

SOME REMARKS ABOUT THE TOOLS USED FOR OBTAINING SALT IN PREHISTORY IN NORTHERN OLTENIA

Abstract: This article discusses the functionality of a certain type of hammer-axe, found especially in northern Oltenia. Mostly probable, this was also used for breaking salt lumps.

Keywords: northern Oltenia, salt, mining tools, hammer-axes.

Some series of specialists, including us, had referred in extensive or short studies to a certain type of stone hammer-axe, specific to an extended Euro-Asian, North-African spaces, reaching up to South American ones. In a synthesis we had published more than ten years ago, we have revised some of the items in this category on the territory of Romania (Schuster 1998). Subsequently, to that list, we have brought some completions (Schuster 2000).

As we have established on those occasions, such hammer-axes, had been identified in Eneolithic manifestations (Cucuteni and Gumelnița cultures; Dumitrescu 1933: 95 and fig. 3/3; Dumitrescu H. 1954: 259 and fig. 23/2-3; Harțuche, Anastasiu 1968: 14 and fig. 15/4; Harțuche, Anastasiu 1976: 83 and fig. 95; Harțuche 1983: 18 and fig. 18/3; Harțuche 2002: 34 and fig. 32/3; Pricop 1983: 35-38 and fig. 1, 3; Lăzurcă 1984; Cucos, Muraru 1985: 619; Hașotti 1985; Petrescu-Dîmbovița *et alii* 1995: 35 și fig. 3/8; Harțuche, Bounegru 1997: 41 and figs. 24/2, 28/9; Micu, Maille, Mihail 2005: fig. 10/7), Bronze Age (Glina, Verbicioara, Wietenberg, Monteoru, Tei cultures; Ciurea 1933: 53 and fig. 4/2; Berciu 1939: 89-91 and fig. 103-1-4; Berciu 1953: pl. 12/B3; Berciu 1961: p. 123-161; Leahu 1966: 63; Leahu 2003: 74; Comșa 1972: 256 and fig. 8; Ignat 1981: 133 and fig. 1/6; Diaconescu, Diaconescu, Tuță 1981; Petre-Govora 1986: 279 and fig. 1/a-b; Petre-Govora 1995: fig. 1/a-b; Ciucă 1986: 74 and fig. 9/12; Andrițoiu 1992: 44-45; Vasiliu 1995: 91 and pl. 4/3; Vasiliu 1996; Vasiliu 2004: 25 and pl. I/a; Vasiliu 2007: 124 and fig. 4/7; Simion 2003: 23 and fig. 10/2; Crăciunescu 2007: 77; Ilie, Mecu, Frânculeasa 2010, 30-31 and pl. I/1) and even Early Iron Age (Harțuche, Silvestru 1992: 19 and pl. 12/3; Harțuche 2002: 144 and fig. 105/4).

Also then, we have mentioned some considerations of diverse specialists regarding their functionality (Schuster 1998: 15 with lit.). Thus, some of these items had been considered to be trawl weights or fishing utensils proper, others, being more flat, hoes, used for leather processing or cutting wood, hunting, or

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fighting weapons and not the least, for mining. For the last mentioned purpose, there are mentioned some finds of such stone artifacts, made in mine galleries or their proximity (Schuster 1998: 125 and footnotes 271 and 273). A hammer-axe of this category had been discovered in a mine from Romania, namely the one from Căraci-Tebea (Popescu 1956: 197; Andrițoiu 1992: 45 and pl. 39/14).

This polyvalent utility of these items, had induced the use of several denominations in the English language, like: „stone double-headed hammer”, „stone axes”, „stone hammer”, „hammerstones”, „massive hammers”, „heavy-duty stone hammers for mine working”, „waited pounder-ruber”, „groovier hammer-stones”, „maul handles” (Koumouzelis 1981; Hood 1982; Eliopoulos 1991; Craddock 1991; O’Brien 1994; Jovanović 1995; Bogosavljević 1995; Gale 1995). This diversity in terminology is also confirmed by the „specialized” vocabulary in German and French (Schuster 1998: 125 with lit.).

Even a less attentive approach concerning the distribution of the hammer-axe on the territory of Romania, reveals that the consistent part of these items had been found in the northern part of Oltenia. Such artifacts had been recovered from Aniniș, Căpreni, Cărbunești, Hurezani, Raci, Săcelu-Chicioara, Sura, Târgu Jiu, Tâșărești, Țicleni, all in the Gorj County, Căzănești, Armășești, Mateești, Herăști, and Ocnița villages in the Vâlcea County (Schuster 1998: 113-116; Blăjan, Panait 2007; Tuțulescu, Binder 2009: 88 and pl. V/6). To those from the Vâlcea County we could also add four other items of unknown provenance (Berciu 1939: 88-89 and fig. 103/1; Tulugea, Blăjan 2009: 40 and figs. 1-3).

Regarding these hammer-axes, Dumitru Berciu had considered, even in 1939 that they could have been used for mining (Berciu 1939), a hypothesis also accepted by Eugen Comșa (1972). An extra nuance was brought by Gheorghe Petre (1968), who had discussed about mining and salt extraction and Augustin Ulanici (1981), who was sure, referring to the find from Branet, that they were used in salt mines.

A revalorification of the information regarding the hammer-axes in the range of the Vâlcea County, the analysis of this kind of item in the collections of the County Museum „Aurelian Sacerdoțeanu” (R. Vâlcea) and, especially those of the Museum of Archaeology and Religious Books „Petre Govora” (Băile Govora), brings further data about the functionality of these tools.

Even if, as already pointed out (Schuster 1998: 118), many of hammer-axes from the Vâlcea County had an unknown provenance, fact confirmed by some new published papers (Tulugea, Blăjan 2009: 40) and our recent investigations (see the *Catalogue* from the end of this article), it is obvious that the items come from an area rich in rock salt.

The cultural assignment of the items in the area is hard to be done. In an article made by Petre Gherghe (1987), he author had assigned these find in the Gorj County as part of the transitional period to the Bronze Age and Early Bronze Age. This assignment had been done by considering the dimensions of the tools (the smaller one had been considered as belonging to the Coțofeni Culture, the bigger ones to the Glina Culture), without being discussed the exact and clear stratigraphic

position of those finds, In fact, the only axes more clearly dated based upon a stratigraphic situation are those from Căzănești and Ocnița (Petre 1968: 279 and fig. 1; Petre-Govora 1995: 33 and fig. 1; Schuster 1998: 114 and fig 6.1; Tuțulescu, Binder 2009: 88 and pl. V/6), assigned to the Glina Culture of the Early Bronze Age.

Along the history, the salt in north-eastern Oltenia had been exploited by using the salted springs, but also by mining. The so-called salt breads, obtained by briquetting may be specific to the Eneolithic time: we mention here those two briquetting vessels found in the site of the IIIb-Iva phased of the Starčevo-Criș Culture from Copăcelu-*Valea Răii*, in turn, the galleries digging being specific to the Dacian, Roman, Middle Ages and Modern periods (Schuster, Tuțulescu, Dumitrescu 2010, with lit.). What would happen in the transitional period to the Bronze Age and during the latter one it just starts to be revealed, by reassessing some older investigations. Therefore, by the analysis of the archaeological materials from the repository of the County Museum „*Aurelian Sacerdoțeanu*” Vâlcea and that of the Museum of Archaeology and Religious Books „*Petre Govora*” from Băile Govora, we can signal the existence of five settlements belonging to the Coțofeni Culture, where the salt obtaining and processing had probably played a significant role, namely Ocnele Mari-*Coasta Ungurească*, Ocnele Mari-*Zdup*, Ocnița-*Cosota*, Govora-*Dealul Săpunarului* and Căzănești-*Fabrica de Cărămidă*. Dumitru Berciu (1966: 135) discussing about a certain kind of conical vessels, documented for the first time during the archaeological investigations carried out at Govora-*Dealul Săpunarului*, had considered them as being cultic items. Judging this shape of receptacles in the light of the new knowledge, we believe they could be briquetting pottery that appeared in the second phase and were maintained during the subsequent one (Petre-Govora 1982: 14 and figs. 4/5, 18, 8/5). To some items, the bottom of the vessels is flat and added after the shape was fully defined, its purpose being a practical one. As a decoration we could find the incised lines upon the entire body of the pot, without being group in certain registers.

We can observe that, the same like in the case of the coarse and semi-fine ceramics, a great importance was dedicated to the inner part of the briquetting vessels. This is well processed, compared with the outer one, where the surface is superficially treated. According to their dimensions, the vessels found in those five settlements could be grouped into three categories: small = 8-10 cm; middle = 14-15 cm and big = over 20 cm.

By considering the large amount of broken fragments uncovered during the archaeological investigations, we consider that the briquetting activities detained an important role in the life of the Coțofeni communities situated in the area of the saline platform from Ocnele Mari. During the excavations from Ocnița-*Cosota*, Dumitru Berciu had mentioned the discovery of hundreds of fragmentary bitruncated vessels used in this technical process (Berciu 1981: 13).

Observing the stratigraphy of the Coțofeni settlements in those up mentioned five spots, we could consider that two of them were seasonal habitations (Govora-

Dealul Săpunarului, Ocnele Mari-Coasta Ungurească), while the last three were stable ones (Petre-Govora 1995: 20).

Besides the salt briquetting, the Coțofeni groups had also exploited the rock salt. We consider that the mining hammer-axes were used for breaking the salt lumps, but, we don't know if they were also used in the gallery labor, a more ample procedure for those times.

To the salt fragmentation at the surface, visible even today in the region, had surely contributed also the Bronze Age communities, especially the Glina ones, as suggested by the mining hammer-axes surely discovered in settlements of this culture, but also in spots where Early Bronze Age pottery could be recovered.

If they also used the briquetting, we don't have (yet?) proofs in this sense. But, it is certain that, Glina materials had been identified in the following spot, where salted spring were also documented: at *la Căzănești-Platformă, Ocnele Mari-Coasta Ungurească, Ocnele Mari-Aval Baraj, Ocnele Mari-Cosota, Ocnele Mari-Zdup* (Petre-Govora 1995: 26, 30). The Verbicioara pottery was found at *Căzănești-Săveasca, Cărmidărie, Ocnele Mari-Cărpiniș, Cosota, Coasta Ungurească, Ștrand, Zdup, Țeica* (Petre-Govora 1995: 43, 47-51, Ridiche 2000: 39, 47).

Therefore, if in the Gorj County the mining hammer-axes had been probably used for exploiting some ores, in North-Eastern Vâlcea County they served for displacing and fragmenting pieces of rock salt. From Northern Oltenia, these items had penetrated, together with the salt, towards the region of Mehedinți, Dolj and downstream Olt. Confirmations in this sense we could consider the tools found at *Drobeta-Turnu Severin, Ostrovul Corbului, Roșoreni, Velești, Lișteava, Branet* (Schuster 1998: 114-116, with lit.).

Catalogue of some Hammer-axes in the museums from the Vâlcea County

The measuring to the hammer-axes had been done by using: L = maximal length, A = the length between the cutting edge and the center of the hole for fixing the handle, B = the length between the neck and the center of the hole for fixing the handle, C = cutting edge, l = maximal width, D = neck, E = the hole for fixing the handle, l.E = hole width.

1. Inv. No. 205, pl. III/1;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = *Căzănești*;
- Max. L. = 18,2 cm;
- Max. l. = 5,2 cm;
- A = 9,6 cm;
- B = 6 cm;
- E = 2,6 cm;
- l.E = 4,1 cm
- D = 12,2 x 3,6 cm;

- C = broken in ancient times.
- References: Petre-Govora 1968: 279 and fig. 1/1a-b; Petre-Govora 1995, fig. 1/1a-b.

2. Inv. No. 221, pl. I/4;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 9,67 cm;
- Max. l. = 3, 63 cm;
- A = 6, 27 cm;
- B = 1, 56 cm;
- E = 1,84 cm;
- l.E = 3,2 cm
- D = 7,2 x 3,84 cm;
- C = 4,9 cm.
- References: unpublished.

3. Inv. No. 219, pl. I/2;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 12,92 cm;
- Max. l. = 5,4 cm;
- A = 6,5 cm;
- B = 3,6 cm;
- E = 2,82 cm;
- l.E = 4,34 cm
- D = 7,2 x 5,7 cm;
- C = broken in ancient times.
- References: unpublished.

4. Inv. No. 223, pl. II/1;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 12,33 cm;
- Max. l. = 5,2 cm;
- A = 6,8 cm;
- B = 3,6 cm;
- E = 1,94 cm;
- l.E = 2,84 cm;

- D = 6 x 4,1 cm;
- C = 4,3 cm.
- References: unpublished.

5. Inv. No. 224, pl. II/2;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 11,6 cm;
- Max. l. = 5,9 cm;
- A = 6,1 cm;
- B = 3,3 cm;
- E = 2,2 cm;
- l.E = 3,1 cm;
- D = 7,7 x 3 cm;
- C = 4,1 cm.
- References: unpublished.

6. Inv. No. 226, pl. II/4;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 9,2 cm;
- Max. l. = 5,4 cm;
- A = 4,3 cm;
- B = 3 cm;
- E = 1,9 cm;
- l.E = 2,67 cm;
- D = 2,37 x 5,1 cm;
- C = 4,9 cm;
- d. perforație = 1,6 cm.
- References: unpublished.

7. Inv. No. 222, pl. I/5;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 12 cm;
- Max. l. = 6cm;
- A = 7,2 cm;
- B = 2,6 cm;
- E = 2,2 cm;

- l.E = 4 cm;
- D = 5,4 x 4,2 cm;
- C = 2,8 cm.
- References: unpublished.

8. Inv. No. 225, pl. II/3;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 12,36 cm;
- Max. l. = 11 cm;
- A = 5,4 cm;
- B = 3,6 cm;
- E = 3,36 cm;
- l.E = 2,6 cm;
- D = 5,4 x 4,2 cm;
- C = 3,3 x 5,7 cm.
- References: unpublished.

9. Inv. No. 220, pl. I/3;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 12,4 cm;
- Max. l. = 6,2 cm;
- A = 5,3 cm;
- B = 3,9cm;
- E = 3,2 cm;
- l.E = 4,4 cm;
- D = 7 x 5,6 cm;
- C = broken in ancient times.
- References: unpublished.

10. Inv. No. 207, pl. I/1;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 15,5 cm;
- Max. l. = 9,6 cm;
- A = 9,9 cm;
- B = 2 cm;
- E = 3,6 cm;

- l.E = 4,3 cm;
- D = 6,4 x 8,5 cm;
- C = 7 cm.
- References: unpublished.

11.Inv. No. 228, pl. II/5;

- Hosting repository: Museum of Archaeology and Religious Book „*Petre Govora*”, Băile Govora;
- Locality = unknown;
- Max. L. = 18,3 cm;
- Max. l. = 9,9 cm;
- A = 10,5 cm;
- B = 3,8 cm;
- E = 4 cm;
- l.E = 3,9 cm;
- D = 4,9 x 7,4 cm;
- C = 7 cm.
- References: unpublished.

12.Inv. No. 41, pl. III/2;

- Hosting repository: History Museum „Aurelian Sacerdoțeanu” Vâlcea;
- Locality = *Armășești* ?;
- Max. L. = 12,2 cm;
- Max. l. = 8 cm;
- A = 5,2 cm;
- B = 3,1 cm;
- E = 3,9 cm;
- l.E = 4,4 cm;
- D = 4,1 x 7,2 cm;
- C = 5,9 cm.
- References: unpublished.

13.Inv. No. 226 A, pl. III/3;

- Hosting repository: History Museum „Aurelian Sacerdoțeanu” Vâlcea;
- Locality = unknown;
- Max. L. = 8,9 cm;
- Max. l. = 9 cm;
- A = 4,2 cm;
- B = 1,7 cm;
- E = 3 cm;
- l.E = 3,6 cm;

- D = 4 x 5,8 cm;
- C = 6 cm.
- References: unpublished.

14.Inv. No. 41, pl. III/4;

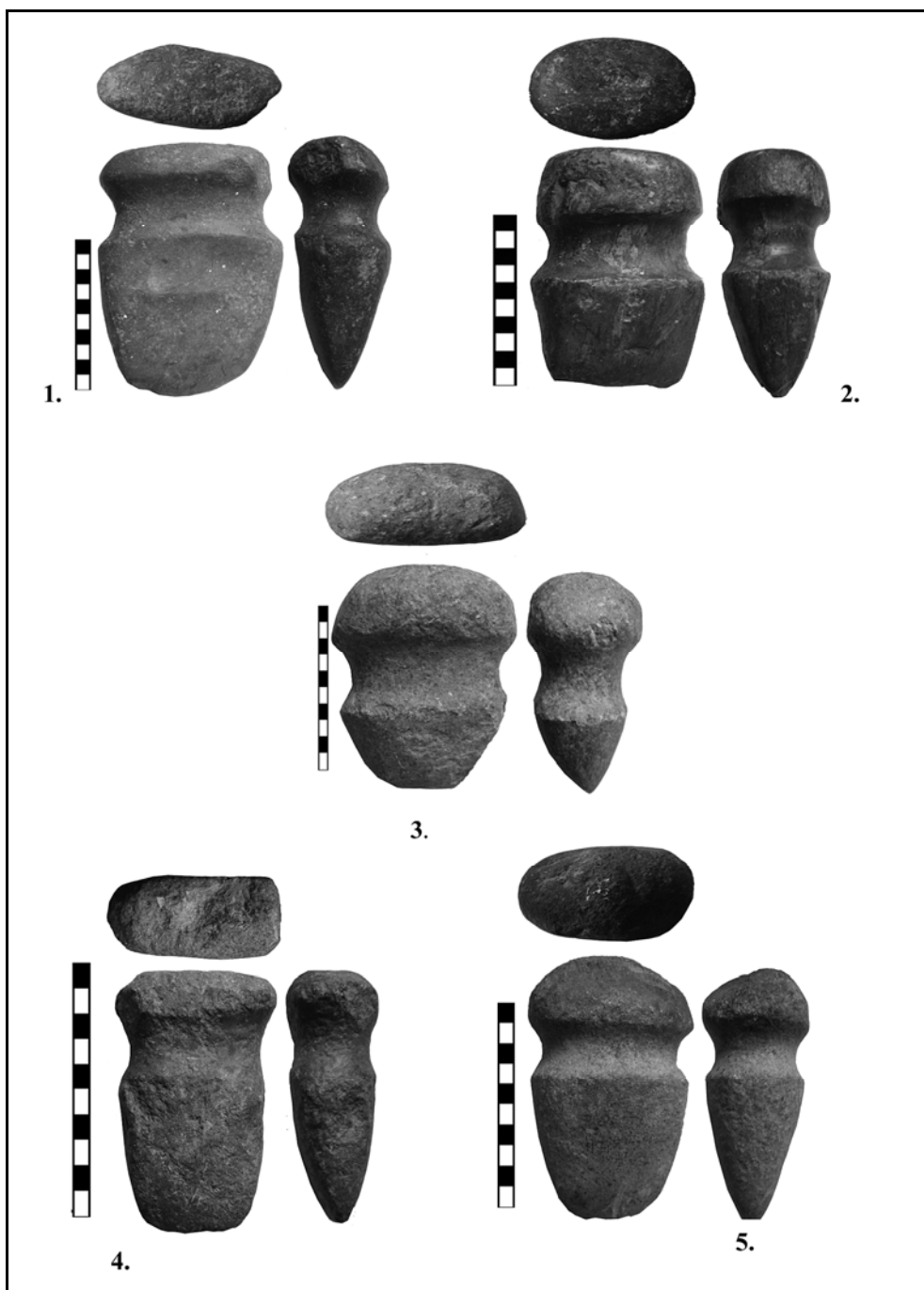
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- Locality = *Mateești*?;
- Max. L. = 18,8 cm;
- Max. l. = 8 cm;
- A = 9,6 cm;
- B = 5,1 cm;
- E = 4,1 cm;
- l.E = 4,2 cm;
- D = 5,4 x 6,2 cm;
- C = broken in ancient times.
- References: unpublished.

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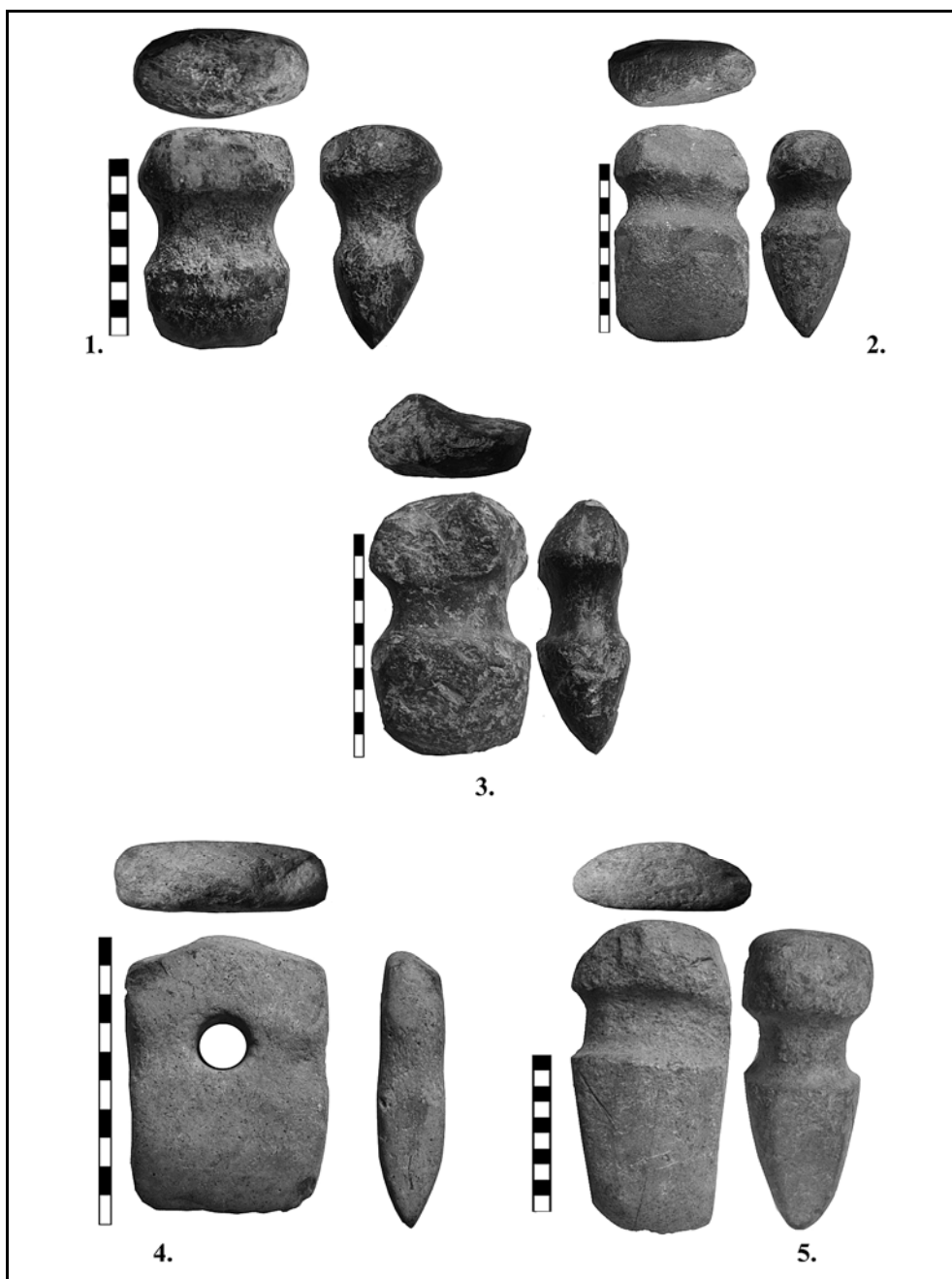
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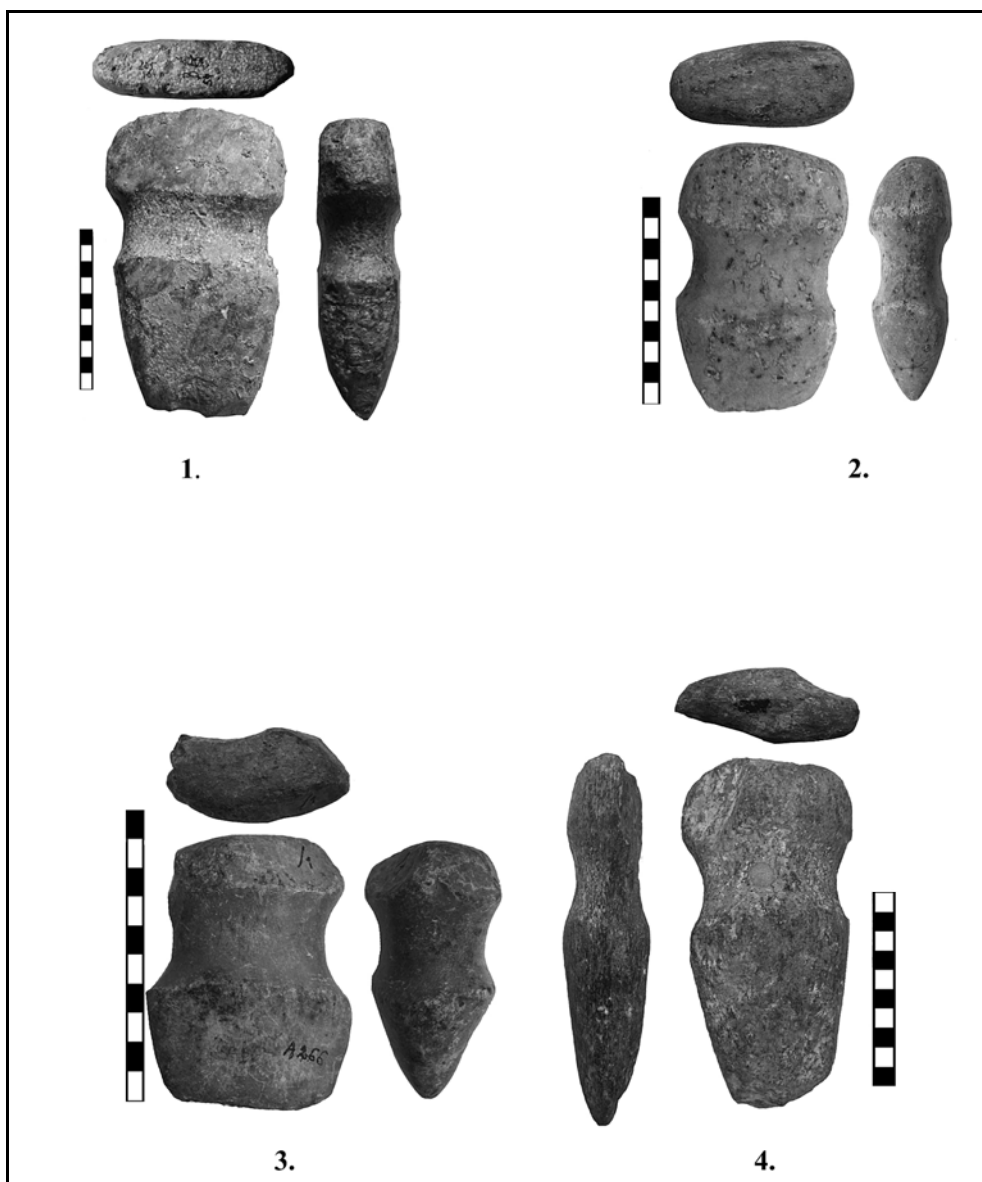
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Pl. I. Govora Museum: 1 = inv. no. 207, 2 = inv. no. 219, III = inv. no. 220, 4 = inv. no. 221, 5 = inv. no. 222. Pictures I. Tuțulescu.



Pl. II. Govora Museum: 1 = inv. no. 223, 2 = inv. no. 224, III = inv. no. 225, 4 = inv. no. 226, 5 = inv. no. 228. Pictures I. Tuțulescu.



Pl. III. Govora Museum: 1 = from Căzănești; Vâlcea Museum: 2 = Armășești, 3 = Ocnîța, 4 = Mateești. Pictures I. Tuțulescu.