

NON – FERROUS METALLURGY IN TRANSYLVANIA OF BRONZE AGE*

For the bearers of the Bronze Age cultures, the mountain attractions besides hunting, timber and fruit, were the copper and precious metal ores. Copper, silver and gold have always constituted some of the main assets of the Intra-Carpathian subsoil (by this we refer mostly to the Apuseni Mountains as well as to the ores in the Maramureşului Mountains or the copper in the Giurgeului Mountains and Baia de Aramă). Metal outcrops claimed to be sought for by specialists, who most certainly then kept them secret. By washing gravel and/or digging holes and pits for nuggets, the ore seekers covered the demand of the local, prehistoric Europe, and even Mycenaean elites¹.

Largely, when speaking of prehistoric exploitation of non-ferrous metals in Transylvania one specifies as its unique direct proof the stone axe found in a gallery in Căraci (county Hunedoara)². Still, one should not ignore the impressive anthropomorphous statue discovered at Baia de Criş (county Hunedoara)³ or Ciceu – Mihăieşti (county Bistriţa-Năsăud)⁴ (fig. 1), which through the implements (pickaxe, basket) whose absolutely sensational analogies were found in the photos of miners taken by B. Roman at the middle of the last century, certifies that the exploitation of the non-ferrous metals was performed underground too (fig. 2). Furthermore, the Naturalhistorisches Museum in Wien preserves four hair rings with the mention Dealul Vulcoi (Roşia Montana), district Câmpeni, region Cluj⁵, while the Museum in Lupşa exhibits a miner's axe and a club, both having for their provenance the Lupşei valley. All of these discoveries demonstrate the presence of some important prehistoric miner groups in the areas rich in ore of the Apuseni Mountains.

More and more we find traces of the people involved in the bronze-related activities: finite or semi-finite pieces, moulds, hoards or isolated pieces. The tracks of quarries and work-sheds are rather frail, first of all because of subsequent exploitation, second, because of far too few exhaustive archeological investigations. Fairly well known is the little workshop for molding bronze pieces in the Wietenberg settlement at Derşida⁶. The most complete and spectacular data referring to metal processing workshops gathered so far, although partial, come from Palatca (county Cluj), from the Late Bronze

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¹ A. Hartmann, *Prähistorische goldfunde aus Europa. Spektralanalytische Untersuchungen und deren Auswertung*, in SAM 3, Berlin 1970; A. Harding, *North-South Exchanges of Raw Materials*, in *Gods and Heroes of the Bronze Age*, London 1999, 40.

² M. Roska, *Repertorium*, Cluj-Napoca, 1941; D. Popescu, *Cercetări arheologice în Transilvania*, Bucureşti 1956, 159; M. Rusu, *Metalurgia bronzului din Transilvania la începutul Hallstattului*, manuscript; I. Andriţoiu, *Civilizaţia tracilor din sud-vestul Transilvaniei în epoca bronzului*, Bucureşti 1992, 75; H. Ciugudean, *Epoca timpurie a bronzului în centrul şi sud-vestul Transilvaniei*, Bucureşti 1996, 126-127; F. Gogâltan, *Bronzul timpuriu şi mijlocii în Banat românesc şi pe cursul inferior al Mureşului. Cronologia şi descoperirile de metal*, Timişoara 1999, 117-118.

³ C. Rîşcuţa, *O nouă descoperire arheologică la Baia de Criş (jud. Cluj)*, in *Thraco-Dacica* 2001, 107-138, with bibliography.

⁴ This piece was accidentally found in 1968 or 1969. Unpublished research 2002, M. Rotea, C. Gaiu, M. Bodea and I. Săsăran, *Al. Vulpe, Epoca bronzului în Istoria Românilor*, Bucureşti 2001, 347.

⁵ St. Foltiny, *Einige spätbronzezeitliche Goldfunde aus Siebenbürgen aus im Naturhistorischen Museum*, in *Annalen des Naturhistorischen Museum Wien* 72, 1968, 704-705; V. Wollmann, *Roşia Montană im Altertum*, in *Silber und Salz in Siebenbürgen*, Bochum 2002, 27.

⁶ N. Chidioşan, *Contribuţii la istoria tracilor din nord-vestul României. Aşezarea Wietenberg de la Derşida*, Oradea 1980, 60.

Age⁷, when the workshop was in close proximity of the dwelling area. The research has brought to daylight numerous moulds for casting metal pieces, unfortunately extremely fragmented, the fragment of a bronze ingot, rectangular in shape, with curved sides (oxide ingot)⁸ (fig. 3a), a bronze anvil (fig. 3b), slag, several fragments of hand-mills, burnt out fireplaces and diverse rocks. In the workshop the space was organized in a complex way, depending on the activities deployed (selecting and grinding rocks, cutting and melting ingots, casting and retouching bronze pieces). The presence at Palatca of the plane-convex type bronze ingot and, for the first time ever on Romanian territory, of the Egeean type, as well as the probable absence of metal reduction furnace demonstrate that this operation was performed in the extraction areas.

The conversion of minerals to metal by means of fire was a process accompanied by rituals, magic formulas, and chanting to bring about the "birth of the metal." At the foundation of a furnace at Palatca formed by a burnt out clay fireplace and several slabs of whetstone laid one on top of the other, probably round in shape, a clay vessel had been deposited. Furthermore, in the close proximity of the workshop a large ritual area has been researched. Most interesting are the multiple hypostases in which next to other items (hand-mills, bronze pieces, ash, coal etc) are posited recipients with/of offerings: underneath or on top of the whetstone slabs, head down or head up.

The multitude of the ethnographic data, which assimilate the ground with the belly, the mine with the womb, and the ore with the embryo, speaks of the sexuality of the mineral realm, of the blacksmith's belongings and implements⁹. The production of pieces is the equivalent of a birth and takes on an obstetrical dimension. The blacksmith's implements, too, have a sexual value. The anvils, for instance, are identified with the female principle. Under the circumstances, the closeness between the shape of the orifice for setting in place the anvil at Palatca and the female generating organ is not accidental (fig. 3b). We cannot conclude our presentation of some of the main constituents of the workshop at Palatca, their significance included, without mentioning another unique discovery: the meteorite (fig. 3c). The meteorites coming from the skies fall on Earth with a celestial sacred charge and are often associated with the blacksmiths' activity¹⁰.

The scarcity of settlements with metallurgic activity also hints at the possible existence of itinerant artisans and/or the centralization of the activity. This new development in bronze processing registers a specialization in production by the appearance of prospectors, blacksmiths and merchants, who exported the surplus produce. Through exchange, the Transylvanian and east-Hungarian/Carpathian basin type battle axes spread far east to Bug, and to north, in the Oder and Elba region, Pomerania included¹¹, a phenomenon connected with the great amber road and the exploitation of copper and tin in the Elba region. The metal artisans are not in power, but rather work under the control of elite who had seen the contingencies between metal and wealth, technology, war and even the social and cultic structure.

Only a small number of bronze items were found in settlements and cemeteries. Most of them have a fortuitous appearance in what we call hoards. Romanian archeology has

⁷ M. Rotea, Cercetări arheologice la Palatca-Togul lui Mâmdrușcă. Observații preliminare, in *Revista Bistriței*, 10-11, 1997, 13-19; idem, *Mittlere Bronzezeit im Carpaten-Donau-Raum* (14.-9. Jahrhundert v. Chr.), in *Thraker und Kelten beidseits der Karpaten*, Cluj-Napoca 2000, 25-26.

⁸ M. Primas, E. Pernicka, *Der Depotfunde von Oberwilflingen*, Germania 76, 1998, 25-66, with bibliography.

⁹ M. Eliade, *Făurari și alchimiști*, București 1996, *passim*, with bibliography.

¹⁰ *Ibidem*, *passim*.

¹¹ M. Petrescu-Dâmbovița, *Bronze metallurgy*, in *Treasures of the Bronze Age in Romania*, București 1985, 56.

interpreted their storage only as a proof of troubled times, yet today a new interpretation is gaining ground: they are priority cultic hoards functioning as offerings, or at times, as the result of prestigious inter-community auctions of the “potlatch” type. The arguments in favor are unshakeable: long periods of peaceful development, the location of the hoards (confluence of rivers, lakes, springs, clearings, mild slopes looking east etc) the number of pieces, the arrangements, their manipulations (fired, bent, fragmentation through bending etc)¹² etc. Moreover, we do not see the logic of why some imminent military threat should cause the locals to dislodge and bury in the ground their weapons.

The multiplication of the offensive, in contrast to the defensive, fighting equipment (swords type Boiu – Sauerbrunn, battle axes, daggers, spearheads, arm bracers, all made of bronze) assembled in hoards or constituting isolated finds, the development of settlements with man-made defense, the existence of distinct warrior graves, gives the impression that the Bronze Age was a endemically warring world. We hold, however, numerous arguments that it was really a matter of parading rather than usual using force. In this context we are using the presence of the site Wietenberg (fazes I-III) over the centuries, from Dersida (tell placed on a dominating high promontory type, only few kilometers from the settlement from the plain belonging to the Otomani culture).

The extraordinary metal pieces wealth of the Intra-Carpathian space has often been remarked upon in the specialized literature¹³. The overwhelming number of finds of copper, bronze, silver and gold products is, we believe, hard to equal in prehistoric Europe. For instance, no other limited prehistoric space is known to have contained two of such large hoards dating from the same short range of time (Hallstatt A1). Uioara de Sus, accidentally found in 1909, assembles over 6 000 items weighing approximately 1 100 kg, while Șpalnaca II 1 000 paces away from the former, in the year 1887, totaling a weight of 1 000 – 1 200 kg, is formed similarly of thousands of pieces¹⁴. In addition to Șpalnaca II, the Șpalnaca it was discovered a short distance away in the year 1881 consisting of 120 bronze pieces a deposit dated Hallstatt B1¹⁵. If we add the fact that the same space was used also for a metropolis belonging to Hallstattului D¹⁶, we have the certain dimensions of a cultic space.

The native copper ores often occur together with gold and silver deposits. The gold must have been obtained both through the washing gravel method in the valleys rich with such ores, as well as through the exploitation method of the gold ore or the of surface or shallow veins in deep valleys or landslides etc. There is no doubt that the tools and procedures of washing auriferous gravel did not differ widely from those used throughout the ages to the beginning of the 20th century (fig. 4). A wooden shovel, a vat (a similar clay item was found in one of the tumuli at Lăpuș)¹⁷, a screen, a piece of woolen linen or even a sheep's wool sufficed (golden fleeces of Jason myth¹⁸). The turnout was a few grams per day for each worker in part.

¹² T. Soroceanu, Die fundumstände bronzzeitlicher Deponierungen-Ein Beitrag zur Hortdeutung beiderseit der Karpaten, in *Bronzefunde aus Rumänien*, Berlin 1995, 15-80, with bibliography; B. Hänsel, Gaben an die Götter-Schätze der Bronzezeit Europas-eine Einführung, in *Gaben an die Götter. Schätze der Bronzezeit Europas*, Berlin 1997, 11-22; S. Hansen, *Sacrificia ad flumina-Gewässerfunde im bronzzeitlichen Europa*, in *Gaben an die Götter. Schätze der Bronzezeit Europas*, Berlin 1997, 29-35.

¹³ M. Petrescu-Dâmbovița, *Depozitele de bronzuri din România*, București 1977, 114-117, with bibliography.

¹⁴ Ibidem, 108-112, with bibliography.

¹⁵ Ibidem, 135-136, with bibliography.

¹⁶ V. Vasiliev, Date noi despre necropola de incineratie de la sfârșitul primei vârste a fierului, descoperită la Uioara de Sus (judetul Alba), *Thraco-Dacica* 20, 1999, 181-188.

¹⁷ C. Kacsó, *Mărturiile arheologice*, Baia-Mare 2004, pl. LXI/3-4.

¹⁸ For the same explanation see: O. Lordkipanidze, *The Golden Fleece: Myth, Euphemistic Explanation and Archaeology*, *Oxford Journal of Archaeology* 20, 2001, 29, with bibliography.

As shown, Transylvania also was one of the most important European centers of gold and silver extraction and processing. The thesaurus found in 1840 at Țufalău, county Covasna, in the area of the Wietenberg culture, whose contents and dating has been discussed, speaks clearly of the wealth and refined tastes of a social elite. Kept in a clay pot, the thesaurus contained among others several solid gold axes, ornamental "buttons" with spiral motifs, hair ring, one bracelet and a large gold piece¹⁹. A great number of gold and silver pieces (bracelets, hair rings) were found at Oarța de Sus, with accurate stratigraphy, in a ritual space belonging to the Wietenberg culture²⁰. Such thesauruses containing hundreds of pieces weighing several kilograms as those at Sarasău (county Maramureș) (fig. 5)²¹ or Hinova (county Mehedinți)²² are few and likely to represent the community treasure. Those displaying fewer items, which seem to have been the private property of some leaders, outnumber them. Many pieces from all this category are now gathered in The National History Museum in Budapest, representing masterpieces of the Transylvanian prehistoric art: Târgu Mureș, Biia, Oradea, Firiteaz or Șmig²³.

The blacksmiths gave a measure of their talent both in what concerned the ceramic (for example the cultures Wietenberg and Suci de Sus which hardly can find an equal in prehistoric Europe) (fig. 6; 7/1), arms (fig. 7/2) and ornament shapes as well as in ornamentation, which often reaches perfection, in conditions that concerns also cult ordeals²⁴. It would have been impossible for each community member to fashion his own tools for this required some high qualification, so this proves that within a community the craftsmen carried out a distinct activity. Metal, bone, stone or clay processing were most certainly operations performed by qualified people, who deployed their activity in small or, at variance, large workshops as those at Derșida²⁵, Pecica²⁶ or Palatca.

¹⁹ D. Popescu, op. cit., 196-197; A. Mozsolics, Goldfunde des Depotfundhorizontes von Hajdúsámson, in Ber. RKG 46-47, 1965-1966, 1-76.

²⁰ C. Kacsó, Beiträge zur Kenntnis des Verbreitungsgebietes und der Chronologie der Suci de Sus-Kultur, Dacia N.S. 31, 1987, 69-70.

²¹ C. Kacsó, Date noi cu privire la tezaurul de aur de la Sarasău, SCIVA 3, 1981, 371-381, with bibliography, T. Kemenczei, Késő bronzkori arany kincsleletek, in A Magyar Nemzeti Múzeum őskori aranykincsei, Budapest 2000, 63-80.

²² M. Davidescu, Un tezaur de produse tractice descoperit la Hinova-Mehedinți, Thraco-Dacica 2, 1981, 7-22.

²³ D. Popescu, op. cit., 158-212, with bibliography; M. Rusu, Considerații asupra metalurgiei aurului din Transilvania în Bronz D și Hallstatt A, AMN 9, 1972, 29-63; A. Mozsolics, Gold votive rings, Archaeology 23, 1970, 138; idem, Bronze - und Goldfunde des Karpatenbeckens. Depothorizonte von Forró und Ópályi, Budapest 1973; T. Kovács, Bronzkori ékszerek, fegyverek, aranykincsek, in A Magyar Nemzeti Múzeum őskori aranykincsei, Budapest 2000, 37-62; T. Kemenczei, op. cit., 63-80. M. Davidescu, Un tezaur de produse tractice descoperit la Hinova-Mehedinți, Thraco-Dacica 2, 1981, 7-22.

²⁴ For instant we consider the disc decorations from Sarasău (fig. 5) being human bodies (man and woman)

²⁵ N. Chidioșan, op. cit., 60.

²⁶ M. Roska, Fouilles exécutées au Nagy- Sándor dans la commune Pécska-Szemlak, in DolgCluj 3, 1912, 33-68; F. Gogăltan, op. cit., 127.

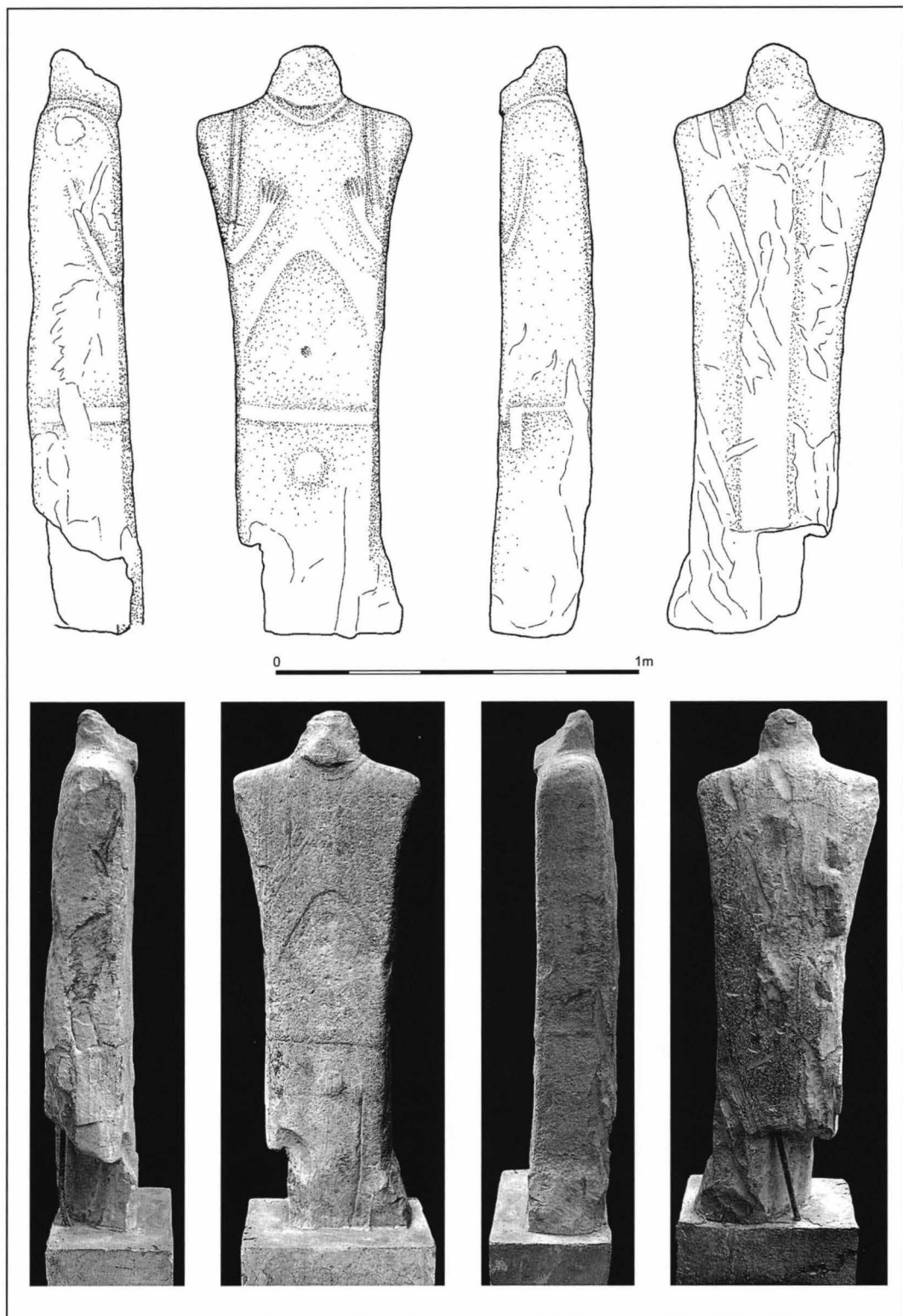


Fig. 1. Ciceu Mihăiești. Menhire statue.



Fig. 2. Roşia Montană. Bazil Roman's photos.

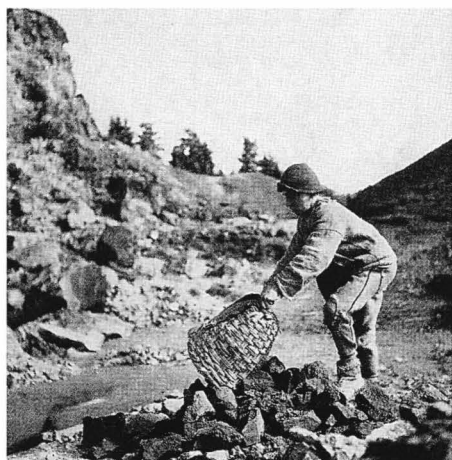
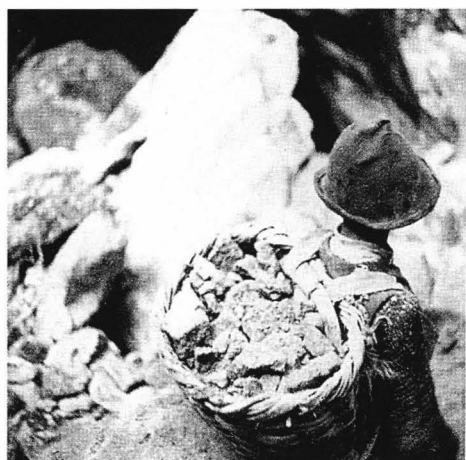
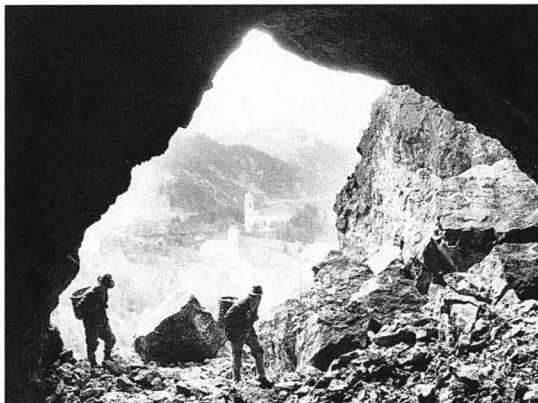


Fig. 3. Roşia Montană. Bazil Roman's photos.

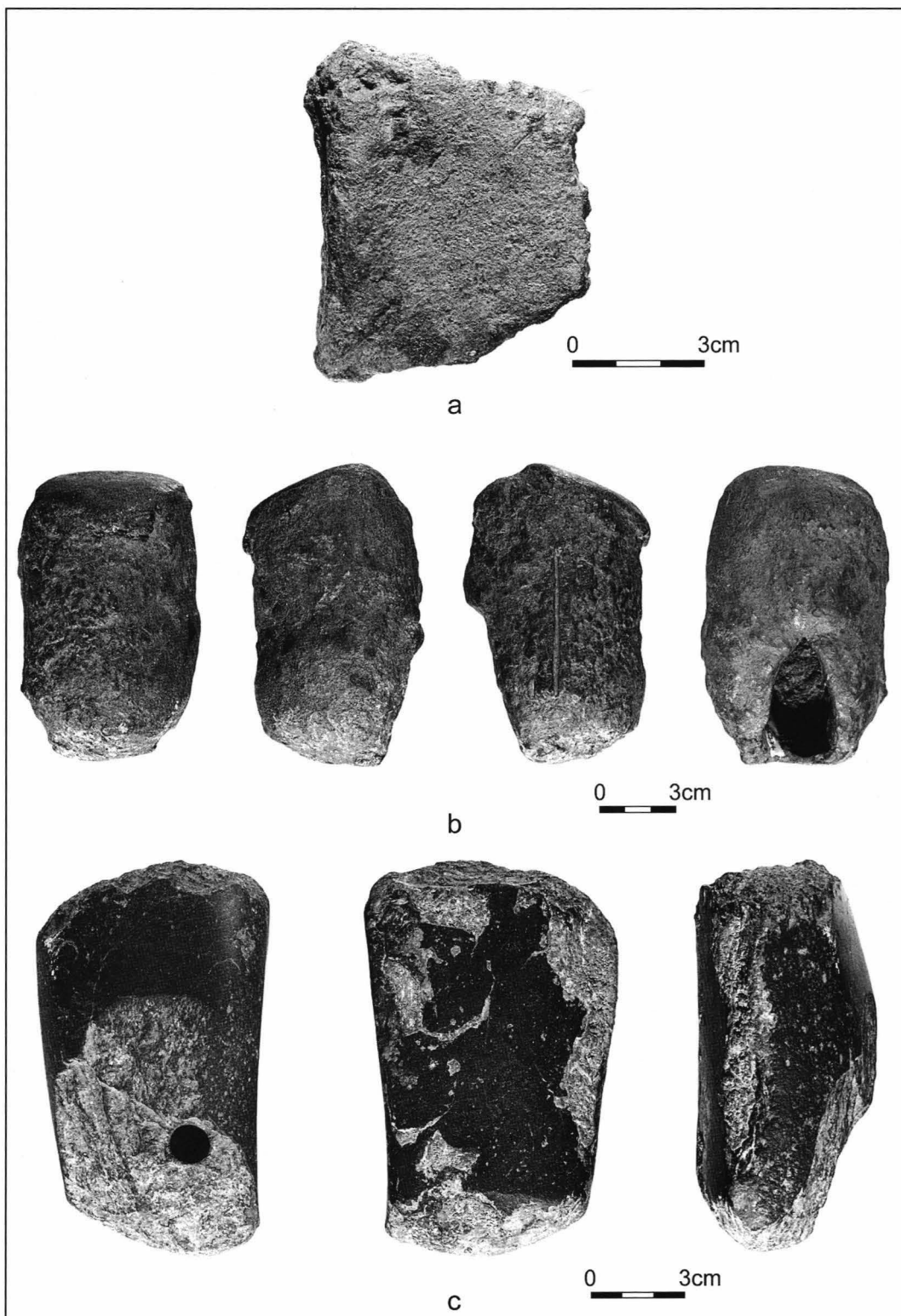


Fig. 4. Palatca. a. oxide ingot. b. anvil. c. meteorite.

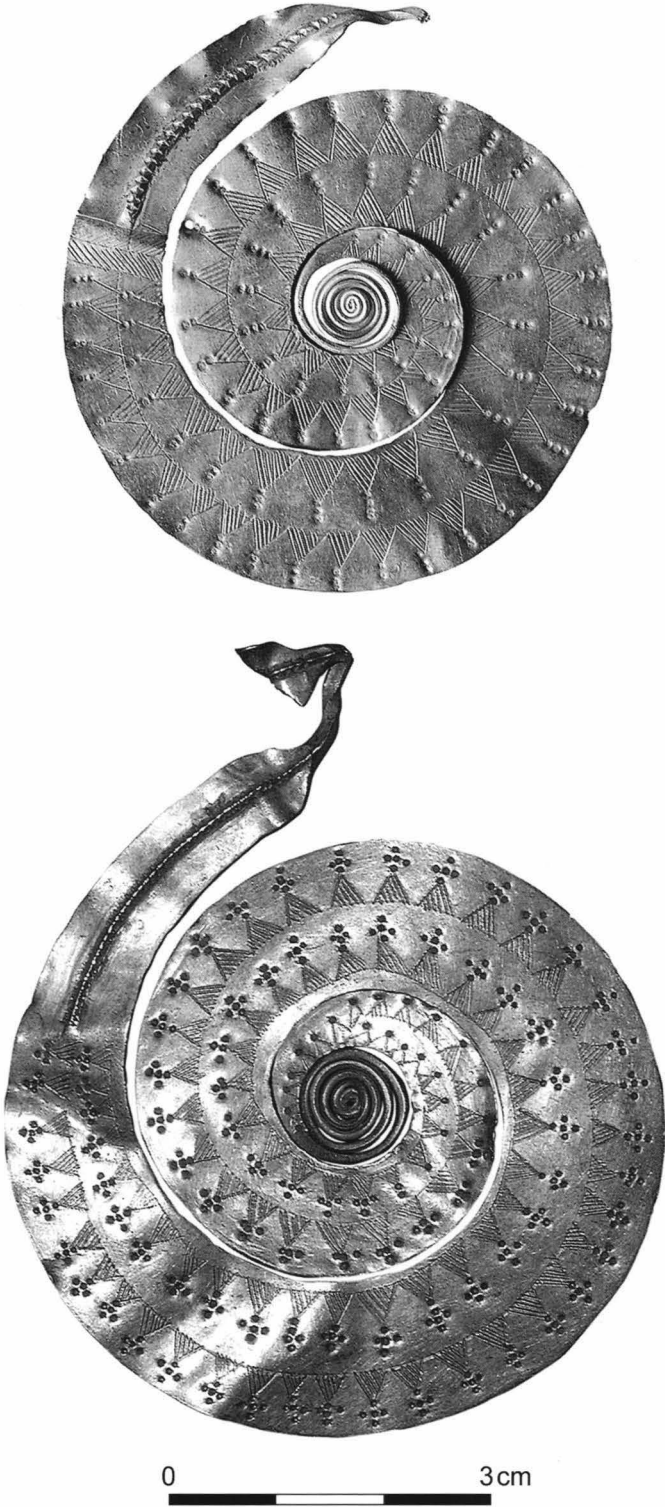


Fig. 5. Sarasău. Gold pieces.



Fig. 6. Cluj-Napoca. Wietenberg culture.



1



2

Fig. 7. 1.) Culciu Mare. Suci de Sus Culture. 2.) Someșeni.