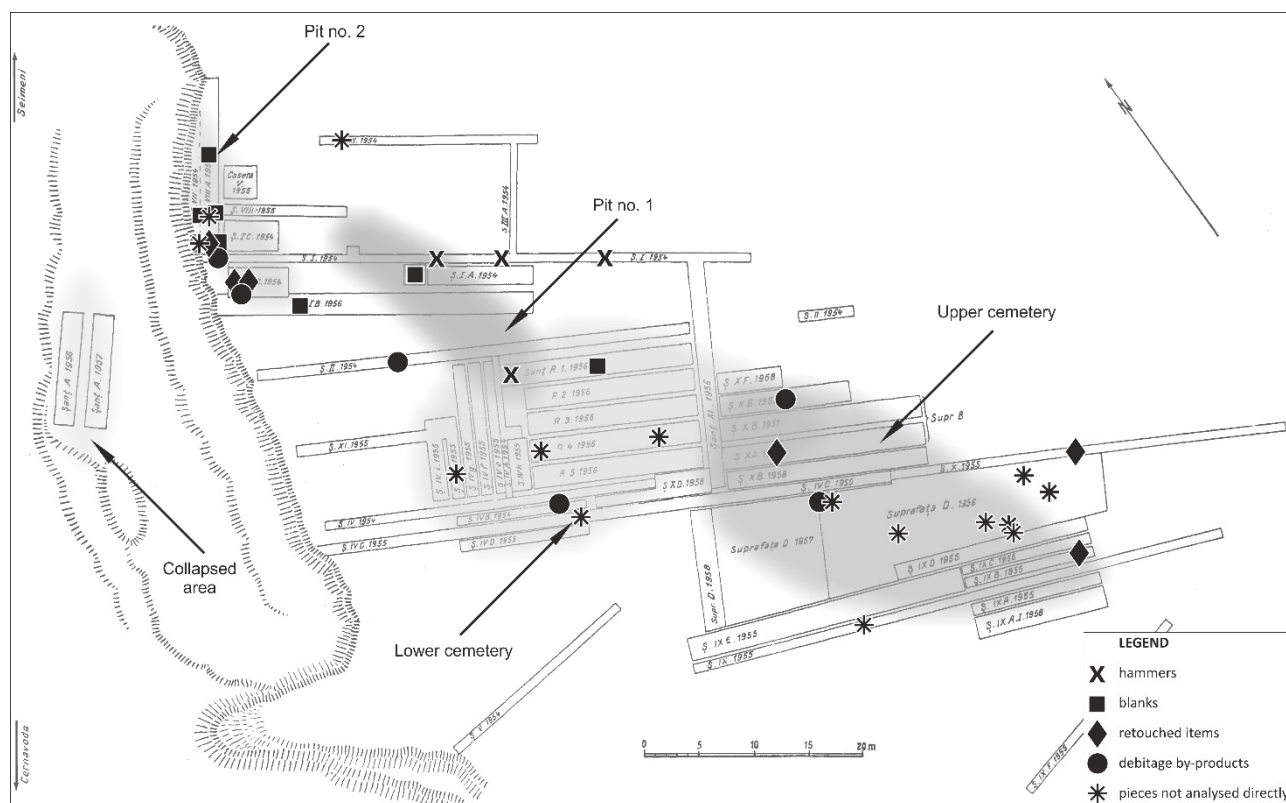


Figure 11. Distribution of non-polished lithic artefacts per cemetery areas.

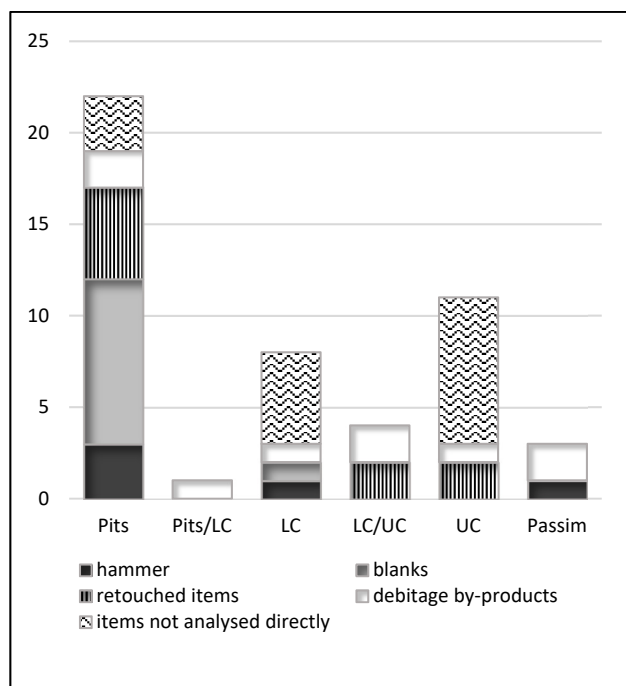


Figure 12. Distribution of non-polished lithic artefacts per cemetery areas.

In terms of raw material used per cemetery area (Tables 1 and 2), the situation is again skewed by the fact that the items that could be analysed directly come mostly from the pits area, while those from the Lower and Upper cemeteries we know of mostly from secondary sources (field notes and plans).

Material	Pits	LC	Passim	TOTAL
Limestone	2	-	-	2
Silicolite Ah	1	1	1	3
TOTAL	3	1	1	5

Table 1. The distribution and type of materials for the hammers from Cernavodă – Columbia D.

Material		Pits	Pits / LC	LC	LC/U C	UC	Passim	TOTAL
Silicolite	Ah	7	1		2	2	1	13
	An	2			1	1		4
	Ac				1			1
	Bh	3		2				5
	Bn	3					1	4
	C	1						1
TOTAL		16	1	2	4	3	2	28

Table 2. The distribution and type of materials for the chipped lithic artefacts from Cernavodă – Columbia D.

The position of the items in relation to the anatomical elements of the skeleton

Most of the non-polished lithic artefacts recovered from Cernavodă – Columbia D cemetery appear to have been found mainly in the archaeological layer, outside of sealed features (32 out of 50 cases – see Annex 2).

The few available correlations between the non-polished lithic pieces and the human remains concern mostly the disarticulated bones, possibly as a result of either stratigraphic disturbances or specific ways of dealing with the dead. In some cases, mentioned within the field notes, a correlation with the head area was indirectly suggested, but this association could not be verified in the cases illustrated in the field plans (Figs. 13–18).

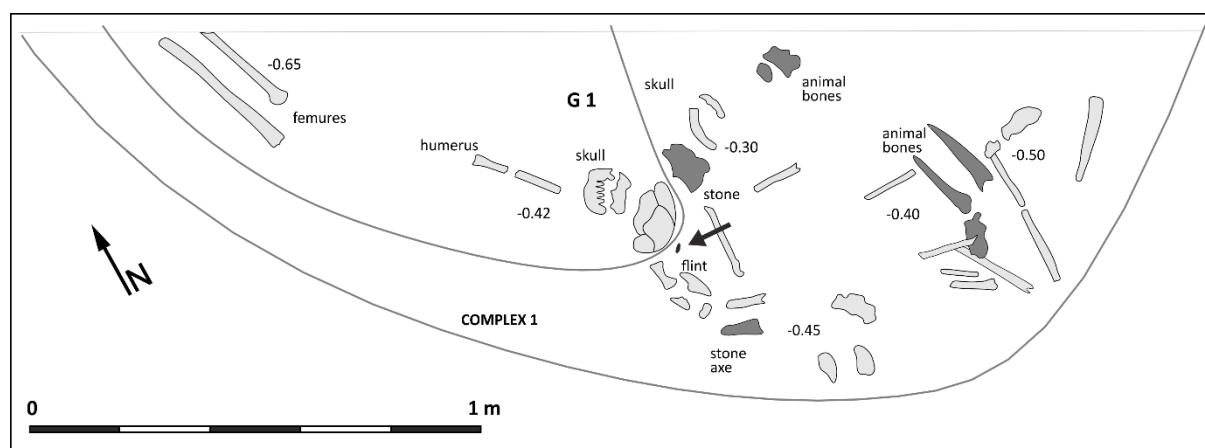


Figure 13. Trench R4, sq. 1.

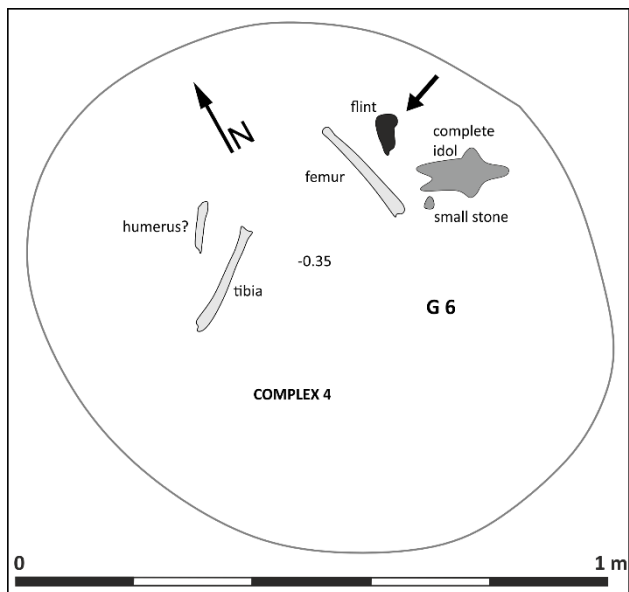


Figure 14. Trench R4, sq. 7.

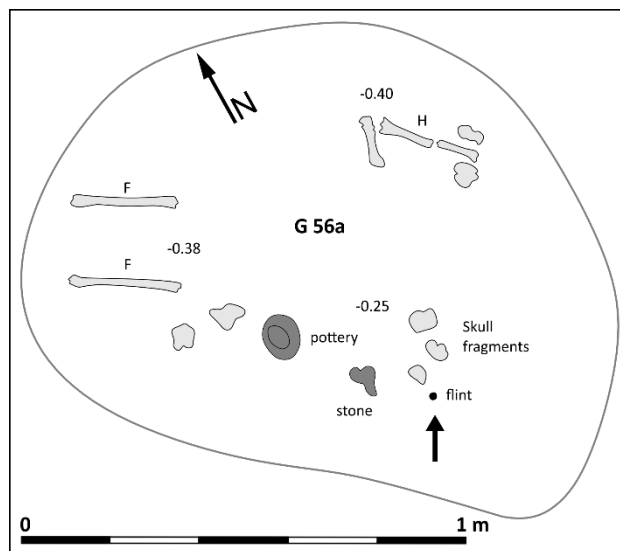


Figure 15. Surface D, sq. 3h.

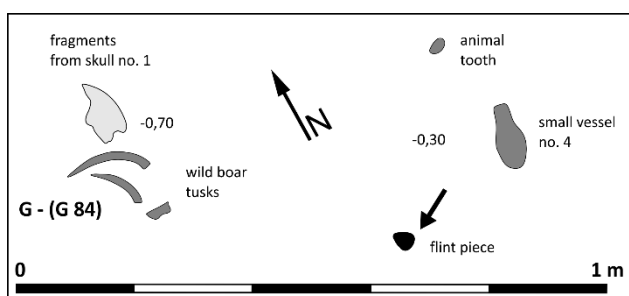


Figure 16. Surface D, sq. 1a.

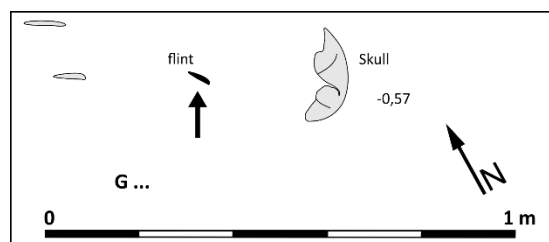


Figure 17. Surface D, sq. 1j.

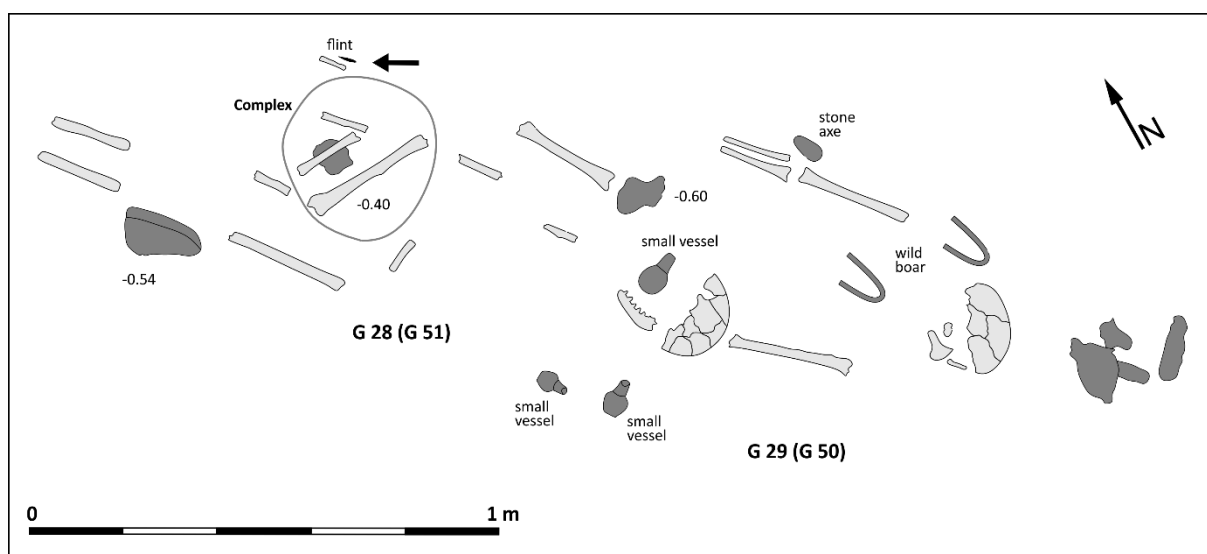


Figure 18. Surface D, sq. 3i.

Sex and age of the deceased (see Annex)

There are not many examples of clear associations between flint tools and individuals; when discernible, such cases involve almost exclusively mature individuals, males and females, and one 8–9 years old child². The selected non-polished items (hammer, core fragment, flake, cortical flake, retouched and unretouched blades) fail in individualizing a certain technological or typological category, thus offering no clues for a possible gender or social status differentiation, based on the toolkit.

Association of the items with other types of grave goods (see Annex)

Given the fact that non-polished lithic artefacts were usually found outside the features, it is very difficult to talk about their association with other artefacts as, apparently, they are rarely directly associated with any.

As for the 18 cases of sealed features, we could notice that the non-polished lithic items were almost exclusively associated with pottery, animal bones, polished stone tools and stones. In only one case from the Lower cemetery a clay figurine was part of the association. The non-polished items appear to have never been associated with adornments of any kind (marine shell, marble or stone) or bone implements.

ANALOGIES

Cernavodă – Columbia C settlement

The closest assemblage of similar artefacts, and one of the most relevant for the present study is the small group of non-polished lithic artefacts from the nearby Hamangia settlement excavated at Cernavodă – Columbia C.

The types of raw material for the two hammers from the settlement reflect the same mode of obtaining these tools as for those from the cemetery. One of them is made of fine limestone, light grey and yellow, homogeneous, compact, burnt, with reddish and blackish areas and frequent fine impressions of shells, and the other is made of silicolite of the Ah type, with fine texture, homogeneous, compact, yellowish brown, without impurities, with a cortex area.

The chipped lithic material found in the settlement was assigned to the same six types of silicolites encountered in the cemetery. The frequency diagram shows in this case a more balanced distribution of the different types of silicolites (Fig. 19).

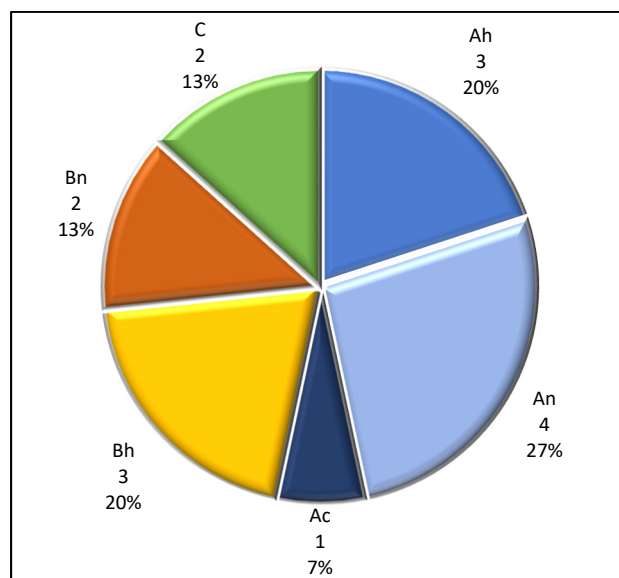


Figure 19. The frequency diagram of the different types of raw material for the chipped inventory from Cernavodă – Columbia C.

The distribution of the raw material types used for the non-polished lithic artefacts discovered in the two main areas of the Cernavodă site (*Columbia D* – cemetery and *Columbia C* – settlement), shows a very similar picture. All the identified types of silicolites were used in both cases, except for the limestone present accidentally as a small splinter in the necropolis. The reduced number of pieces, especially in the case of the settlement, does not allow us to perform a more detailed comparison.

Although the flint pieces recovered from the settlement area at Cernavodă amount to only half of the flint items discovered in the funeral contexts, their technological grouping is equally diverse: hammers, fragmented cores, chert laminar blanks, and retouched blades. Unlike the cemetery area, the settlement discoveries comprised bladelets among the unretouched laminar blanks; also, the number of flakes (cortical items included) slightly increased. Curiously, the settlement area offered only two marginally retouched blades and no endscrapers or truncations.

The Durankulak cemetery

The Hamangia necropolis at Cernavodă shares some important features with the larger and chronologically more durable necropolis in Durankulak (Bulgaria), subjected to extensive research and specialized analyses (Boyadziev 2008; Gurova 2002; 2006; 2013; Sirakov 2002).

The number and proportion of the non-polished lithic artefacts recovered from Durankulak (84 items from 56 Hamangia I-III graves, including cenotaphs, out of the approximately 600 graves from the period of interest – Todorova 2002, vol. 2, p. 31–87) is slightly larger than the

² For this association, we used the manuscript of the anthropological analysis performed in the past (Necrasov *et alii* 1981).

number and proportion of similar artefacts from Cernavodă – *Columbia D*, but the discrepancy between the two sites is not as big as in the case of the polished stone tools (Kogălniceanu, Haită 2015). Among other noted similarities, one could mention the use of a quasi-local raw material, largely consisting of dark yellow/grey/brown, fine grained flint and the preference for laminar blanks as funeral inventory. It is also worth mentioning that use-wear traces were identified on almost half of the analysed items from Durankulak (on 25 out of 64 items – Gurova 2006, p. 4). Even though the use-wear analysis was differently conducted for the two sites, mainly due to the available technology, the results show a similarity of the funerary behaviour in that both Hamangia communities deposited in graves previously used tools.

The differences reside mainly in the debitage techniques and the choice of the non-polished lithic inventory to use as grave goods. Pressure technique and indirect percussion were used for obtaining the blades in Durankulak, while hard hammer direct percussion was used for the same type of blanks in Cernavodă. As for the choice of non-polished lithic items, some of the Durankulak graves are individualized by the presence of geometric microliths, which are absent from Cernavodă, as are the bladelets. On the other hand, hammers, cores and rejuvenation/cortical products are absent from the graves in Durankulak, but they appear, albeit in small number, at Cernavodă.

The number of silicite items per grave varies between one and eight at Durankulak, a feature not encountered at Cernavodă, where a maximum of two silicite artefacts were recorded within the same context. These items seem to have been equally placed in adult male and female graves, and in quite several cases in those of children³ (Todorova 2002, vol. 2, p. 31–87).

One important feature of the Durankulak assemblage is the presence of the geometric microliths, interpreted as Vielle arrow points, encountered almost exclusively in the adult male graves (Gurova 2006, p. 5; Todorova 2002, vol. 2, p. 31–87). One isolated occurrence seems to be a partial sewing kit (flint blade plus bone awl), that becomes more frequent in the following period, usually comprising a jar, a flint artefact, a pebble polisher, a bone awl and a shell (Gurova 2006; Todorova 2002, vol. 2, p. 31–87, Grave 598; but see also Gurova 2013, p. 390–391 for a revised opinion on the subject of ‘sewing kits’). Such kits have not been so far identified at Cernavodă, but the materials from the cemetery are still under study.

For the flint assemblage discovered at Durankulak we could notice no special preference of positioning these

artefacts in relation to a particular anatomical element of the skeleton, but an overwhelming preference for the left side of the body was noted (Todorova 2002, vol. 2, p. 31–87).

FINAL REMARKS

The analysis of the non-polished lithic artefacts from the Hamangia cemetery at Cernavodă – *Columbia D* adds one more chapter to the reappraisal of the discoveries made over half a century ago. Less spectacular than other grave goods, they appear to have been overlooked. There is little information about them in the field notes and plans and none in the publications. This left quite a number of empty spaces in our analysis. Nonetheless, some important observations could be made.

Previous attempts at characterizing Hamangia non-polished lithic occurrences in the eastern Romania sites (Hașotti 1983; Voinea, Dobrinescu 2002–2003; Voinea, Neagu 2008) emphasized, among others, a certain microlithic character of the assemblages, presumably mirroring a Mesolithic influence (thin laminar blanks, bladelet cores, geometric microliths, short, rounded endscrapers, truncated bladelets and Vielle arrow points). So far, regardless of the context (either cemetery, or settlement), the Cernavodă collection provides no technological or typological arguments in favour of such claims.

The presence of hammers, cores and rejuvenation/cortical products at Cernavodă is unusual for a funerary context and needs further investigation.

It could be noted that some of the items from Cernavodă had been used previous to their deposition in the cemetery. Their normal life span was interrupted and they were given a symbolic value and a different trajectory. The small number of such occurrences at Cernavodă compared to the observations made on the assemblage from Durankulak might be due to our lack of access to equipment better suited for such observations.

The artefacts discussed here do not seem to be gendered goods, with the exception of the geometric microliths, encountered only at Durankulak, and almost exclusively in the graves of male individuals.

The preference for placing the non-polished artefacts on the left side of the body observed at Durankulak, was not observed at Cernavodă, mainly due to the perturbed state of the cemetery.

So far, the only spatial characteristic noticed at Cernavodă seems to be the much larger number of items recovered from the pits area when compared to any other

³ The same as in the previous publications, for the correlation with the sex and the age of the deceased we used the anthropological determination (also indicated in the catalogue of the graves: Todorova 2002, vol. 2, p. 31–87), and not the archaeological one, as most Bulgarian authors did. We continue to consider the archaeological attribution of sex and age profoundly biased and without a scientific

basis, and we will continue to use the anthropological determination in spite of any shortcomings it may present. This, together with some inconsistencies observed throughout the monographic publication of the Durankulak cemetery, can explain the slight difference in numbers and in various assertions compared to the Bulgarian publications (Gurova 2006; Sirakov 2002; Todorova 2002).

part of the cemetery, covering the entire spectrum recorded for all the cemetery. The apparent pattern of having hammers in the Lower cemetery *versus* retouched items in the Upper cemetery is thin; too many items from these areas are known of only from secondary sources.

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REFERENCES

- Berciu 1954 – D. Berciu, *Cernavodă III 1954. Field notes*, Archive of “Vasile Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C1. Nr. 730 (1120)”, mss.
- Berciu 1955 – D. Berciu, *Cernavodă II 1955. Field notes*, Archive of “Vasile Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C5. Nr. 734 (1124)”, mss.
- Berciu 1966 – D. Berciu, *Cultura Hamangia. Noi contribuții. I*, București, 1966.
- Berciu, Morintz 1957 – D. Berciu, S. Morintz, *Șantierul arheologic Cernavodă (reg. Constanța, r. Medgidia)*, MCA 3, 1957, p. 83–92.
- Berciu, Morintz 1959 – D. Berciu, S. Morintz, *Săpăturile de la Cernavodă (reg. Constanța, r. Medgidia)*, MCA 5, 1959, p. 99–106.
- Berciu et alii 1959 – D. Berciu, S. Morintz, P. Roman, *Săpăturile de la Cernavodă (reg. Constanța, r. Medgidia)*, MCA 6, 1959, p. 95–105.
- Berciu et alii 1961 – D. Berciu, S. Morintz, M. Ionescu, P. Roman, *Șantierul arheologic Cernavodă*, MCA 7, 1961, p. 49–55.
- Boyadziev 2008 – Y. Boyadziev, *Changes of the burial rites within the transition from Hamangia to Varna culture*, in: V. Slavcev (ed.), *The Varna Eneolithic Necropolis and Problems of Prehistory in Southeast Europe*, Acta Musei Varnaensis 6, Varna, 2008, p. 85–94.
- Chiriac 1968 – M. Chiriac, *Harta geologică, scara 1:200.000, Foaia Constanța, Notă explicativă*, Comitetul de Stat al Geologiei, Institutul Geologic, București, 44 p.
- Gurova 2002 – M. Gurova, *Mobilier en silex de la nécropole Durankulak – analyse fonctionnelle*, in: H. Todorova (ed.), *Durankulak, Band II. Die Prähistorischen Gräberfelder*, Sofia, 2002, p. 247–256.
- Gurova 2006 – M. Gurova, *Prehistoric flint as grave goods/hoards: functional connotations*, Archaeologia Bulgarica 10, 2006, 1, p. 1–14.
- Gurova 2013 – M. Gurova, *Towards the meaning of flint grave goods: a case study from Bulgaria*, in: A. Comşa, C. Bonsall, L. Nikolova (eds.), *Facets of the past. The challenge of the Balkan Neo-Eneolithic*, Bucharest, 2013, p. 375–393.
- Haită 2011 – C. Haită, *Esquisse géographique et géologique de la Dobroudja. Les zones sources pour le matériel lithique*, in: L. Carozza, C. Bem, C. Micu (eds.), *Société et environnement dans la zone du bas Danube durant le 5ème millénaire avant notre ère*, Iași, 2011, p. 79–88.
- Haită, Tomescu 1997 – C. Haită, M. Tomescu, *Lithic resources*, in: S. Marinescu-Bîlcu et alii, *Archaeological researches at Bordușani Popină (Ialomița county). Preliminary report 1993-1994*, CA 10, 1997, p. 132–136.
- Hașotti 1983 – P. Hașotti, *Observații privind uneltele din silex aparținând culturii Hamangia*, Pontica 16, 1983, p. 29–42.
- Hașotti 1997 – P. Hașotti, *Epoca neolitică în Dobrogea*, Bibliotheca Tomitana I, Constanța, 1997.
- Kogălniceanu 2012 – R. Kogălniceanu, *Adornments from the Hamangia cemetery excavated at Cernavodă – Columbia D. Contextual analysis*, in: R. Kogălniceanu, R.-G. Curcă, M. Gligor, S. Stratton (eds.), *Homines, Funera, Astra. Proceedings of the International Symposium on Funerary Anthropology, 5-8 June 2011, “1 Decembrie 1918” University (Alba Iulia, Romania)*, BARIntSer 2410, Oxford, 2012, p. 81–96.
- Kogălniceanu 2014 – “Over His/Her Dead Body”: Modes of Treating the Human Body at the Hamangia Cemetery from Cernavodă, in: M. Gligor (ed.), *Archaeoethnology: An Interdisciplinary Approach on Death from Prehistory to the Middle Ages*, Annales Universitatis Apulensis. Series Historica, 18/II, Cluj, 2014, p. 47–60.
- Kogălniceanu, Haită 2015 – R. Kogălniceanu, C. Haită, *Polished stone tools as grave goods in the Hamangia Cemetery from Cernavodă – Columbia D. Typological and contextual analysis*, in: R. Kogălniceanu, R.-G. Curcă, M. Gligor, S. Stratton (eds.), *Homines, Funera, Astra 2. Life beyond death in ancient times (Romanian case studies). Proceedings of the International Symposium on Funerary Anthropology, 23-26 September 2012, “1 Decembrie 1918” University (Alba Iulia, Romania)*, Oxford, 2015, p. 43–66.
- Mărgărit 2012 – M. Mărgărit, *Shell adornments from the Hamangia cemetery excavated at Cernavodă – Columbia D. Techno-typological analysis*, in: R. Kogălniceanu, R.-G. Curcă, M. Gligor, S. Stratton (eds.), *Homines, Funera, Astra. Proceedings of the International Symposium on Funerary Anthropology, 5-8 June 2011, “1 Decembrie 1918” University (Alba Iulia, Romania)*, BARIntSer 2410, Oxford, 2012, p. 97–106.
- Morintz 1954 – S. Morintz, *Cernavodă I 1954. Field notes*, Archive of “Vasile Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C2. Nr. 731 (1121)”, mss.
- Morintz 1954–1955 – S. Morintz, *Cernavodă II 1954–1955. Field notes*, Archive of “V. Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C3. Nr. 732 (1122)”, mss.
- Morintz 1955 – S. Morintz, *Cernavodă III 1955. Field notes*, Archive of “Vasile Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C4. Nr. 733 (1123)”, mss.
- Morintz 1956 – S. Morintz, *Cernavodă IV 1956. Field notes*, Archive of “Vasile Pârvan” Institute of Archaeology, Bucharest, Berciu Fund, inv. no. “C6. Nr. 745 (1135)”, mss.
- Morintz et alii 1955 – S. Morintz, D. Berciu, P. Diaconu, *Șantierul arheologic Cernavodă*, SCIV 6, 1–2, 1955, p. 151–163.
- Morintz, Kogălniceanu 2008 – A. Morintz, R. Kogălniceanu, *A first step towards the spatial analysis of the Hamangia (neolithic) necropolis from Cernavodă, Romania*, Origini 30, Nuova Serie 4, 2008, p. 165–186.
- Necrasov et alii 1981 – Colectivul Centrului de Cercetări Biologice Iași, *Studii paleoantropologice care obiectivează continuitatea populațiilor umane autohtone pe teritoriul patriei noastre și principalele etape de constituire a poporului român*, Contract no. 134, 1981, ms.
- Sirakov 2002 – N. Sirakov, *Flint artifacts in prehistoric grave-good assemblages from the Durankulak necropolis*, in: H. Todorova (ed.), *Durankulak, Band II. Die Prähistorischen Gräberfelder*, Sofia, 2002, p. 213–246.
- Voinea, Dobrinescu 2002–2003 – V. Voinea, C. Dobrinescu, *Așezarea Hamangia III de la Cheia. Campaniile 2002–2003 (raport preliminar)*, Pontica 35–36, 2002–2003, p. 9–23.
- Voinea, Neagu 2008 – V. Voinea, G. Neagu, *Archaeological research at Hamangia III settlement from Cheia (2004–2008)*, Pontica 41, 2008, p. 9–34.

ANNEX

Non-polished lithic artefacts from the Hamangia cemetery at Cernavodă – *Columbia D*

The abbreviations used in the table are as follows:

- IAB – “Vasile Pârvan” Institute of Archaeology, Bucharest
- C1 – Field notes, book 1: see Berciu 1954
- C2 – Field notes, book 2: see Morintz 1954
- C3 – Field notes, book 3: see Morintz 1954–1955
- C5 – Field notes, book 5: see Berciu 1955
- C6 – Field notes, book 6: see Morintz 1956

ID no.	Inventory no.	Type	Petrography	Location inside cemetery		Drawing of the context	Description in the field notes	Anthropological determination (with the indication of the anthropological no. from the manuscript)	Location inside the grave (source of information)	Observations
1.	F 354	flake	Silicolite Bn type	pits	CVD'54?, Col. D?, S I, -0.60 m					
2.	F 330	cortical flake	Silicolite Bh type	pits	CVD'54, Col. D, S I, □1, -0.20 -0.40 m					
3.	F 320	retouched blade	Silicolite An type	?	CVD'60, Col. D, S I, □9, -0.40 m					
4.	F 310	hammer	Fine crystallised limestone, yellowish, homogenous, compact, with fine porosity and with millimetric whitish inclusions	pits	CVD'54, Col. D, S I, □11, -0.80 m					
5.	F 309	hammer	Fine gritty limestone, brick-reddish, homogenous, compact, with carbonate crust	pits	CVD'54, Col. D, S I, □14, -1.35 m (p 70)					burned
6.	F 334	hammer fragment	Silicolite Ah type	pits	CVD'54, Col. D, S I, □19, -20, -0.50 -1.00 m					
7.	F 316	unretouched blade	Silicolite Ah type	pits	CVD'53, Col. D, Cas. A					
8.	F 318	indet. fragment	Silicolite An type	pits	CVD'53?, Col. D, S IB, □4, -0.40 m					burnt to red and black
9.	F 321	retouched blade	Silicolite Bn type	pits	CVD'53 (?), Col. D, S IB, □4, -0.40 m					
10.	F 324	truncation	Silicolite Bn type	pits	CVD'53?, Col. D, S IB, □4, -0.40 m					
11.	F 044	unretouched blade	Silicolite Ah type	pits	CVD'56, Col. D, S IB, □4, Complex 24 (grave)			Infans II (8-9 years) (266)		- associated with pottery - incomplete skull plus a mandible fragment
12.	F 119	retouched blade	Silicolite Ah type	pits	CVD'54, Col. D, S IB, Complex H					associated with animal bones
13.	F 279	flake	Silicolite Ah type	pits	CVD'53?, Col. D, S IC, -0.20 m					
14.	-	<i>a lump of flint from which flakes were detached</i>		pits	CVD'54, Col. D, S III, East end		C2			
15.	-	<i>fine blade</i>		pits	CVD'55, Col. D, S VIII, S half?, -0.25 -0.50 m		C3			
16.	F 341	retouched blade	Silicolite Ah type	pits	CVD'55, Col. D, S VIII, □1a, -1.40 m		C5			
17.	-	<i>pointed flint</i>		pits	CVD'55, Col. D, S VIII, □1a, -1.55 m		C5			

ID no.	Inventory no.	Type	Petrography	Location inside cemetery		Drawing of the context	Description in the field notes	Anthropological determination (with the indication of the anthropological no. from the manuscript)	Location inside the grave (source of information)	Observations
18.	F 331	unretouched blade	Silicolite C type	pits	CVD'55, Col. D, S VIII, □1a-b, Complex a					associated with animal bones and shells
19.	F 062	unretouched blade	Silicolite Ah type	pits	CVD'55, Col. D, S VIII, □2, -1.00 m					
20.	F 063	unretouched blade	Silicolite Ah type	pits	CVD'55, Col. D, S VIII, □2, -1.00 m					
21.	F 278	unretouched blade	Silicolite Bh type	pits	CVD'55, Col. D, S VIII, □5, -0.85 -1.00 m					
22.	F 312	flake	Silicolite Bh type	pits?	CVD?, Col. D?, S V?, G5 or G15?					
23.	F 178	core fragment	Silicolite Ah type	pits/LC	CVD'54, Col. D, S II, □7, -1.00 m					
24.	F 314	cortical flake	Silicolite Bh type	LC	CVD'54, Col. D, S IV-IVb, G5		C1	M, > 30 years (55) F?, 30-35 years (53)	beneath the skull	- associated with a pottery shard (beneath the skull) and with a stone (also in the skull area) - the anthropological determination is faulty and needs reevaluation
25.	-	<i>blade⁴</i>		LC	CVD'54, Col. D, S IVc, Complex 3 = G4 (G15)		C3 C5?		head area?	- the grave included one or two vessels, two stone axes, a stone and a pottery shard - the flint blade was found in the place where the head should have been but instead was a stripe of black soil that cut through the surrounding yellow one
26.	-	<i>flake</i>		LC	CVD'55, Col. D, Surface Y, G2		C5	F, mature (64)	below the grave level	associated with a very small shard and a stone axe (?)
27.	-	<i>flake</i>		LC						
29.	F 177	unretouched blade	Silicolite Bh type	LC	CVD'56, Col. D, S R1, □5, -0.30 m?					
30.	F 317	hammer	Silicolite Ah type	LC	CVD'56, Col. D, S R1, C ₁ B (Complex 1B?), - 1.30 m			- M, mature - F, mature - F, mature (98a-c)		
31.	-			LC	CVD'56, Col. D, S R4, Complex 1 / G1	YES	C6	Complex 1: - M, mature - F, mature - F - F? (131a-d) M 1: F, 25-30 years (124)		- whether part of Complex 1 – associated with animal bones, a stone axe and a stone - whether part of M 1 – not associated with anything
32.	-			LC	CVD'56, Col. D, S R4, □7, Complex 4 = G6	YES		indet., adult/mature (130)		associated with a clay figurine, and a small stone
33.	F 277	endscraper	Silicolite An type	LC/UC	CVD'55, Col. D, S X, no. 7					

⁴ The items with the determination of type in italics could not be analysed directly; the determination/description used in this table is from the field notes.

ID no.	Inventory no.	Type	Petrography	Location inside cemetery		Drawing of the context	Description in the field notes	Anthropological determination (with the indication of the anthropological no. from the manuscript)	Location inside the grave (source of information)	Observations
34.	F 315	retouched blade	Silicolite Ah type	LC/UC	CVD'57, Col. D, S XA, G12			-----		in the deposit, the blade was inside vessel no. 10; it is not clear if it was discovered as such or the association is accidental
35.	F 332	core fragment	Silicolite Ac type	LC/UC	CVD'57, Col. D, S XB					
36.	F 167	core fragment	Silicolite Ah type	LC/UC	CVD'58, Col. D, S XE, G5			M, 30-35 years (388)		associated with three pottery fragments from two different vessels, both of them attributed to Cernavodă III culture; this grave needs reevaluation
37.	-	flake		UC	CVD'55, S IX, □2, -0.65 m		C5		0.20 m east of a skull	in the yellow soil carried by waters
38.	F 053	endscraper	Silicolite Ah type	UC	CVD'55, Col. D, S IXA, □6, -0.30 m					
39.	F 057	retouched blade	Silicolite Ah type	UC	CVD'55, Col. D, S IXB, □11, -0.65 m					
40.	F 313	indet. fragment	Silicolite An type	UC	CVD'56, Col. D, S D1, □1a, -0.35 -0.45 m		C6			
41.	F 313?	flint		UC	CVD'56, Col. D, SD, □1a (G-? / Skull no. 1)	YES			in-between vessel no. 4 and skull	associated with pottery and animal bones (?)
42.	-	flint		UC	CVD'56, Col. D, SD, □1j, G ...	YES				
43.	-	narrow blade		UC	CVD'56, Col. D, SD, □2l, G35		C6	F, mature (195) M, 40-45 years (185)	on the wild boar skull; this skull was placed near the skull of M 35	- associated with animal bones, stone axe and a stone - the anthropological determination is faulty and needs reevaluation
44.	-	endscraper		UC	CVD'56, Col. D, SD, □3d, -0.85 m		C6			
45.	-	flint		UC	CVD'56, Col. D, SD, □3i, G28/G29?	YES		M 28: M, mature (211) F, 60 years (213) M 29: M, mature (212) M, 30 years (214)		- associated with pottery and a stone axe - the anthropological determination is faulty and needs reevaluation
46.	-	flint		UC	CVD'56, Col. D, SD, □3h, -0.25 m, (G56a)	YES	C6			associated with disarticulated human bones, one vessel, and one stone
47.	-	flint		UC	CVD'56, Col. D, SD, □3i/4i	YES				associated with two human long bones and a stone axe
48.	-	flint		UC						
49.	F 342	core fragment	Silicolite Bn type	-	CVD'60, Col. D, Passim					
50.	F 343	indet. fragment	Silicolite Ah type	-	CVD'60, Col. D, Passim					
51.	F 348	hammer	Silicolite Ah type	-	CVD'55, Col. D, Passim (fallen from the pit)					

ABRÉVIATIONS / ABBREVIATIONS / ABREVIERI

- AA – Archäologischer Anzeiger. Deutsches Archäologisches Institut, Darmstadt, München, Tübingen–Berlin
Acta MN – Acta Musei Napocensis Cluj-Napoca
ActaMP – Acta Musei Porolissensis, Zalău
AJA – American Journal of Archaeology, Boston
Altertum – Das Altertum, Deutsche Akademie der Wissenschaften zu Berlin Sektion für Altertumswissenschaft
Akademie der Wissenschaften der DDR Zentralinstitut für Alte Geschichte und Archäologie, Berlin
AnB – Analele Banatului, Muzeul Banatului, Timișoara
Antiquity – Antiquity. A Review of World Archaeology, Durham, UK
ArchBulg – Archaeologia Bulgarica, Sofia
AIGR – Anuarul Institutului Geologic al României, București
AIIA Cluj – Anuarul Institutului de Istorie și Arheologie, Cluj-Napoca
AM – Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung
Apulum – Acta Musei Apulensis. Muzeul Național al Unirii, Alba Iulia
ArchKorr – Archäologisches Korrespondenzblatt, Mainz
Argesis – Argesis. Muzeul Județean Argeș. Pitești
ArhMold – Arheologia Moldovei, Iași
BA – Biblioteca de Arheologie, București
BAI – Bibliotheca Archaeologica Iassiensis, Iași
BARIntSer – British Archaeological Reports. International Series, Oxford
BCȘS – Buletinul Cercurilor Științifice Studentești. Arheologie – Istorie – Muzeologie, Alba-Iulia
BICS – Bulletin of the Institute of Classical Studies of the University of London, London
Bjb – Bonner Jahrbücher des Rheinischen Landesmuseums in Bonn, Bonn
BMA – Bibliotheca Memoriae Antiquitatis, Piatra-Neamț
BMJT – Buletinul Muzeului Județean Teleorman, Alexandria
BMMN – Buletinul Muzeului Militar Național, București
BMTA Giurgiu – Buletinul Muzeului „Teohari Antonescu”, Giurgiu
BPS – Baltic-Pontic Studies, Poznań
Britannia – Britannia. A Journal of Roman-British and Kindred Studies. Society for the Promotion of Roman Studies, Cambridge
BSA – British School at Athens, Athens
BSPF – Bulletin de la Société Préhistorique Française, Paris
CA – Cercetări Arheologice, București
Carpica – Carpica. Complexul Muzeal „Iulian Antonescu” Bacău, Bacău
Carst – Cercetare, explorare, Actualitatea speo, Recenzii, editorial, Știință, Tehnică, Cluj-Napoca
CCA – Cronica Cercetărilor Arheologice din România, București
CCDJ – Cultură și Civilizație la Dunărea de Jos, Călărași
CEFR – Collection de l'École Française de Rome
CercIst – Cercetări Istorice, Iași
Dacia – Dacia (Nouvelle Série). Revue d'archéologie et d'histoire ancienne. Académie Roumaine. Institut d'archéologie « V. Pârvan », Bucarest
Documenta Praehistorica – Documenta Praehistorica, University of Ljubljana, Faculty of Arts, Department of Archaeology
EphemNap – Ephemeris Napocensis. Academia Română, Institutul de Arheologie și Istoria Artei, Cluj-Napoca
ERAUL – Études et Recherches archéologiques de l'Université de Liège
ÉtThas – Études thasiennes, École Française d'Athènes, Athènes-Paris
EurAnt – Eurasia Antiqua. Deutsches Archäologisches Institut, Berlin
GodišnikSofia – Godišnik na Sofijskija Universitet „Sv. Kliment Ochridski”, Istoriceskij fakultet, Sofia
Hesperia – Hesperia. Journal of the American School of Classical Studies at Athens, Cambridge
IFAO – Institut français d'archéologie orientale, le Caire
JAS – Journal of Archaeological Science

Kernos – Revue internationale et pluridisciplinaire de religion grecque antique, Liège
Marisia – Marisia. Studii și materiale. Arheologie – Istorie – Etnografie, Târgu Mureș
MemAnt – Memoria Antiquitatis, Piatra Neamț
MCA – Materiale și Cercetări Arheologice, București
OLBA – Mersin University Publications of the Research Center of Cilician Archaeology, Mersin, Turkey
Paléo – Paléo. Revue d'Archéologie Préhistorique, Les Eyzies, France
Peuce – Peuce, Studii și cercetări de istorie și arheologie, Institutul de Cercetări Eco-Muzeale, Tulcea
Pontica – Pontica. Studii și materiale de istorie, arheologie și muzeografie, Muzeul de Istorie Națională și Arheologie Constanța
Quartär – International Yearbook for Ice Age and Stone Age Research
RCRFacta– Rei Cretariae Romanae Fautorum
RE – Realenzyklopädie: Paulys realenzyklopädie der klassischen Altertumswissenschafts, Stuttgart, 1893
RI – Revista Istorică. Academia Română, Institutul de Istorie „Nicolae Iorga”, București
RESEE – Revue des Études Sud-Est Européennes. Academia Română, Institutul de Studii Sud-Est Europeene, București
RevBistr – Revista Bistriței. Complexul Muzeal Bistrița-Năsăud, Bistrița
SAA – Studia Antiqua et Archaeologica, Iași
SCIV(A) – Studii și Cercetări de Istorie Veche (și Arheologie), București
SlovArch – Slovenská Archeológia, Nitra
SMMIM – Studii și Materiale de Muzeografie și Istorie Militară, București
SP – Studii de Preistorie, București
Suceava – Suceava. Anuarul Muzeului Bucovinei, Suceava
Th-D – Thraco-Dacica, București
Transylvanian Review – Transylvanian Review. Centrul de Studii Transilvane, Cluj-Napoca
Tyrgetia – Tyrgetia. Anuarul Muzeului Național de Istorie a Moldovei, Chișinău
VT – Vetus Testamentum