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VELIKO LAOLE, BELOVOLDE - VINČA CULTURE SETTLEMENT IN NORTHEASTERN SERBIA

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Former investigations of the Vinča culture in Serbia, which started at the eponymous site at the beginning of this century were primarily focused on the Danube and Lower Morava valleys. The territory of the northeastern Serbia was left out of the scholars' interest. The most important archaeological works in this area were the investigations of the earliest mining and primary copper metallurgy, conducted in the seventies at Rudna Glava (B. Jovanović, 1982). The new results change considerably the image of Vinca culture and by its significance exceed previously established limited (pl. 1).

These were the reasons for the National Museum in Belgrade and the National Museum in Požarevac to initiate, in 1993, the project "Neolithic of the Braničevo region in the Morava and Mlava valleys". Within this area defined by the rivers Velika Morava in the west, Danube in the north and the ranges of Homolje and Kučaj mountains in the east, nearly ten Vinča culture settlements were recorded (D. Jacanović, 1988, 111-119; D. Spasić, 1993, 180-185). Test trenching of each site was planned and systematic excavation of the site yielding best preliminary results. During the same year test trenching was carried out at the site Konjusica, about 160 km to the south of Belgrade. In accordance with stratigraphic and stylistic and typological analyses settlement was attributed to the phases Vinča Tordos II/Vinča Pločnik I (D. Jacanović, D. Šljivar, 1994, 181-185).

The investigations of the site Belovode near Veliko Laole village, about 140 km to the southeast of Belgrade, started in the following year. The settlement has dominant and overlooking position and there are two large rivers in the close vicinity : Mlava is around 2,5 km to the east and Velika Morava about 10 km to the west (pl. 2). As this investigations revealed it seems that "mining and primary metal working of copper minerals malachite and azurite" played and important role in the life of this settlement. Prospecting of the site indicated that approximate size of the settlement was around 80 ha. Two trenches, 4 x 4 m, were excavated in the south section of the plateau.

Trench I produced large amount of material. However, neither closed associations nor features that could date the material more precisely were discovered due to the rather restricted area which was investigated. Nevertheless the stratigraphy of 2,7 m thick cultural layer was clear. Material was at first divided according to the arbitrary (excavation) levels and later distinguished in accordance with changes of the soil quality and stylistic and typological analyses. As a result, four cultural horizons corresponding to the certain phases of Vinca culture were distinguished (pl. 3).

Trench II revealed more apparent stratigraphic situation due to the discovery of one dwelling structure. This assemblage unambigously determined final, latest phase of settlement existence in this trench. Cultural layer, traced until the depth of 1,80 m, yielding abundant and various material made possible distinguishing of three horizons. Thus, concerning also the situation in trench I, the horizontal stratrigraphy was established, which was already indicated by the large size of the settlement (pl. 4).

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RELATIVE STRATRIGRAPHY AND RELATION TO THE OTHER VINČA CULTURE SETTLEMENTS

Preliminary investigations of the site Belovode yielded abundant archaeological material : about 9500 potery sherds, six complete and eight restored vessels, 25 anthropomorphic figurines, 35 clay altars (complete and fragmented), about ten tongue and shoe-last stone axes, many chipped stone blades and endscrapers, about ten obsidian blades, around twenty bone awls and spatulas, astragal amulet and two bone rings.

The content of the dwelling structure was very important as it, being closed association, provided all the elements which chronologically defined the latest horizon of this settlement.

Many lumps of copper minerals, malachite and azurite are important for the general significance of this site. Bead and pendant of malachite as well as well as traces of green pigment on almost twenty animal bones were of quite specific significance. Numerous fragments of grinding stones and a mallet, discovered on the surface, and with traces of use, complete this picture.

According to the stratigraphy, stylistic and typological characteristics of the pottery, anthropomorphic figurines and altars we were able to establish synchronism between the horizons of trench I and II. Thus four phases do the Belovode settlement, preliminary denoted as A, B, C and D, starting from the earliest phase were distinguished.

Table I

TRENCH I	TRENCH II	BELOVODE
Horizon I/1	Horizon II/1	Phase D
Horizon I/2	Horizon II/2	Phase C
Horizon I/3	Horizon II/3	Phase B
Horizon I/4		Phase A

Phase A contains the material typical for the earliest period of the Vinča culture , Vinča Tordoš I phase (pl. 5). These are biconical black burnished bowls with thin walls and decorated with intertwined fluting. Polychromy is frequently used as well as reddish slip on the conical feet of the goblets. The incised decoration consists of angular bands, dots and incised lines combined with dots. Considerable amount of poor fabric pottery sherds are decorated with organized barbotine. The anthropomorphic figurines have triangular face, incised eyes and sculptured anatomical details. The material of this horizon does not reveal the earliest elements of this phase of the Vinča culture, particularly actuely biconical, closed-type bowls. Similarities with horizon 8 of Supska which authors ascribe to the advanced stage of Vinča-Tordoš I phase are obvious (D. Garašanin-M. Garašanin, 1979, 32-34, 38, T.XXIV, 1-6; T.XXXI, 1-3; T.XXXII, 1-6; T.XXXIII, 1-5). Analogous finds were discovered at Vinca as well. Considering typology and decoration the closest analogies are with the finds from the 8 meter depth (M.M. Vasic, 1936, 21-31, T.IX-X; T.XIV-XV).

Phase B was defined according to authentic traits of archaeological material, typical of the Vinča-Tordoš II phase (pl. 6). The most characteristic are fragments of conical bowls with thickened and fluted rim, frequently with cylindric and anthropomorphic protrusions and biconical vessels with rounded shoulder and vertical neck decorated with polishing. Amphorae have globular recipient and conical neck and are decorated with ornaments depending on pottery fabric. Fluting and organized barbotine are rather frequent types of decoration. Anthropomorphic figurines have archaic traits. The face is still of triangular shape, eyes are incised or made of lentil-shaped clay bits. The altars of triangular or quadrangular shape sometimes have zoomorphic protrusions. These finds correspond to the material from horizon 7 at Supska (D. Garašanin-M. Garašanin, T.XXI, 1-7; T.XXII, 1-7; T.XXIII, 1-8; T.XXIV, 1-5; T.XXV, 1-5; T.XXVI, 2, 3; T.XXVII, 1, 6). This phase of Belovode agrees with building horizons I-IV from 1977-1978, and horizon I from 1976 of the Vinča culture settlement at Selevac (R. Tringham - D. Krstić, 1990, 295-296). The similarities are most obvious among conical and biconical bowls, certain

amphora type and two types of pots (R. Tringham - D. Krstic, 1990, fig. 9.2, Types 200, 201, 207, 208, 213; fig. 9.3, Types 304-307, 322, 335, 346, 355, fig. 9.4, Type 400; fig. 9.5, Types 500, 508). This phase of Vinča culture is approximately placed between 7. 9-6 meters at Vinca site itself (M.M. Vasić, 1936, 45-69). Some time ago M. Garašanin distinguished Gradac phase, between 6.5 and 6 meters, but also suggested the possibility of more detailed divisions within Vinča-Tordoš II phase (M. Garašanin, 1984, 61-62, fig. 37, 38). The pottery from Belovode have parallels with finds from Vinča, between 8 and 7 m only (M.M. Vasić, 1936, T.XV-XVI, fig. 60, 62, 71, 73, 88, 91, 93, 94).

Phase C at Belovode is defined by the finds classified within scopes of Vinča-Tordoš II/Gradac phases (pl. 7). Earlier, Tordoš phase is represented by distinctive shapes. Conical bowls with thickened and fluted rim, biconical with fluted net-like decoration and infrequent used of polychromy. This bowl type shows changes typical for the later, Gradac phase. They are discernible in the rim thickening and more massive shoulder shapes. The other moment is the appearance of large vessels of coarse and fine fabric with porous, smoothed surface and of gray and grayishbrown colour. this distinctive shape is represented with many finds. Decoration is more varied. For the first time there are incised hatched triangles and rows of stamped circles on the sherds of good fabric. The organized barbotine is still used on many vessels. Anthropomorphic figurines have pentagonal faces and almond-shaped eyes. The altars are of trinagular shape. One fragment has zoomorphic protrusions and animal in question has horns. The material from this horizon confirms the afore mentioned assumption of M. Garašanin. For the time being, the important fact is the parallelism of the finds from phase C of Belovode and horizon 6 of Supska which, according to quoted characteristics, correlates with advanced stage of Vinča-Tordoš II phase (D. Garašanin-M. Garašanin, 1979, 39, T.XVIII, 1-4; T.XIX, 1-7; T.XX, 1, 2, 4, 5, 9-11). The analogies with Selevac material (horizon V-VI) are obvious concerning biconical bowls with longer cylindrical neck and fluted ornament on the shoulder (R. Tringham - D. Krstić, 1990, 296, Fig. 9.3, Types 314, 320, 357, 389). There are also similarities with vessels from the settlement at Vinča. They are from the depths around 6.5 m, that is final stages of Tordoš phase (M.M. Vasić, 1936, 38-69, Fig. 56a-d, 72g-h).

According to its repertoire phase D belongs mostly to the Gradac phase of Vinča culture (pl. 8). This applies to the larger amphorae with conical neck and ribbon handles and small amphorae with globular recipient and short, conical neck. The plates with thickened rim appear for the first time. The assemblage from the house floor is of particular importance and among other shapes there was a jug with high neck and ribbon handle. Only limited number of sherds repear decorative motives and techniques; a few sherds with organized barbotine, rows of stamped circles and first appearance of fluted spiral. Anthropomorphic figurines have pentagonal face, scultpured nose and almond-shaped eyes. The altars are of triangular shape with anthropomorphic and zoomorphic protrusions. There are close analogies with jugs, pots, amphorae and altars from Rudna Glava (B. Jovanović, 1982, Fig. 119-123, 127, 129). The identical jug was found at Crnokalacka Bara (M. Garašanin, 1979, 162, 174, T.XXVIII, 3 ; B. Jovanović, 1993, Fig. 2, 3). The bowls and plates with thickened rim, fabric of many vessels, incised decoration, fluted spiral and handle shapes correspond largely to the finds from horizon 5 at Supska (D. Garašanin-M. Garašanin, 1979, 39, T.XIV-XVII). The analogous finds are plates and bowls with thickened rim, carinated bowls with concave neck and decoration from Selevac (R. Tringham - D. Krstić, 1990, 296, Fig. 9.2, Type 213; Fig. 9.3, Types 308, 335, 367, 368; Fig. 9, 8, Types 700-702). This transitional period is located at the settlement at Vinca between 6.5 and 6 meters, Material is not differentiated clearly enough and therefore analogies with Belovode pottery are not numerous (M.M. Vasić, 1936, Fig. 91, T.XXX, T.XXXI, b).

All the above mentioned comparisons and synchronisms defined relative chronology of the Belovode settlement.

The settlement at Belovode is closely connected with classical variant of Vinca culture not only according to its general characteristics but also according to its geographical position. This primarily relates to theVinča-Tordoš I phase and early Vinča-

Tordoš II. After this period there are more and more new elements which culminate during the Gradac phase. This process is evolving with permanent presence of older shapes which, having strong component of Starcevo tradition, experience continuous evolution. The early appearance of the Gradac elements at Belovode must be the consequence of the changes in the way of life of its inhabitants.

PRE-METALURGICAL ACTIVITY AT BELOVODE

Malachite and azurite of various granulations were found in all phases of the Belove site. Some specimens, bead, pendant and a few amorphous samples were metallographically studied, and these analyses are the additional part of this text.

Not getting into distant analogies (Egypt, Near East, Anatolia) we would mention parallels from the sites of the Vinča culture and related groups in its surrounding. The first appearance was recorded in the Starcevo culture settlements. Malachite and beads of this mineral were discovered at the sites Zmajovac and Lepenski Vir IIIa (P. Glumac - R. Tringham, 1990, 558). In the area of Kőrős and Criş cultures, find of this mineral, mostly in natural state, date from the same horizon (P. Glumac - R. Tringhma, 1990, 558; E.N. Cernyh, 1978, 87, 88).

As for the Vinča culture settlements, malachite was recorded at the eponymous site within horizons between 7.50 and 6.10m (M.M. Vasić, 1932, 35; B. Jovanović, 1992/1993, 6). Further investigations revealed malachite, azurite and beads made of these minerals on many Vinča sites : Donja and Gornja Tuzla, Opovo, Ratina, Stapari, Divostin, Selevac (P. Glumac - R. Tringham, 1990, T. 15.5; fig. 15.3).

In the Balkan peninsula the deposits and mines of these minerals were already known at Rudna Galva, in the vicinity of Majdanpek and at Al-Bunar in Bulgarian Trace (B. Jovanović, 1992/1993, 11; E.N. Cernyh, 1978, 72). For the territory of central Serbia and the area of Vinča culture the important deposits are, besides Rudna Glava, at Mali Sturac, where early prehistoric mining was ascertained (B. Jovanović, 1992/1993, 11). The link that was missing between Rudna Glava and Vinča culture settlements in the Morava and Danube valley is now established due to the discovery of the Belovode settlement. Favourable natural and geographic conditions of this site as well as of about then others registered along the river Mlava are evident. Close vicinity of the Danube, rivers Morava and Mlava as main communications, Homolje and Kučaj mountains in the background, with rich copper carbonate or deposits, confirm this conclusion. The last year survey of this region revealed a series of sites between Rudna Glava and Belovode on which malachite was discovered among surface finds : Debeli Lug, Tilva Roš, Kučajna, Sumorovac, Reškovica, Vitovnica.

Metallographic analyses confirmed that malchite and azurite discovered at Belovode was not metallurgically (thermically) processed. Interesting situation was in trench II where a few lumps were found in the hearth belonging to phase C of the settlement. Bead and pendant were found in the trench I at the relative depth of 2.5m and 1.8m (fig. 1). First find dates from phase A and second from phase B of internal settlement periodization. Thus cutlural and chronological attribution of both finds, one to the Vinča-Tordoš I and other to the Vinča-Tordoš II phase is indisputable.

Malachite within Vinča culture speaks in favour of the long pre-metallurgical activity and interest for various kinds of raw material. While the beads were found on many sites of this culture the situation with the pendant is entirely different. Just as an analogy we are referring to the much older specimen from the Shanidar cave in Iraq. Formal similarity with our specimen is obvious. Both objects are of high quality and indubitable functional character (P. Knauth, 1977, 25). There are also some finds from Vinča culture circle which authors attribute to this catergory of jewelry. The finds from Gradesnica in northwestern Bulgaria dating from the Chalcolithic, level C, are of slightly later date. Without precise data and analysis author mentioned a string of ten beads made of different materials (B. Nikolov, 1974, Fig. 197). The malachite pendant from Divostin dates from the Ploćnik phase of Vinča culture (P. Glumac, 1988, pl.

10). The object is no doubt made of malachite but its function is rather uncertain. It seems very probable that it is semifinished bead. Thus, specimen from Belovode is, for the time being, the only find with precisely defined stratigraphy and function (photo 1).

The other interesting thing related to malachite is the green pigment noticed on many animal bones discovered in various horizons of this settlement. M.M. Vasić claims that there was not a single artefact painted green at Vinča (M.M. Vasić, 1932, 35). J. Chapmen assumes that malachite was used as decorative pigment for architectural decoration or painting of human body (P. Glumac - R. Tringhma, 1990, 558). Some remains of copper oxide were noticed on the figurine fragments from Vinča culture settlement at Ratina (N. Ljamić-Valović - S. Valović, 1988, 23). Even if we suppose, at this stage of invetigation, that it is only coincidence or the result of certain natural process, this situation still indicates the presence of larger quantity of malachite in the settlement layers. Future metalographic and chemical analyses are expected to provide decisive results of this problem.

Mining, pre-metallurgical and metallurgical activity within this settlement was indirectly confirmed by a few more finds. First activity is indicated by the find of stone mallet. Central fastening grooves and damages of the striking platform of the tool are clearly noticeable. Numerous close analogies are known from Rudna Glava (B. Jovanović, 1982, fig. 79, 98, 132). Pre-metallurgical activity is confirmed by many grinding stones. These objects, in the various state of preservation, were discovered in all phases fo the settlement. We suppose that some of them were used for grinding malachite. According to E.N. Cernyh grind of this mineral was found at many sites (P. Glumac - R. Thringham, 1990, 558). Metallurgical activity by the finds of copper tools in the immediate vicinity of the site. A axe-adze was found on the surface, at the very edge of the site. Another axe-adze from the site Ždrelo and flat axe from Bubanj are a little bit farther (B. Jovanović, 1971, Addendum 4). Situation is similar throught the Timok oriferous basin. Finds of various copper tools are abundant, even in the hoards (D. Šljivar, 1992, 171). General situation imposes the assumption that some metallurgical centers existed in this area.

Initial investigations of the Belovode settlement yielded significant and complex results. Stylistic and typological characteristics of the material and finds confirming pre-metallurgical activities of its inhabitants brought new elements into the investigation of chronological and cultural evolution of the Vinca culture in the balkans[1].

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1 The investigations at Belovode continued in 1995. Small scale excavations were restricted to the south section of the settlement, close to the earlier trenches. Abundant and heterogeneous material and a few features (pits and habitation remains) which were discovered largely support last year's cultural and chronological determination of settlement horizons. Preliminary processing of the data is in progress but we already noticed some interesting elements for further study of Vinča culture. For the time being we would like to mention first appearance of the ornithomorphic vessels - askoi (one from closed association) and even larger amount of malachite which support our hypothesis that it was metallurgically processed at this site. We expect future investigations to provide positive results interpretation of the Vinča culture genesis.

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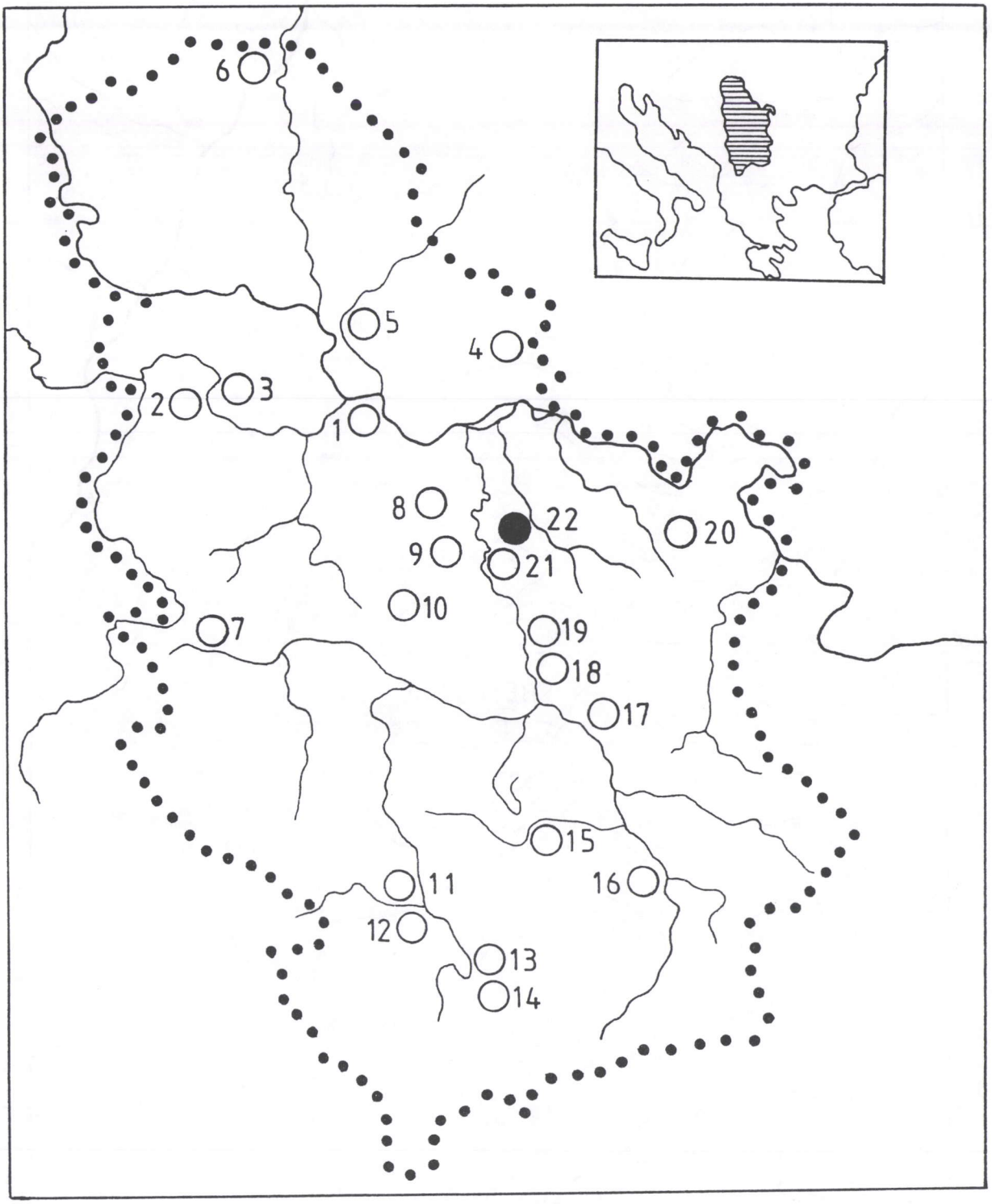

Plate 1 : Vinča Culture sites in Serbia

1. Vinča
2. Benska Bara
3. Gomolava
4. Potporanj
5. batka-Perlez
6. Biserna Obala
7. Stapari
8. Selevac
9. Medvednjak
10. Divostin
11. Valač
12. Fafos
13. Predionica
14. Gladnice
15. Pločnik
16. Gradac
17. Grnokalačka Bara
18. Slatina
19. Supska
20. Rudna Glava
21. Viteževo
22. Belovode

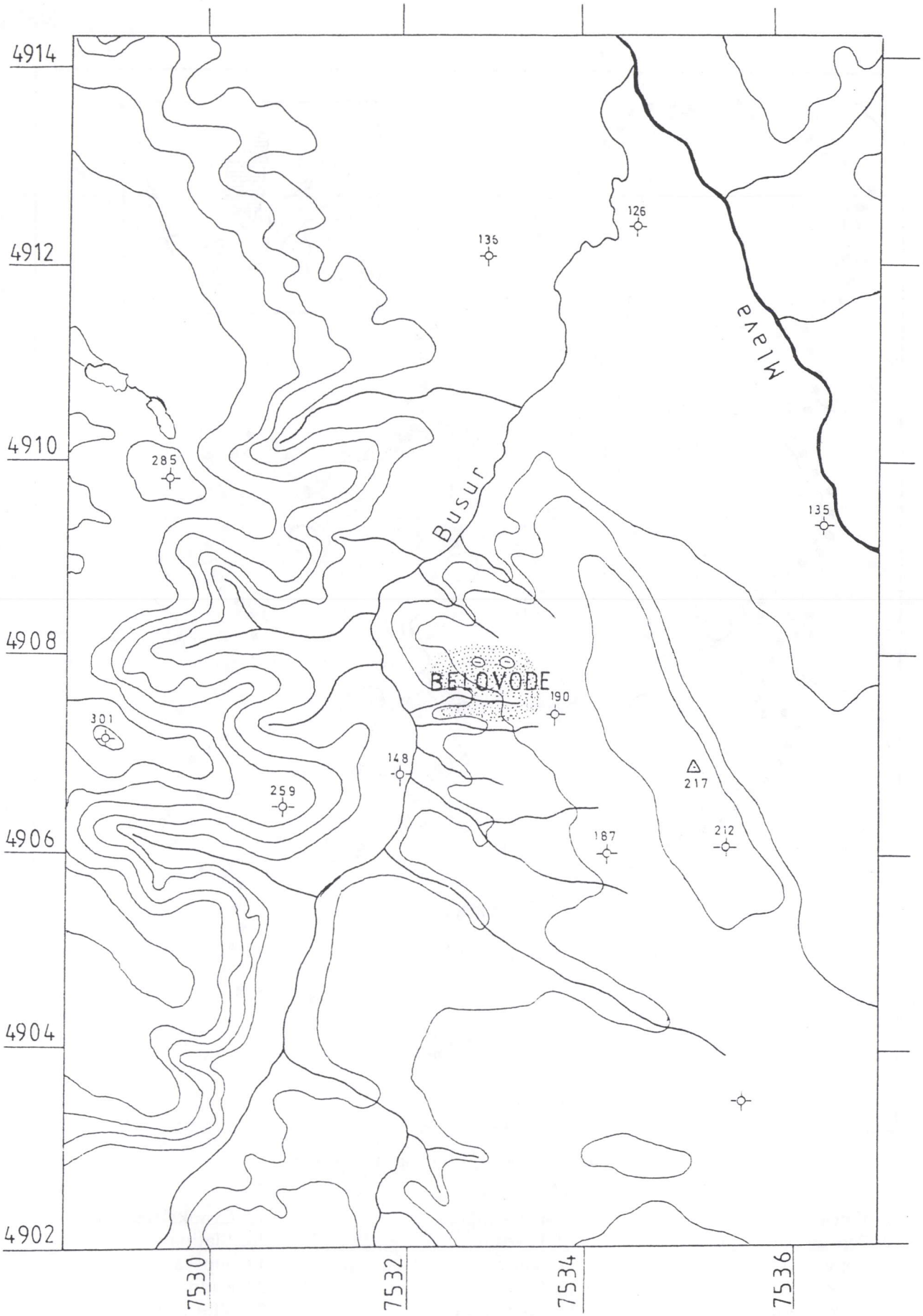

Plate 2 : Location of Belovode

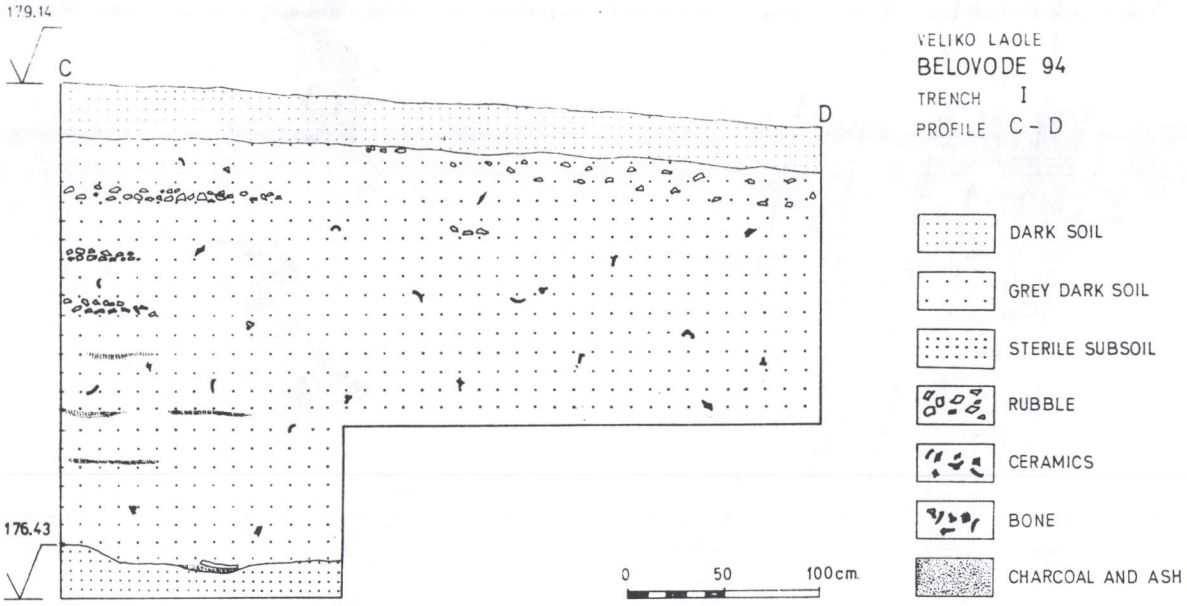

Plate 3 : Belovode : trench I, profile C-D

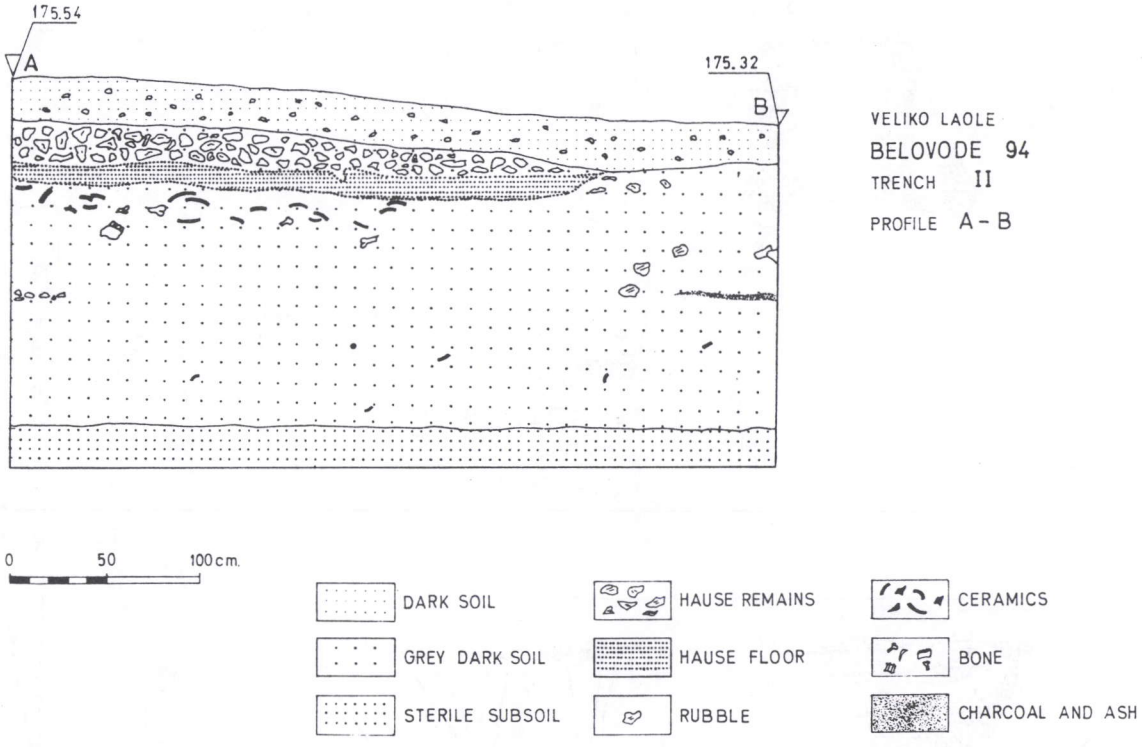

Plate 4 : Belovode : trench II, profile A-B

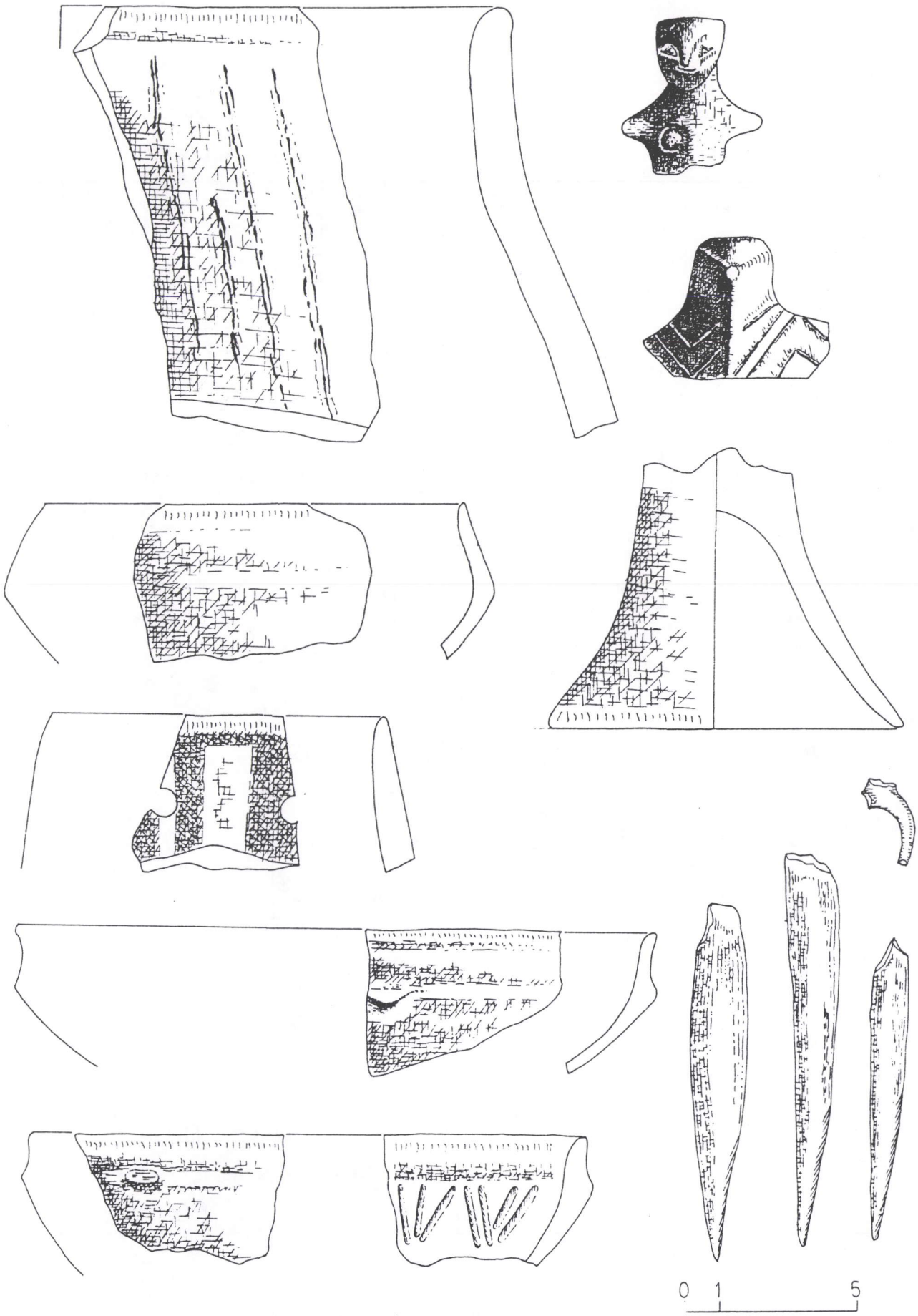

Figure 5 : Belovode, Phase A

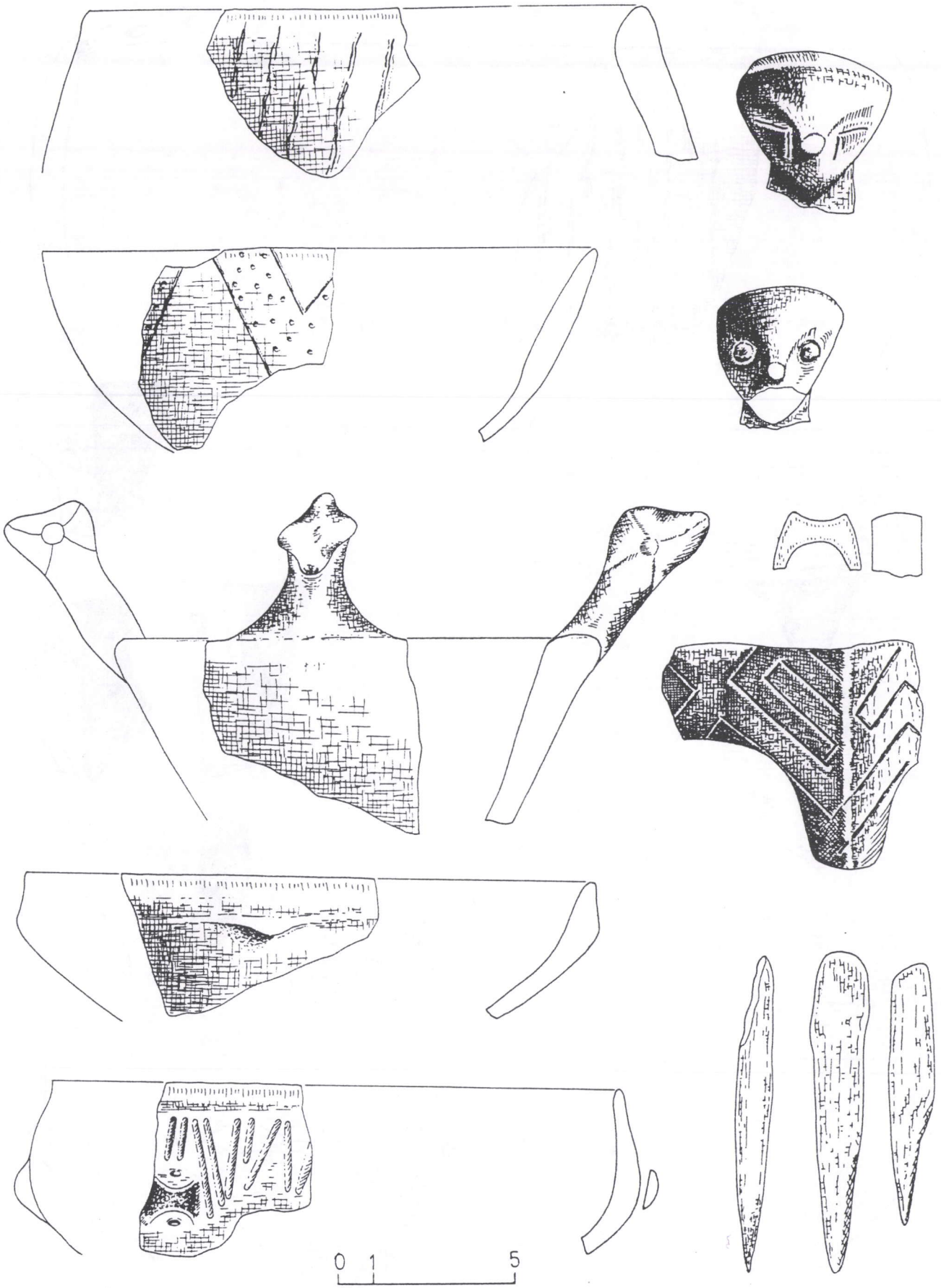

Figure 6 : Belovode, Phase B

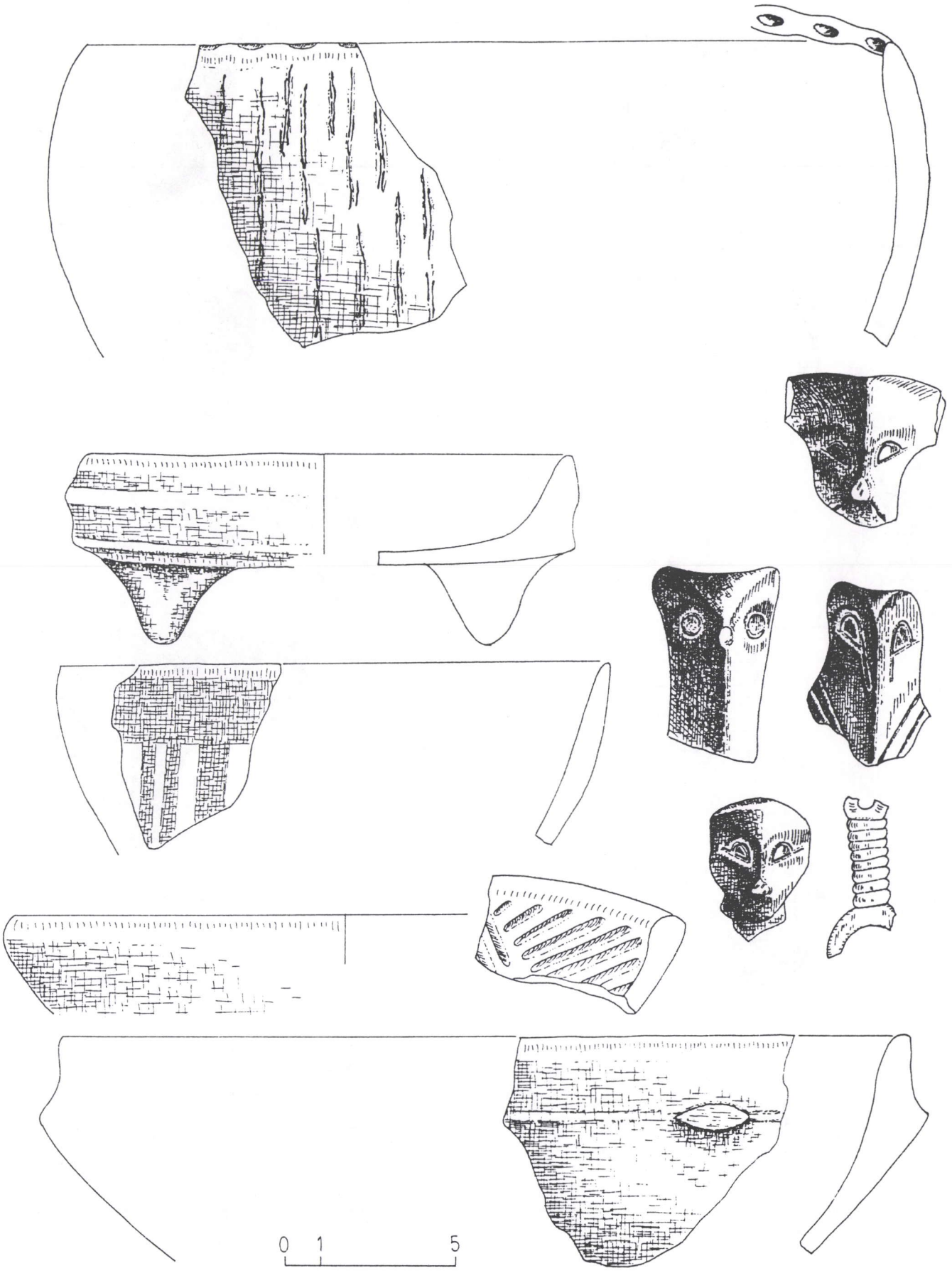

Figure 7 : Belovode, Phase C

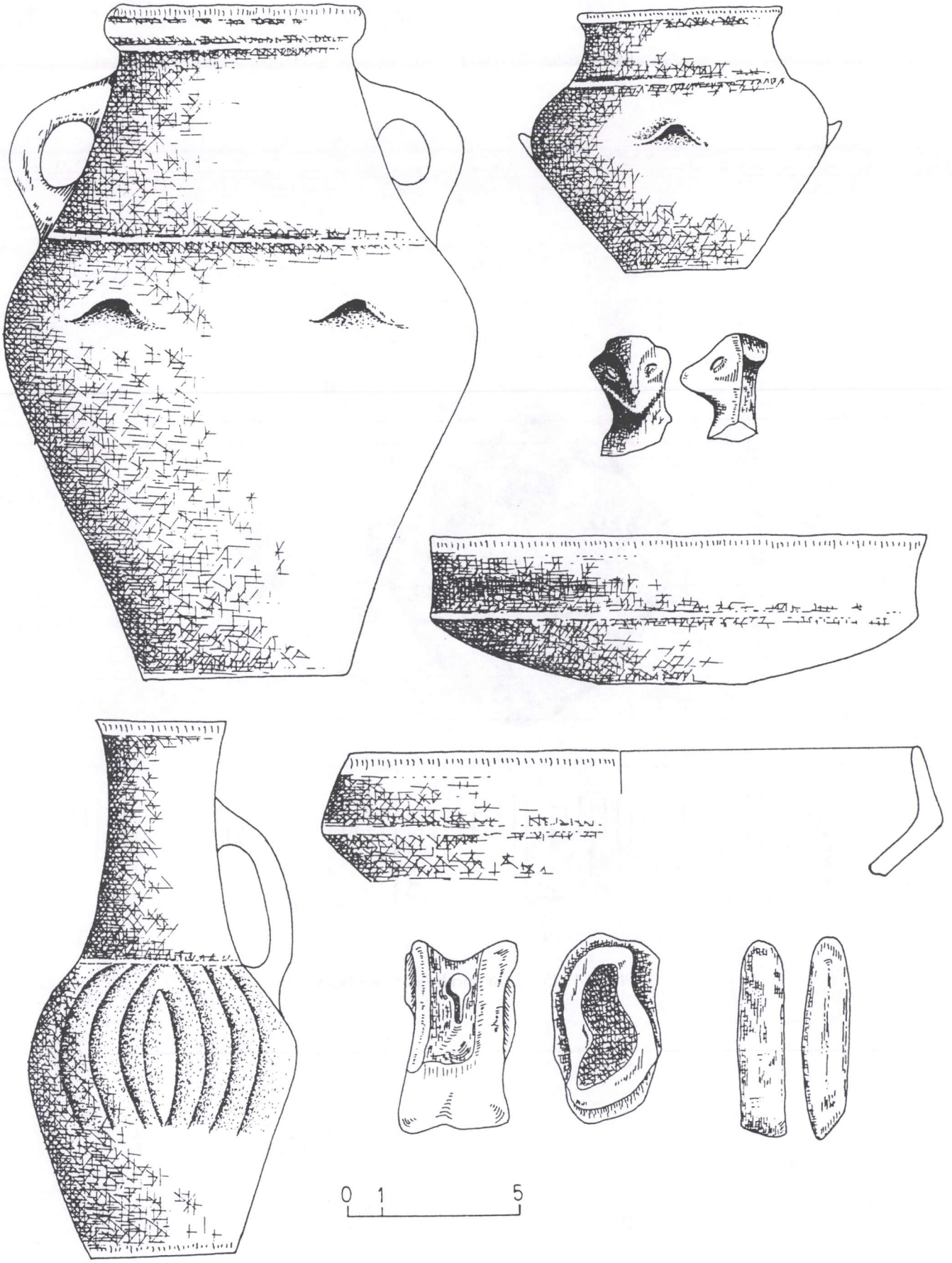

Figure 8 : Belovode, Phase D

Photo 1 : Pendant and bead from Belovode.

TABLE 2

BELOVODE	SUPSKA	SELEVAC			VINČA	GARAŠANIN	MILOJČIĆ
		Building Horizont 1977-1978		Strati. Architec Phase			
Phase A	Stratum 9 8				8m	VINČA-TORDOŠ I	VINČA A
Phase B C	Stratum 7 6	I-IV V-VI	I II	I	6,5 m	VINČA-TORDOŠ II (two phases ?)	VINČA B1 (dept. CCA 7m)
Phase D	Stratum 5	VII-VIII	III	II	6m	GRADAC PHASE	VINČA B2
	Stratum 4	IX	IV	III	4,1m	VINČA-PLOCNIK I	VINČA B2-C (dept above 5 m)
	Stratum 3 2 1		V	IV	3,48 m	VINČA-PLOCNIK IIa	VINČA C
						VINČA-PLOCNIK IIb	VINČA D