

The Yunatsite culture I: Manifestation and Chronology during Early Bronze I (In the Light of Stratigraphic, Ceramic, Radiocarbon and Archaeomagnetic Data)

Lolita NIKOLOVA (Sofia)

Introduction

In this approach the first stage of the Yunatsite culture will be argued based on the recent stratigraphic, ceramic, 14C- and archaeomagnetic data. A special attention will be given on a new evidence from the Dubene-Sarovka tell in the upper Struma valley.

Early Bronze Yunatsite culture occupied western Bulgarian Thrace, which evidence recently considerably has increased. Several recent contributions should be pointed out:

1. The renewed excavations on the Yunatsite tell in the upper Maritsa valley (Katincharov et al. 1995) gave the longest EB stratigraphic sequence in the Balkans.

2. The newly excavated Sarovka Tell near the Dubene village in the upper Struma valley (Nikolova 1994; Nikolova 1995a; Nikolova 1995b; Nikolova 1995c; Nikolova 1996a; Nikolova 1996b) documented an Early Bronze culture with similar characteristics with that of the upper Maritsa valley.

3. Important micro-regional characteristics give the excavations at Plovdiv - Nebet Tepe (Pejkov 1995), Manole (Detev 1981) and Ognyanovo (Detev and Matsanova 1977).

4. Recent archeological records infer that a peculiar culture developed in the western Bulgarian Thrace, which has been named Yunatsite culture after the eponimic site in the upper Maritsa valley (Nikolova 1995a; Nikolova 1995b).

5. Numerous 14C dates originate from different settlement horizons at Yunatsite and Plovdiv - Nebet Tepe, as well as some dates from Manole, and Dubene-Sarovka (Görsdorf and Bojadžiev 1996: 158-63; Table 2). Yunatsite and Dubene-Sarovka are archaeomagnetic dated as well (Kovacheva et al. 1995 with ref.).

It should be mentioned that the material evidence from the Yunatsite tell and Plovdiv - Nebet Tepe multi-level site is preliminary reported, as well as the excavations of the Dubene-Sarovka site including mainly the EB II levels. Despite of these facts, an initial research is possible mainly for general characteristics and for a definition of the problem of the position of the Yunatsite I culture in the Balkan Early Bronze I chronological system.

The concept of the Yunatsite culture

The Yunatsite culture term was evinced primary by V. Milošević (1949: 58) to denote the lower Bronze Age levels of the Yunatsite tell (so-called Yunatsite II in western Bulgarian Thrace). The last were explored in the course of the drilling carried out by V. Mikov in 1939 (Mikov 1940 [1995]; Titov 1995: 12-14).

In the '70s - early '90s the large-scale excavations of the Ezero tell in the eastern Bulgarian Thrace defined Ezero as an eponym of the entire EB culture from the upper Thracian plain, comprising all Bronze Age horizons (Merpert 1979). R. Katincharov attributed the upper Bronze Age levels of the Ezero tell to the Nova Zagora culture (Middle Bronze Age) and also used the term Yunatsite culture for the upper Maritsa valley development from the same period.

In his unpublished Ph.D. Dissertation (1986), K. Leshtakov starts the modern investigation of the ceramics from the EB Bulgarian Thrace. He devoted special attention to the chronological aspects of the development of the ceramic style, the comparative stratigraphy of the archaeological sites and the difference between the pottery from distinct micro-regions in Bulgarian Thrace. Independently, H. Parzinger (1993: 119-22) has created a detailed comparative-stratigraphic investigation of the EB settlements from the western Bulgarian Thrace, in his fundamental study on the prehistory of eastern Central Europe, southeastern Europe and Anatolia. K. Leshtakov and H. Parzinger definitely stressed on the peculiarity of the ceramic style of the upper Maritsa valley - in comparison to eastern Bulgarian Thrace, but they did not use the term Yunatsite culture.

The discoveries of EB settlements in the upper Struma valley in the earlier '90s and the excavations of Dubene-Sarovka tell have shown an affinity to the EB development in the upper Maritsa valley (Yunatsite, Ognyanovo, Plovdiv - Nebet Tepe). Therefore, all sites from the western Bulgarian Thrace were incorporated in re-defined Yunatsite culture (Nikolova 1995a; Nikolova 1995b; Nikolova 1996). In addition, M. Garašanin (1996) assumes in light of recent evidence that the middle Bronze Age horizons at Yunatsite and Dubene IIB (or the first and the second horizons in light of the terminology of 1995) belongs to the Bubanj II culture.

Investigation and spread of the Yunatsite culture

For the time being at least 11 settlements are known from the Yunatsite culture (Nikolova 1995a: maps 1-2):

- *Yunatsite tell*. Upper Maritsa valley. V. Mikov (1940 [1995]) initially excavated the tell in 1939. He divided the Bronze Age occupation there into two stages. 17 horizons documented N. Merpert, R. Katincharov, V. Mazanova etc. in the course of the renewed excavation at Yunatsite from 1976 till recently (Katin-

charov and Mazanova 1993; Katincharov and Mazanova 1995; Katincharov et al. 1995). V. Mazanova (1996) explicates the architectural evidence while L. Nikolova (1996) interprets the encrusted pottery and argued a three - stage periodization of the EB life on the tell. S. Terzijska (1994) works out a typology of the EB stone axes from this site. Ya. Boyadzhiev [Boyadziev] (1995) and J. Gördsdorf and Ya. Boyadziev [Boyadžiev] (1996) published available 14C data from the tell. D. Bailey (1996) interprets the settlement patterns in terms of social evolution theory. Ts. Popova (1992) and Ts. Popova and P. Pavlova (1994) publish palaeobotanical data from the tell.

- *Kapitan Dimitriievo tell.* Upper Maritsa valley. Excavations of P. Detev (1950). The EB layer occupied the uppermost levels of the tell. Unpublished.

- *Ognyanovo tell.* Upper Maritsa valley. Excavation of P. Detev and V. Mazanova (1977). Several levels of the EB were excavated there, being defined as Late Bronze Age by the excavators (see below). K. Leshtakov (unpubl. Dissertation 1986), L. Nikolova (unpubl. Dissertation 1992) and H. Parzinger (1993: 121) attributed the tell to EB or EB and MB. H. Parzinger parallels the earliest two levels with Ezero 13-10 stressing on presence of so-called Baden pitchers (Parzinger 1993: 121).

- *Plovdiv - Nebet Tepe.* Upper Maritsa valley. Excavations of P. Detev, A. Pejkov, etc. Several EB levels were documented on this naturally fortified hill (Detev 1960; Pejkov 1995). 14C dates publish Gördsdorf and Ya. Boyadžiev (1996). A. Pejkov dates the levels to later EB and to Middle Bronze Age accepted by H. Parzinger (1993: 121-22).

- *Plovdiv - Nebet Tepe Restoranta.* Upper Maritsa valley. B. Koleva (1991) has excavated a multilevel settlement at the foot of the Nebet Tepe Hill, which was probably connected to the settlement on the hill. The round-bottom cups date the site to earlier EB III.

- *Plovdiv - Yasa Tepe tell.* Upper Maritsa valley. Uppermost EB destroyed layer is evident in light of the published conical plate with encrusted ornamentation from EB II (Detev 1960b: fig. 12: 10-11)

- *Plovdiv - Filipovo.* A multilevel settlement consisted of pottery from EB III (Detev 1960a).

- *Manole tell* (former Razkapanitsa). Lower Struma valley. Excavations of P. Detev (1950b; Detev 1981). Several EB III levels were documented there and dated by P. Detev to the Late Bronze Age. Most of the published pottery shows parallels with Yunatsite III and other EB III sites in western Thrace (or Middle Bronze after H. Parzinger 1993: 122), as well as parallels with Ezero III culture are evident. Palaeobotanical data were mentioned by J. Renfrew (1973).

- *Chernichevo tell.* Upper Struma valley. Excavation of P. Detev. Unpublished. One pointed-bottom cup from this tell is illustrated in Nikolova 1996a. EB III.

- *Banya - Ploskata Mogila tell.* Upper Struma valley. Surface ceramic finds of the author in 1993. An encrusted pottery sherd with flat handle with three or more holes dates the destroyed layer to EB II.

- *Dubene-Sarovka tell.* Upper Struma valley. Excavations of L. Nikolova in 1992 and 1995-1997, as well as of A. Bonev and L. Nikolova in 1993-1994 (Nikolova 1994; Nikolova 1995a; Nikolova 1995b; Nikolova 1995c; Nikolova 1996a; Nikolova 1996b; Nikolova and Madjev 1993). The site is located in the Karlovo Lowland - from 500 to 1000 m from the left side of the Struma River and ca. 3 km from foot of the northern Sredna Gora Mountains (Plate 1) and ca. 10 km from the southern foot of the Stara Planina Mountain. The tell belongs to late Copper Age and Early Bronze Age.

Three stages were distinguished there (Dubene-Sarovka IIA-C) belonging to EB I-III. The former two stages are stratigraphically documented while the levels of the third phase were destroyed. The levels of the Dubene IIB consists of house floors, equipment (hearths, clay floors, etc.) and pits with pottery. Stones strengthened some of the walls of the wattle-and-daub-constructed houses (plate 2), especially that of the Apsis Houses from Dubene IIB2 phase (fig. 1: 6). Initially (1993 drillings) the stratigraphic sequence was divided into building horizons. In course of the excavations it was evident that the houses were reconstructed and the term horizon does not define the archaeological situation of long-term succeeded innovations. So, the layer IIB can be divided into three phases - Dubene IIB1-3 corresponding from the first to the fifth horizons from the drillings in 1993. Dubene IIB3 corresponds to the first horizon, IIB2 - to the second and third horizons, and IIB1 - to the fourth and the fifth horizons. In the other words, then followed after the control drillings excavations which confirmed completely the documented levels in 1993, but at the same time they give a possibility for the development of the documented archaeological situation.

M. Kovacheva, Daniela Jorganova and Diana Jordanova (1995) studied archaeomagnetic data from Dubene IIA and Dubene IIB2. L. Nikolova and J. Görsdorf (in print) published the first ¹⁴C data from the site from IIB1 and IIB2 phases. E. Marinova researches the palaeobotanical data (1999, in print).

- *Dubene - Popovka thin level settlement.* Upper Struma valley. Surface pottery finds from a survey of the author. EB II.

- *Karavelovo - Stenitsi settlement.* Upper Struma valley. Surface pottery finds from a survey of the author from Late Copper Age and later Early Bronze.

There is no discovered cemetery in the area of the Yunatsite culture.

In light of recent evidence, the western border of the Yunatsite culture layed in western Sredna Gora Mountain, where the bearer of the Pernik group probably occupied the Zlatitsa-Pirdop plain. Three micro-regional centers can be defined - Yunatsite and Plovdiv in the upper Maritsa valley and Dubene in the upper

Struma valley. To the north, the border of the Yunatsite culture was the Stara Planina Mountain, to the northeast upper Tundzha valley, where the contact zone between the Yunatsite and the Ezero culture is placed. Both cultures also contacted in the middle Maritsa basin (to the east of the Struma river mouth) and in the eastern Sredna Gora Mountains to the south of the Kalofer valley.

The first stage of the Yunatsite culture

The periodization of the Yunatsite culture

The periodization of the Yunatsite culture is based on the stratigraphic sequence of the EB Yunatsite tell, Dubene-Sarovka tell, Plovdiv-Nebet Tepe, Ognyanovo and Manole. Three stages in the development of the Yunatsite culture can be distinguished (table 1). The general background is an evolution of the ceramic style from channeled pottery with exceptional encrusted pottery (stage 1 - EB I) towards encrusted pottery (stage 2 - EB II) and a stage of pointed bottom cups with predominance of not ornamented ceramics (stage 3 - EB III). This development of the ceramic style is best represented in the Yunatsite tell where all of the Yunatsite culture duration is documented with the earliest initial phase as only possible exception. At Dubene-Sarovka, the EB I-II is documented by 6 to 7 building levels and the EB III level(s) were destroyed with pottery discovered in the fallow land and in pits. A model of the pottery sequence of Dubene-Sarovka IIA-B is given on fig. 1.

Stratigraphic evidence

The certain stratigraphic data from the first stage of the Yunatsite culture originate from the Yunatsite 14-17 and Dubene-Sarovka IIA.

At Yunatsite tell, the 14th horizon was documented at a depth of 4.20-4.50 m. In the central profile it is well recorded by house debris and burnt layer. According to the preliminary information, the depth of the 15th horizon was between the 4.50 and 4.75 m, and that of 16th horizon - between 4.75 and 5.10 m. The Bronze Age layers - documented till 6.20 m by V. Mikov - in the light of the new excavations reach 5.70 m depth (Katincharov et al. 1995: 15, 23, 26, 29). So, all Bronze Age layers were ca. 4.70 m thick. In comparison to the Ezero tell, the Bronze Age layers at Yunatsite are ca. 1.50 m thicker.

Of primary importance for the chronological definition of the different stages at Yunatsite are the ceramics. At Yunatsite tell the fluted ceramics typify the 17th - 15th horizons, which is emblematic of the first stage of the Yunatsite culture

(unpublished; Katincharov and Mazanova 1993). The coarse ceramics are characterized by hatches on the mouth rims of the pots and on the amphora-like vessels. A large amphora-like vessel with brown-black burnished surface and band handles was used as an urn. Popular were *askoi* with wide asymmetric and oblique cut mouth. An encrusted pottery was an exceptional element in the EB I ceramic style there (unpublished). The wattle-and-daub-build houses were included in the circle-like planning of the village. Two single inhumations in crouched position aside of adults - male and female - are an exception on the Yunatsite tell. They originate probably from the earliest horizon. At the same time, the urn inhumations of newborn babies typify Yunatsite I culture on the eponimic site.

Dubene-Sarovka is the second site belonging to the Yunatsite culture with considerable cultural depositions from its first stage of development. The layer of that stage has not been explored yet. According to the stratigraphic evidence from the southern periphery of the tell, there are at least three building levels and more than 0.20 m thick culture layer beginning at the depth ca. 1.50 m at the south periphery of the village. There the IIA level is covered by floor from earliest Dubene IIB where still the channel pottery continued along with encrusted pottery including false corded earthenware. At the southern periphery, a pit was discovered in ca. 4 m from the floor from IIA1 level. A fragment of a plate with funnel-shaped mouth, fragmented jar and fragments from a big *pithos* with arched-like handles and relief wave like ornamentation was found in (Nikolova 1996a; plate 3: 1-3). The pottery is secondary burnt, especially the *pithos*. The well-smoothed and brown surface characterizes that ceramics, as well as the fabrics are well made with some sand included.

The fine pottery from Dubene-Sarovka IIA is with black, gray and brown burnished surface. Emblematic is the channeled and grooved pottery including fragments of big jug-like vessel, plate with zigzag ornamented inner rim, bowls including with small handle (fig. 2: 1-3,4). The encrusted pottery appears as exception (fig. 1: 11). An *askos* with a black burnished surface, broad band-like handle and fluted ornamentation (plate 4). It was discovered in destruction level of Dubene IIA in the southwestern periphery of the tell along with pottery from destroyed Karanovo VI layer from Late Copper Age. The *askos* has an analogy among the pottery from the Bereket flat cemetery (Kalchev 1996: fig. 16), but no channels had ornamented the funeral ceramics of the Ezero culture.

The sherds on fig. 2 originate from the excavations in 1993. They were found out at the southern periphery (on the slope of the terrace) where the EB I levels followed the fallow land. The fragment of a jug-like vessel, a bowl with small handle and bowls with vertical channels (fig. 2: 1 [plate 5:13], 3, 4, 5) originate from a depth of 0.30 - 0.50 m under the surface (ca. 1.50 - 1.80 m from the datum). From the same depth is the fragment of handle (fig. 2: 9). From a depth of

0.40/0.50 - 0.70 m are the fragment of a small cup with high handle and the tunnel handle of bowl (fig. 2: 8). The sherds on fig. 2: 6 and on plate 5: 10 originate also from the excavations in 1993, but are without stratigraphic data. It seems to be from at a depth of 0.30-0.50 m from the surface.

At the depth of 1.73 m in sq. P12 (southwestern excavated corner) a fragment of a plate with smoothed surface and ornamented inner rim with dots and channels was found (fig. 3: 4), along with pseudo-barbotine wall of storage vessel (fig. 3: 6). The rest of the sherds from table 3 originate from destruction levels in the southern periphery and are attributed to EB I based on the parallels with stratified pottery and/or their missing in IIB levels. Also, parallels at earliest Yunatsite should be mentioned (unpublished). The sherd 1 from plate 5 is with parallels in Ezero A1. This kind of vessels with perforated holes are not popular at Dubene IIB neither IIC, so it can be attributed to Dubene IIA. The same arguments are for attribution of sherds 3 and 4 on plate 5 to IIA stage. The cup and the fragment of the plate with incised triangle (plate 5: 6-7) belongs to the earliest level from the excavations in 1993 (see Nikolova 1995a) from IIA. Typologically or with no certain stratigraphic data to this stage are attributed the sherds on plate 5: 2,5, 8. The rest of the pottery on that plate (9,11,12) originate from the excavations in 1995 at the southern periphery and certainly belong to the IIA stage. But - as at Yunatsite 14 - the bowl with small stamped dots (plate 5: 11) continued in the next level (from IIB1 stage).

It is possible EB I being documented at Ognyanovo, Plovdiv - Nebet Tepe, Manole, but the data are stil under discussion.

According to the limited published information, all documented levels from Ognyanovo belong to EB III, but it seems that the site was ground in later stage of the EB I, to which belongs the defense ditch. The last began to be filled at that point because sherds with parallels in EB I pottery from Bulgarian Thrace are documented there (fig. 4). The profile of the plate parallels well to Ezero 13 as well (Katinčarov 1975: fig. 3e). It seems that all levels from pre-EB III were destroyed, probably with exception of an small area for which channelled pottery is reported (Detev and Mazanova 1977). The *askoi* characterize Yunatsite I-II (Katincharov and Mazanova 1993: fig. 15). Also, it seems that the level with *askoi* reported as belonging to late stratigraphic horizon - is actually earlier (destruction layer). Also, there are no askoi with wide asymmetric neck and oblique cut rim at Dubene IIB-C.

The stratigraphic situation at Plovdiv - Nebet Tepe is similar (Pejkov 1995). From the exhibition of ceramic material at the Archaeological Museum in Plovdiv is evident that there exists pottery with parallels in classical Baden. It concerns an urn-like vessel with rhomb-like incised ornament over the body. Anyway, this ornament characterizes the Vučedol culture, as well (Durman 1988: 112). Of importance in this case is the personal information of the excavator A. Pejkov that

there was really one very early level, which differs from the other, along with late Copper Age pottery on the hill. A fragmented *kantaroi*-like cup is published as belonging to the 11th horizon. But typical EB II pottery from this horizon is recorded as well. The fragment with M-incisions parallels with Dubene unstratified ceramics, as well as with Ezero 12 (Katinčarov 1975: fig. 12). So, hypothetically I will define this earliest level as 11A dated to EB I. It is probable that Bln-4353 4610 ± 80 bp (table 2) also belongs to this earliest level. It is given as belonging to the 10th horizon with a depth of 3.80-3.90 m, but the next date from the same horizon and square is from the depth of 3.00 m. The terrain on the Nebet Tepe hill is characterized by a strong displacement. So, we need the plan of the excavations to confirm the reject of an eventual dating of the EB I level through this date. For me, it is beyond doubt about the existence of EB I level at Plovdiv - Nebet Tepe.

The last site with possible EB I data, is Manole. This tell includes an idol from the earliest level, which recently K. Leshtakov (1996: fig. 11: 6; fig. 5) includes in his discussion of the Thracian trade centers during Early Bronze III. But the idol with broken head, rounded upper part of the flat body with two plastic bulges for presentation of the breast has good parallels with Cernavodă III idols. At the same time, that idols are connected with Cernavodă I figurines and both genetically - with Tripolie figurines and to some extend - with Karanovo VI - Gumelnița - Varna complex.

The Cernavodă III - Boleráz idols are headless, but some of the Cernavodă III items are with broken head, as well and with represented chest (Morintz and Roman 1968: fig. 36: 12-13; fig. 39: 12, 22 and 23). The problem is not so easy to be solved, because there is no published pottery from the Manole tell, which can be dated only to EB I. Also, recently Govedarica (1997: 152, 154, fig. 4: 8) questions the dating of similar idol to Cernavodă III period from Sač-Šošari in the Drina basin. According to the stratigraphic disturbed situation, it can belong from EB III till MB I.

In light of the recent evidence, we have no exact parallels of the female idol in eastern Thrace from EB. Similar idols emerged during late Neolithic in western Thrace (Detev 1960b: fig. 34: 9), but its closest parallels originate from the Cernavodă III culture. So, I can conclude that it belongs to the earliest stage of the Yunatsite culture. But this conclusion does not decide the problem of the grounding of the settlement of Manole, because it is possible the figurine to be brought from other site if not to have being for centuries a sacral item in some household. For the time being, we can define phase Manole A in contrast to Manole I-III (or 1-6) from hypothetically Early Bronze III remaining the question open until appearance of other similar finds in Thrace.

It should be mentioned also one 14C date from Manole, Bln-813 4350 ± 100 bp. (Table 2) with calibrated values in latest fourth millennium B.C. It is reported to

being from a depth of 2.30 m, but there is detail stratigraphic sequence published, so it can be questioned to which extend the date belongs to the middle levels.

Chronology

Of primary importance are the ^{14}C dates, but for that stage we have certain dates only from the 15th horizon at Yunatsite (Table 2). They are partially problematic because the R-combine radiocarbon dating of that horizon gives values after the 29th century B.C. This dating contradicts the relative chronology of the horizon based on the channel pottery existed with parallels in the southern Baden culture. But the other conclusion follows from the chart 2. There the sequence of the radiocarbon dates from the 15th and the 13th horizons assuming a gap of 150 ± 50 years between the end of the 15th horizon and of the 13th horizon is given. In light of that chart, it is clear that the 15th horizon is well dated to the end of the fourth millennium B.C., because the 13th horizon - with encrusted pottery parallels with Dubene IIB1 and both levels correspond to Ezero 9-8. Earlier Sitagroi Va and early Vučedol belong also to this horizon. So, the end of the 13th horizon is well-dated to the end of the 29th century B.C. If it is the dating of that horizon, the chart 2 well document the dating of the 15th horizon in last case - ca. 3000 B.C. (cp. Boyadziev 1995). This is confirmed but not so expressive by chart 3 of the computing of the possibility of preceeded Yunatsite 15, where by 95.4% confidence the given year is 3018 B.C.

Therefore, the end of the 15th horizon is dated to the latest fourth millennium B.C. In light of that dating, earliest chronology of the 17th and 16th horizons is before the end of the fourth millennium B.C. This absolute dating is confirmed by the synchronization of the Yunatsite culture I with neighboured and distant cultures (Nikolova 1996a; Nikolova 1996b). Along with the 15th horizon from Yunatsite, the latest Baden culture in southern Middle Danube and the end of Sitagroi IV correspond to the end of EB I - the end of the fourth millennium B.C.

The dates from the earlier Sitagroi IV and from Ezero 13 can be used for the chronology of the beginning of the Yunatsite culture represented at Yunatsite 17, having in mind that the last horizon could precede Ezero 13 as well. Yunatsite 17-15 parallels with Ezero 13-11. It is given on the chronological annexes by H. Parzinger (1993: annex 3B) where the 10th horizon is synchronous with earlier Yunatsite 14-9 sequence. But the channel Boleraz-like ornamented band-handles are documented at Ezero 13 (Katinčarov 1975: fig. 11f). The indirect ^{14}C dates date the beginning of the Yunatsite culture in light of the recent evidence ca. 3350 B.C. (chart 4). But this dating is due to the some early dates from Ezero 13-11 while the sum-probability of the radiocarbon dating of Sitagroi IV gives the value ca. 3300 B.C. as the earliest possible dating of that phase (chart 5).

Ca. 3300 - 2500 B.C. should be accepted as a date of the beginning of Sitagroi IV because of the long stratigraphic sequence documented by the excavations. It consisted of 1.20 m thick culture layer (Renfrew et al. 1986: 182), at least five floors in ZA sounding (Renfrew et al. 1986: fig. 8.1; fig. 8: 2) or of six hearths sequence in square ROc (Renfrew et al. 1986: 205). Because of this stratigraphic evidence it seems that Sitagroi IV preceded Ezero 13 but the thickness of the culture layer is identical to that of Yunatsite 15-17. At Ezero the 11th horizon was documented at a depth of 3.20-3.40 m and the 13th horizon - at a depth of 3.40 - 3.50/3.80 m (Georgiev et al. 1979: 92-99). So, the EB I culture layer is less thick than that of the Yunatsite 17-15 and Sitagroi IV.

It is difficult to find the stratigraphic context of all 14C dates from Sitagroi IV. But the samples from ZA 21 and ZA 19 belong to the earlier phase of occupation of the tell, which I will define as phase Sitagroi IVA. Two samples originate from these levels. The date from ROc 59 is similar to that from ZA 19, but according to the stratigraphic evidence it belongs to middle levels of the fourth layer (Renfrew et al. 1986: fig. 8.14). Theoretically it can be assumed that the levels from ROc sounding preceded ZA 32, but there is no given profile of the earliest EB levels from the former drilling. Four dates originate from ZB sounding, ZB112 and ZB 108. Stratigraphic information is not published. ZB drilling was located to the west of ZA and adjoining it (Renfrew et al. 1986: 221). The sum-probability of the radiocarbon dating (chart 6) dates those levels to later fourth millennium B.C. corresponding to other dates. The earliest values of R-combine of Sitagroi IV - ZA 31/29 (earlier phase) are 3340 B.C. - 3210 B.C. (chart 7), the span in which the beginning of that stage can be assumed.

In my opinion, in light of the available information, the key of dating of the beginning of Sitagroi IV is the sequence program of Oxcal 3.0 (chart 8). According these data, the earliest dating of the burning of the Apsis House from Sitagroi Va is ca. 2900 B.C. This date is too early for the end of that (later) phase of Sitagroi Va, because the pottery (Renfrew et al. 1986: plate XCVII: 9) parallels with classical Vučedol, later Pernik II group, Dubene IIB2, etc. So, ca. 2800?-2700/2600 B.C. is the comparative dating of the house, which correspond to 68.7% confidence of the values of Bln-877 (4170±100BP) - 2880 B.C. (68.2%) 2610 B.C. The approximately thickness of the Sitagroi Va level is 1 m (Renfrew et al. 1986: 182). So, the earlier phase dated by Bln-782 should be not more than 200-300 year earlier and its end can be well dated ca. 2900 B.C. From this point of view, the beginning of Sitagroi Va is ca. 3000 B.C. Having in mind that there is no hiatus between Sitagroi IV and Sitagroi Va, we should take into consideration only the gap between earlier Sitagroi IV and the beginning of Sitagroi Va reflected in the stratigraphic layering including not more than two levels. In this case, the end of Sitagroi IVA should be dated not earlier than 3200 B.C. At the end, the begin-

ning of the phase is approximately equal with the earliest values on the chart 7. But having in mind the stratigraphic situation, the other dates and the late value of Blñ-773, ca. 3300 B.C. - 2500 B.C. as a dating of the beginning of the Sitagroi IV seems most probably.

From stratigraphic and ceramic point of view, to this period should be dated the Dikili Tash IIIA levels ceramically argued by M. Sfériadès (1996).

According M. Kovacheva et al. (1995) it is possible Dubene-Sarovka IIA to have been preceeded Yunatsite 17. But stratigraphic, typological and comparative data are in favor for synchronization between Dubene-Sarovka IIA and 17-15. But Blñ-4353 date from Plovdiv - Nebet Tepe (chart 9) gives very early calibrated values. If the date originates from the earliest level but not from the 10th horizon, it should date the beginning of the Yunatsite culture. It can be synchronous with earlier Cernavodă III and earlier Boleráz, but because it is only a single date, the Ezero 13 block of dates should be reminded which also includes one similar date, but all other are with later values. Anyway, there is no reason to exclude the possibility that the southern Balkans was a part of the Balkan EB culture block and the beginning of the EB I in that region coincide with the northern Balkan processes. It can be an uninvestigated stage of the Ezero and Yunatsite cultures assumed as well. The recent evidence from Plovdiv - Nebet Tepe questions the beginning of the Yunatsite culture as documented on the eponimic tell, but that data as that from Manole are under discussion. This possible dates the beginning of the Yunatsite culture (chart 10), but we need an additional information for more precise conclusions. Similar conclusion infers the chart 11 of EB I dating of the southern Balkan Early Bronze Age.

In light of recent evidence, it is difficult to assume an inner periodization of the Yunatsite culture I. It is possible according part of the unpublished pottery of the Yunatsite tell to divide the 17th horizon as an end of the earlier stage of genesis of that culture. The similar situation is visible in the material of Ezero 13-12 where the 12th horizon consists of dot encrusted pottery with parallels in classical Baden. If this is the case, this earlier phase, to which probably also belongs the pit from Dubene IIA with Cernavodă III type of plate, should correspond to latest Cernavodă III and later Boleráz. On the other hand, Yunatsite 16-15 and later Dubene IIA should be paralleled with classical Baden, Orlea - Sadovec and Coțofeni I. The other possibility is all levels from recently existed EB I sites from Yunatsite culture I to be synchronized with Baden II-III.

The beginning of the second stage Yunatsite culture parallels with the beginning of the EB II horizon of the encrusted pottery (Sitagroi Va - Troy I - Ostrikovac Ib - Coțofeni II - Kostolac), which is dated to ca. 3000 BC (cp. Maran 1998: table 82, see above). So, in prospective plan, the dating of the end of the EB I and of the Yunatsite I culture is confirmed by that horizon.

Conclusions

In light of recent evidence the cultural definition and the chronology of the EB I culture in western Thrace as the Yunatsite culture is possible. The only archaeological records for EB I derive from settlements. The certain data with stratigraphic information originate Yunatsite (17-15) and Dubene - Sarovka IIA. At the same time - stratigraphic, typological and 14C data exist from other sites - Plovdiv - Nebet Tepe, Ognyanovo and Manole. A problem arises of existence of EB I records there.

The emblematic pottery of the Yunatsite I culture is the channel decorated ceramics. Amphorae, big pithoi, jar with carinated profile, plates with funnel like shaped mouths, conical plates with flat and thicken from the inner site of the wall rim, askoi and the cups with high handles are typical of that stage pottery. The encrustation appears as an exception. The dot ornamentation was also popular. As an exception, pseudo-barbotine ornamentation is documented.

The absolute chronology of the Yunatsite I culture is based on the 14C dates from Yunatsite 15 and indirect dating based on the comparison with Ezero 13-11 and Sitagroi IV as the most close comparable sites. The interpretation of the data from Yunatsite 15 infers that the chronology of the end of the horizon is at the end of the fourth millennium B.C. The beginning of the Yunatsite culture in light of recent evidence is dated ca. 3300 - 2500 B.C. The Yunatsite I culture parallels with Coțofeni I, Orlea-Sadovec and later southern Baden and their synchronous cultures. It is possible for the earliest level to correspond to latest Cernavodă III and latest Boleráz as well.

Lolita Nikolova, Ph.D.
Prehistory Foundation - Sofia, Bulgaria
lnikolova@hotmail.com

Table 1. Periodization of the Yunatsite culture.

<i>Stages of the Yunatsite culture</i>	<i>Stratigraphic sequence</i>
First stage (EB I)	Yunatsite 17-15, Dubene – Sarovka IIA, earliest Ognyanovo A, Plovdiv – Nebet Tepe, Manole
Second stage (EB II)	Yunatsite 14-9, Dubene – Sarovka IIB, earlier Plovdiv – Nebet Tepe, Plovdiv – Yasa Tepe, Ognyanovo B
Third stage (EB III)	Yunatsite 8-1, Dubene – Sarovka IIC, later Plovdiv – Nebet Tepe, Ognyanovo C, Manole I, Chernichevo, etc.

Table 2. 14C data from the EB I - Yunatsite culture I sites including the discussed data from Plovdiv - Nebet Tepe and Manole. H. - Horizon. References: Görsdorf and Boyadžiev 1996: 158-59, 162-63.

Site	Lab., Sample No. and kind	bp	BC 68% confidence	BC 95.4% confidence	Comments
Yunatsite 15 -4.66 m House 31	■Bln-3675	4280±60 bp	3030-2700	3100-2660	Parallels with the relative chronology
Yunatsite 15 -4.64m House 34	■Bln-3677	4080±70 bp	2870-2500	2880-2490	Later than the relative chronology
Yunatsite 15 -4.64 House 34	■Bln-3678	4050±50 bp	2860-2490	2870-2460	Later than the relative chronology
Yunatsite 15 -4.66 m House 31	■Bln-3676	4030±70	2860-2460	2880-2390	Later than the relative chronology
Plovdiv- Nebet Tepe H. 10, Sq. L5 -3.80-3.90 m	□Bln-4353	4610±80	3510-3130	3650-3000	Not complete data
Manole H. 4, -2.30m	■Bln-813	4350±100	3300-2750	3350-2650	Earlier than the given stratigraphic depth

■ grain; □ charcoal;

Table 3. Synchronization table of the EB I Yunatsite culture I sites with principal neighbor cultures.

EB I	Western Thrace	Eastern Thrace	The Northern Aegean	Southern Middle Danube	Middle and Upper Struma	Velika Morava Valley
3000 ↓	Y14 DIIB1	E 10	SVA1 DT IIIA	Kostolac	RV 3 ↑	O Ib
3100	Y15 DIIA1	E 11	S IVB DT IIIA	Baden III		O Ia ↓
3200	Y16 D IIA2 Y17 D IIA3 ↓ pit	E 12-13 ↓ GD ↓	S IVA ↓ DT IIIA	Baden II	RV 4 K IIIA ↓	
3300		?		Boleráz ↑	RV 5	
3400	?	?	?	Boleráz		Bubanj Ia
3500	?	?	?	?	?	?
3600	?	?	?	?	?	?

Y - Yunatsite, D - Dubene, E - Ezero, GD - Golyama Detelina, S - Sitagroi, DT - Dikili Tash; O -Ostrikovac

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GNMP	Godishnik na Narodniya Muzej Plovdiv.
GPNBM	Godishnik na Plovdivskara Narodna Biblioteka i Muzej.
IAI	Izvestiya na Arkheologicheskiya Institut.
IMYUB	Izvestiya na Muzeite v Yuzhna Bulgariya.
PZ	Prähistorische Zeitschrift.
RPRP	Reports of Prehistoric Research Projects.

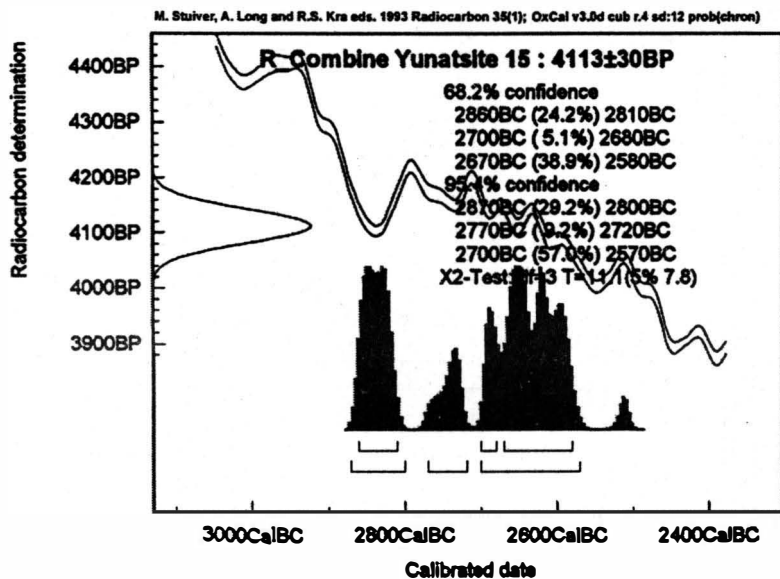


Chart 1. R-combine probability for radiocarbon dating of the Yunatsite 15 based on 4 ^{14}C data.

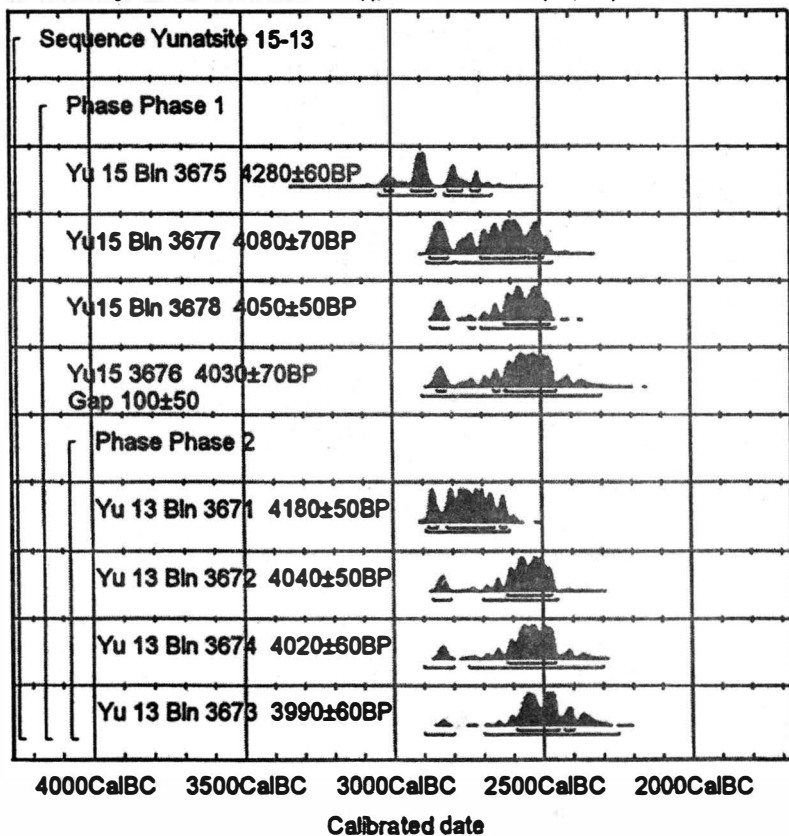


Chart 2. Yunatsite 15-13 sequence based on 7 14C data.

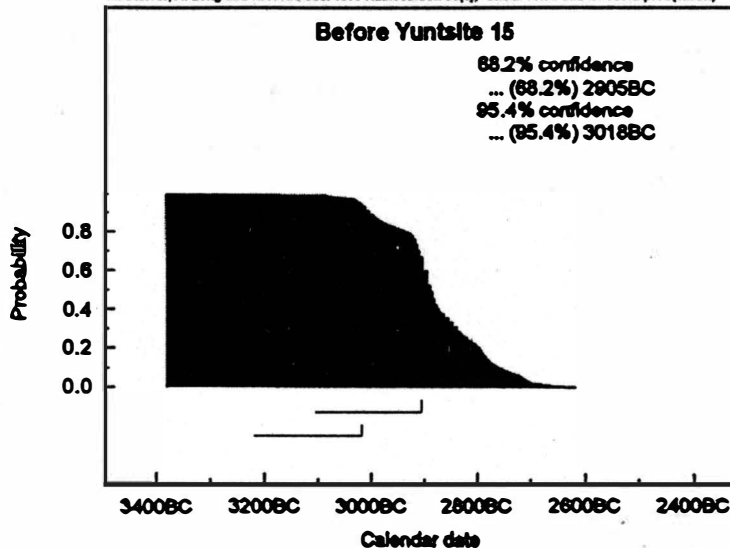


Chart 3. The computing of the possibility of calculates the probability of any given year preceded Yunatsite 15.

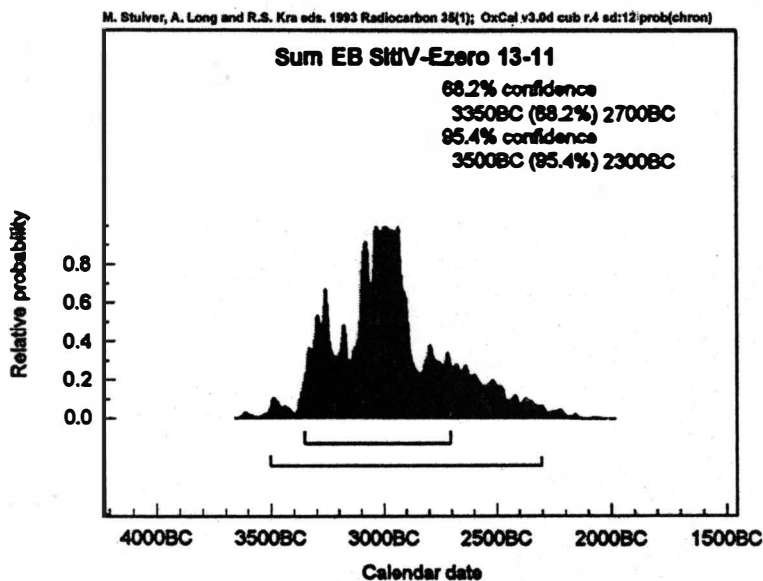


Chart 4. Sum-probability of radiocarbon dating of Sitagroi IV and Ezero 13-11. EB I.

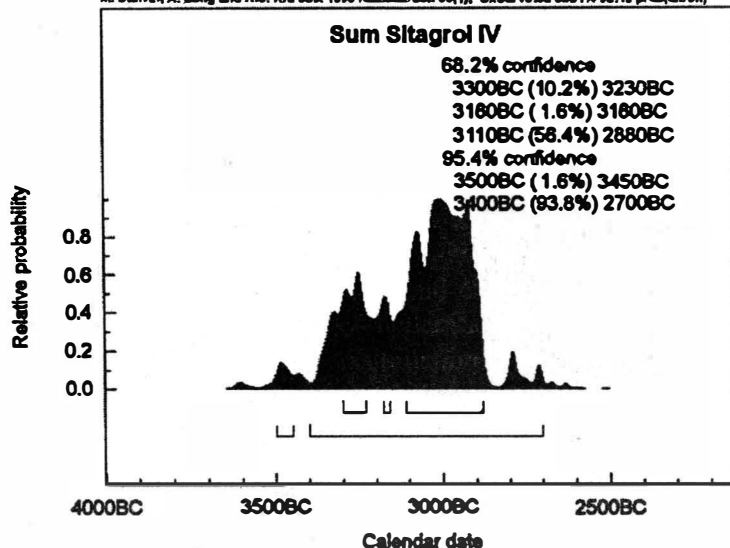


Chart 5. Sum-probability of radiocarbon dating of Sitagroi IV.

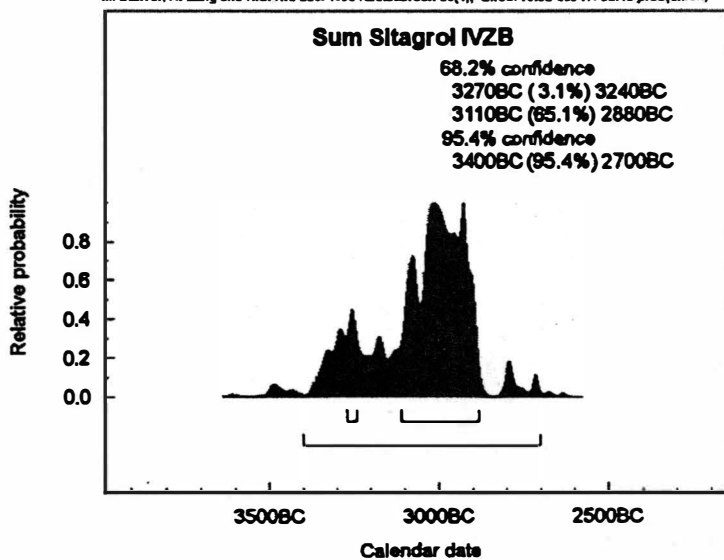


Chart 6. Sum-probability of Radiocarbon dating of Sitagroi IV - SB112-108.

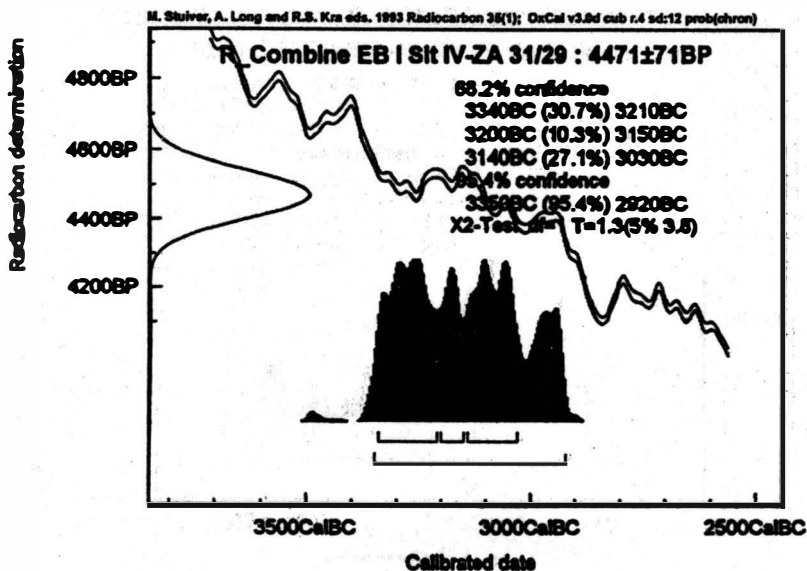


Chart 7. R-combine dating of Sitagroi IV-ZA31/29.

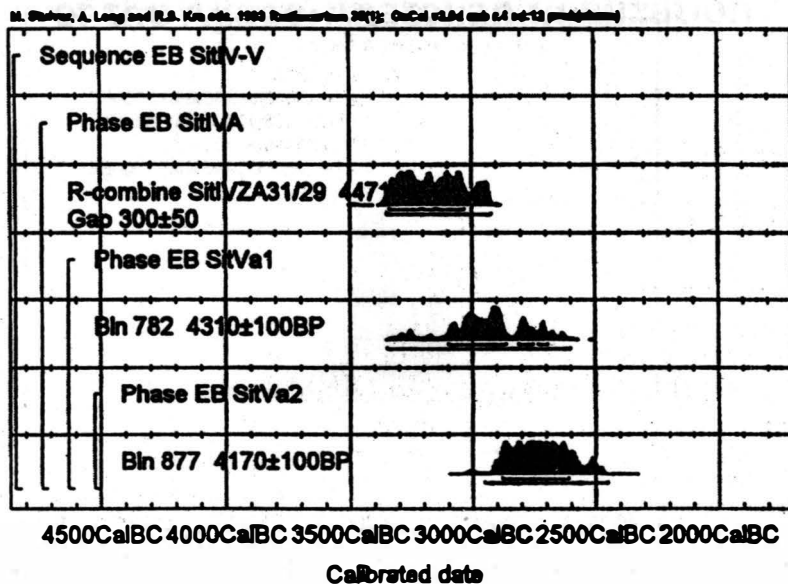


Chart 8. Sequence in the radiocarbon dating of Sitagroi IVZA31/29 and Sitagroi V phases.

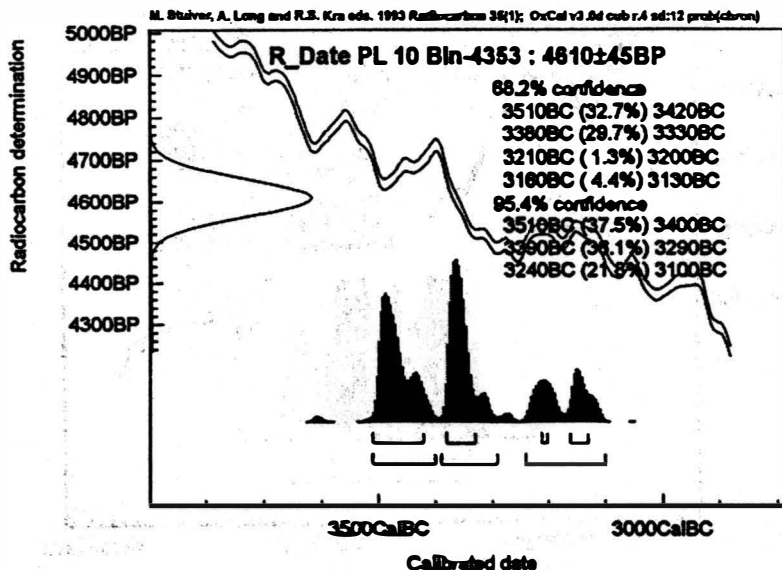


Chart 9. Calibrated date from Plovdiv - Nebet Tepe.

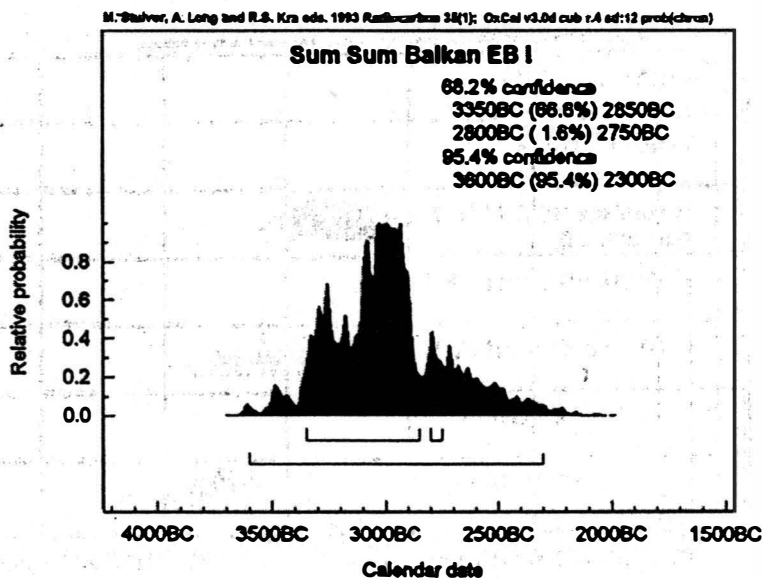


Chart 10. Sum probability EB I (Baden, Ezero 13-11, Yunatsite 15 and Sitagroi IV). N=29

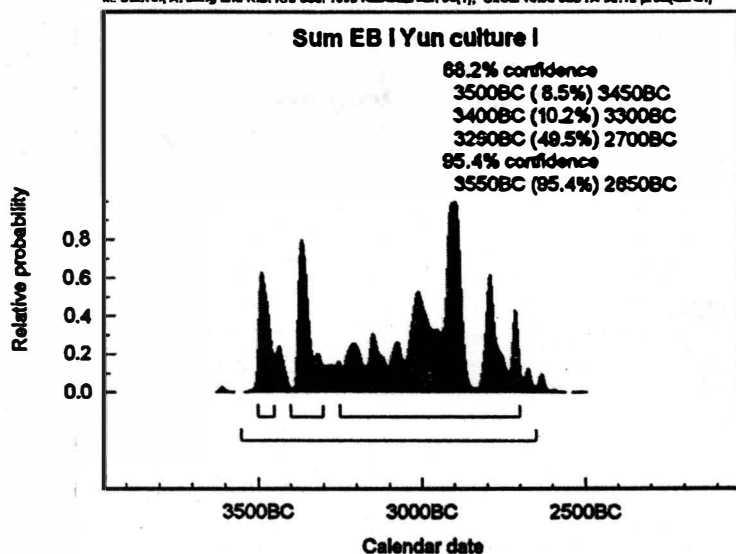


Chart 11. Sum probability for dating of the Yunatsite I culture based on data from Yunatsite 15, Plovdiv - Nebet Tepe and Manole. n=3.
See the discussion in the text.

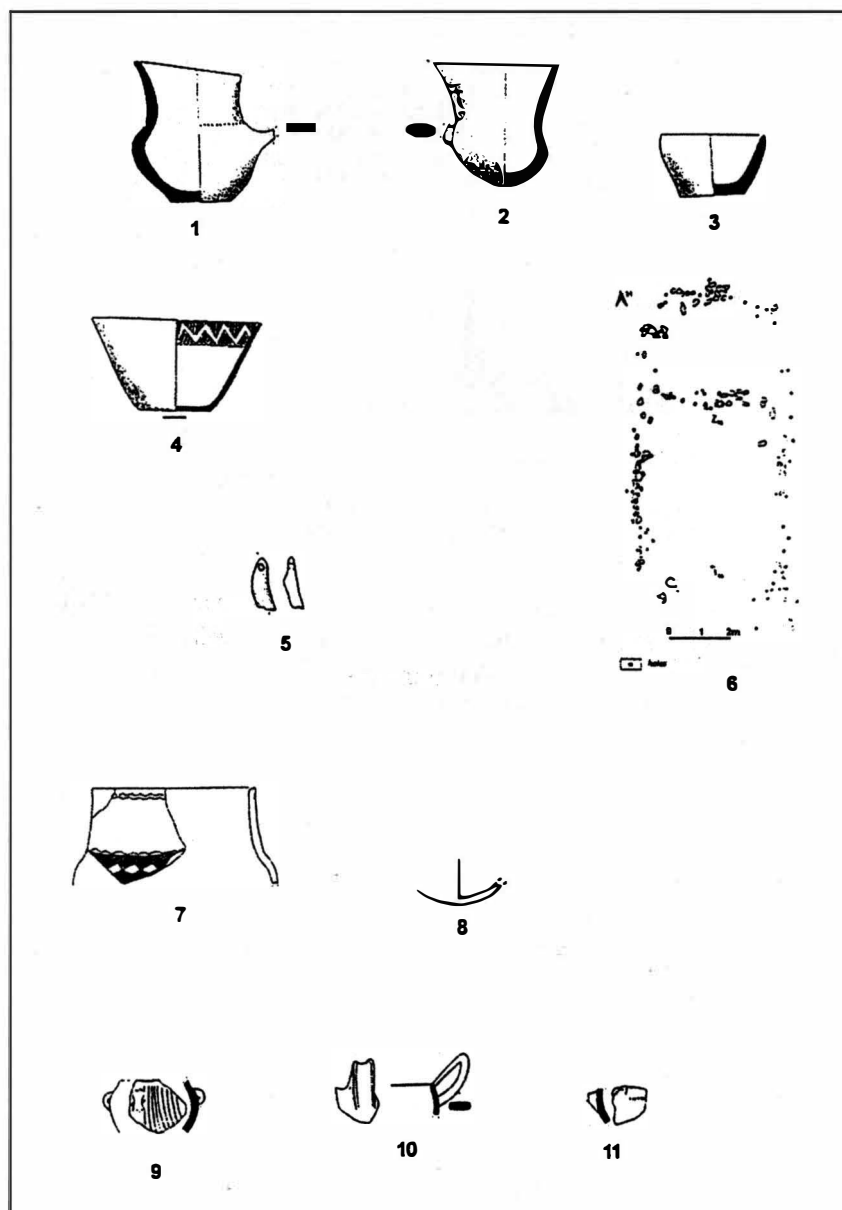


Figure 1. Stratigraphic sequence at Dubene IIA - IIB1-3 . Early Bronze I-II.
Yunatsite culture I-II.

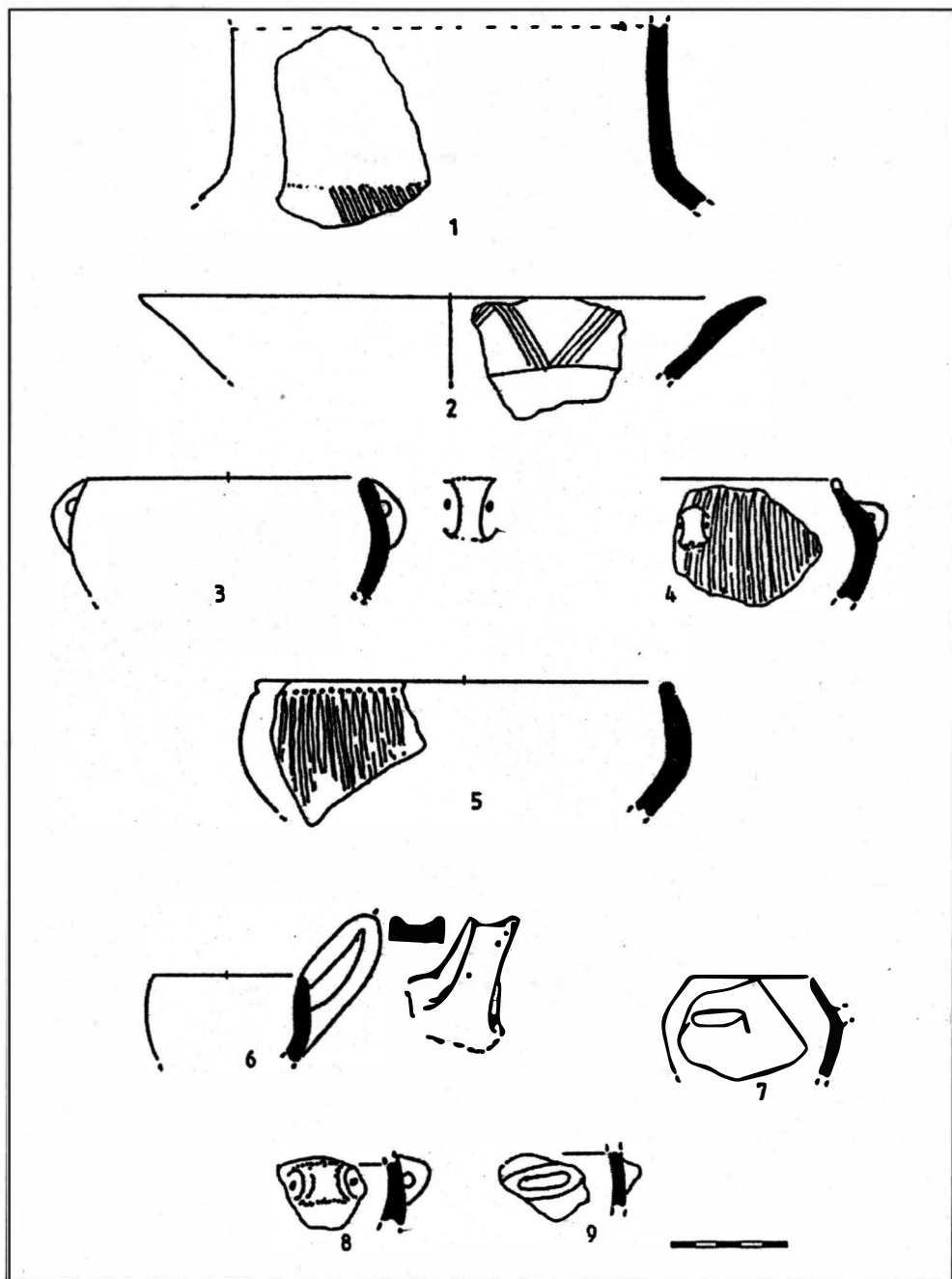


Figure 2. Pottery from Dubene-Sarovka HA. Early Bronze I. Yunatsite I culture.

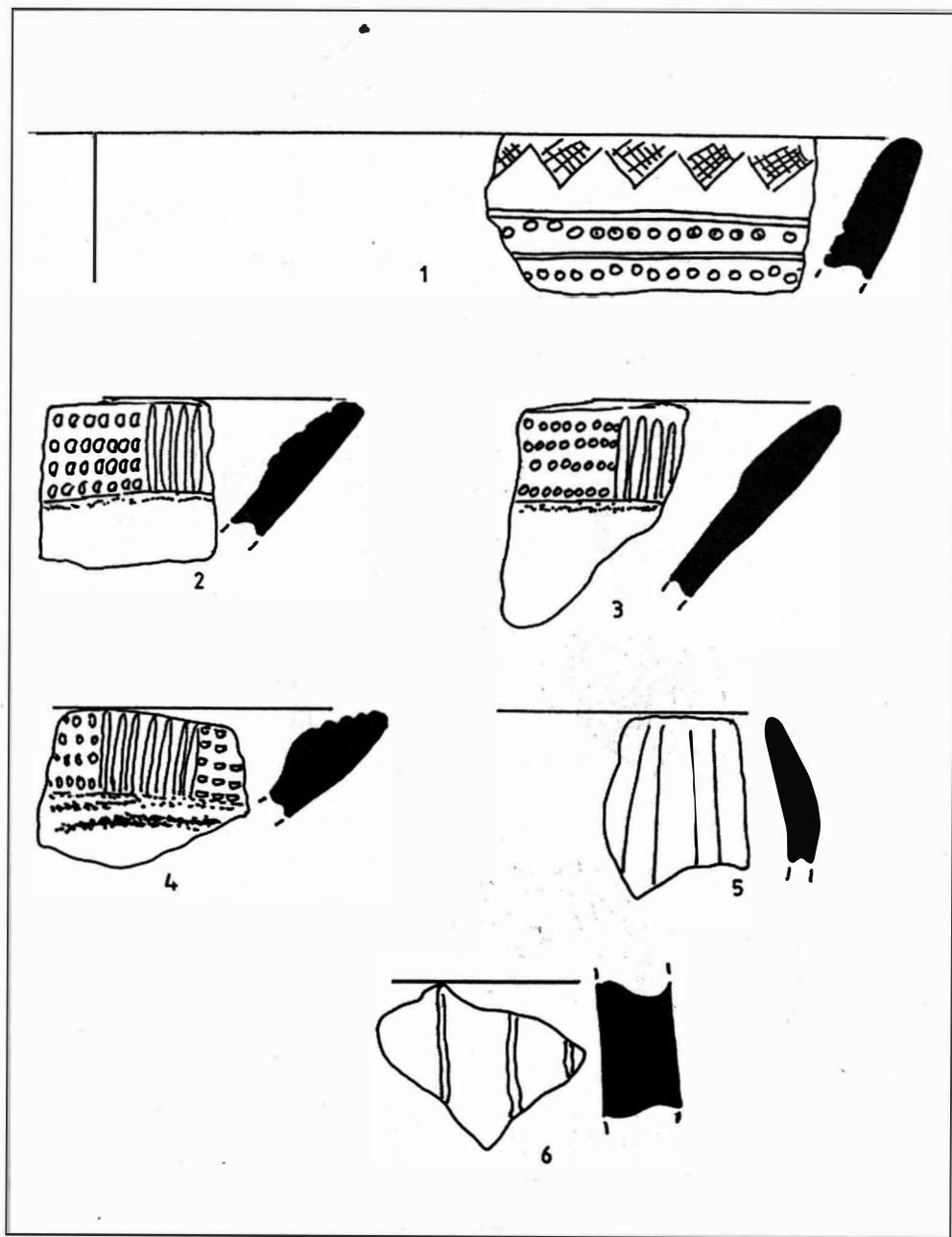


Figure 3. Pottery from Dubene-Sarovka IIA and fallow land. Early Bronze I. Yunatsite I culture.

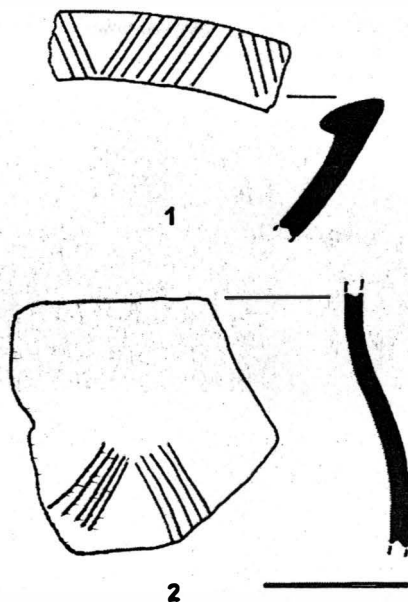


Figure 4. Pottery from Ognyanovo ditch.

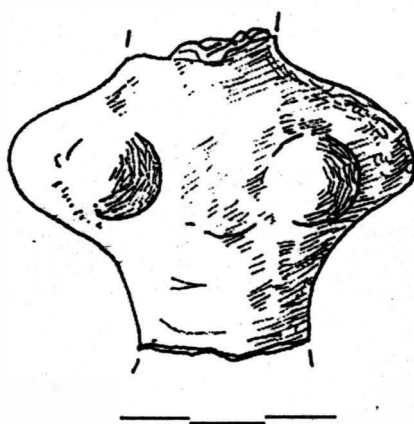


Figure 5. Ceramic flat female idol with broken head
(after P. Detev 1981 and K. Leshtakov 1996).

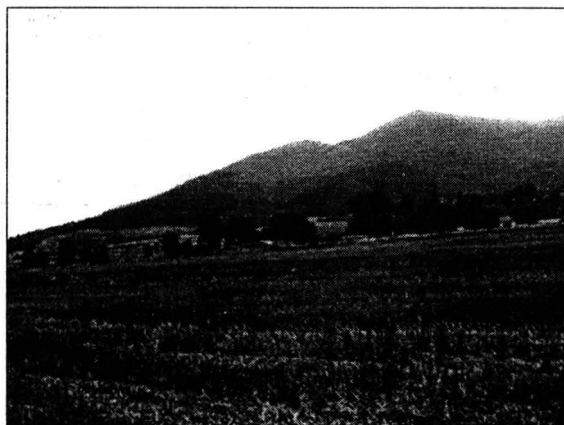


Plate 1. The Sredna Gora Mountains in the Karlovo Districts. The landscape on the right side of the Struma River.



Plate 2. The Dubene - Sarovka excavated site in 1996 visited by the participants in the seminar of Dr. Mark Stefanovich at the American University of Blagoevgrad (Bulgaria). In the middle - Prof. M. Garašanin, Dr. D. Nikolić and Mr. L. Bukvić. To the right - Prof. N. Tasić, Dr. M. Stefanovich, Dr. M. Gumă, etc.

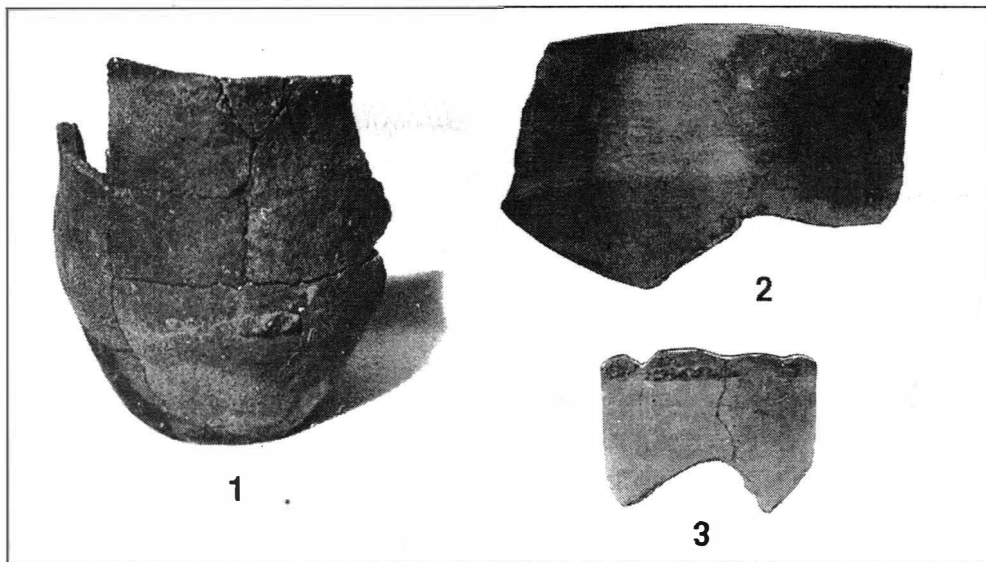


Plate 3. The pottery from the pit No. 2 from Dubene - Sarovka IIA (excavations 1995). Fragmented jar, a fragment of plate with funnel shaped mouth and of pithos with big cylindrical neck and relief ornamentation.
Early Bronze I. Yunatsite I culture.

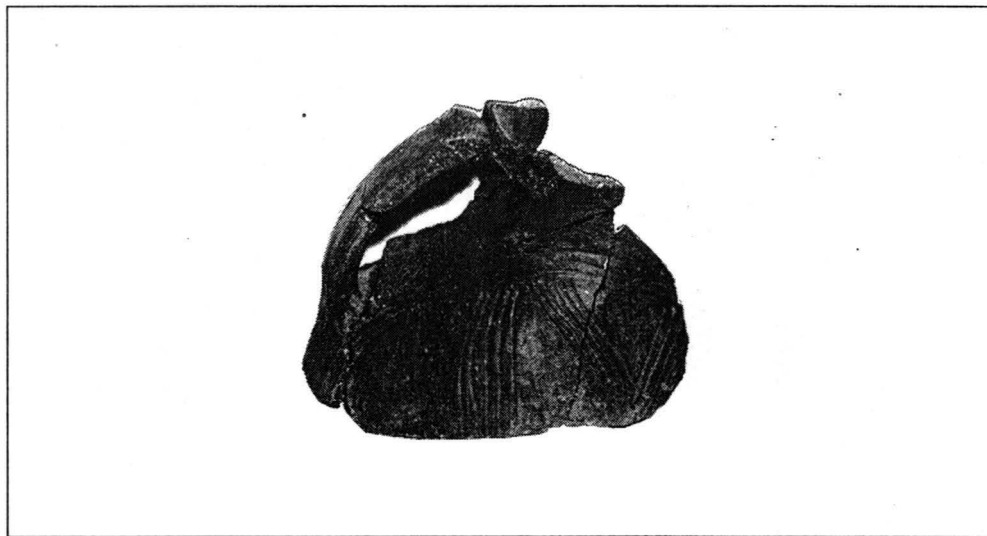


Plate 4. A fragmented askos with channel ornamentation from destroyed level of Dubene - Sarovka IIA in the southeastern periphery of the site. Early Bronze I.
Yunatsite I culture.

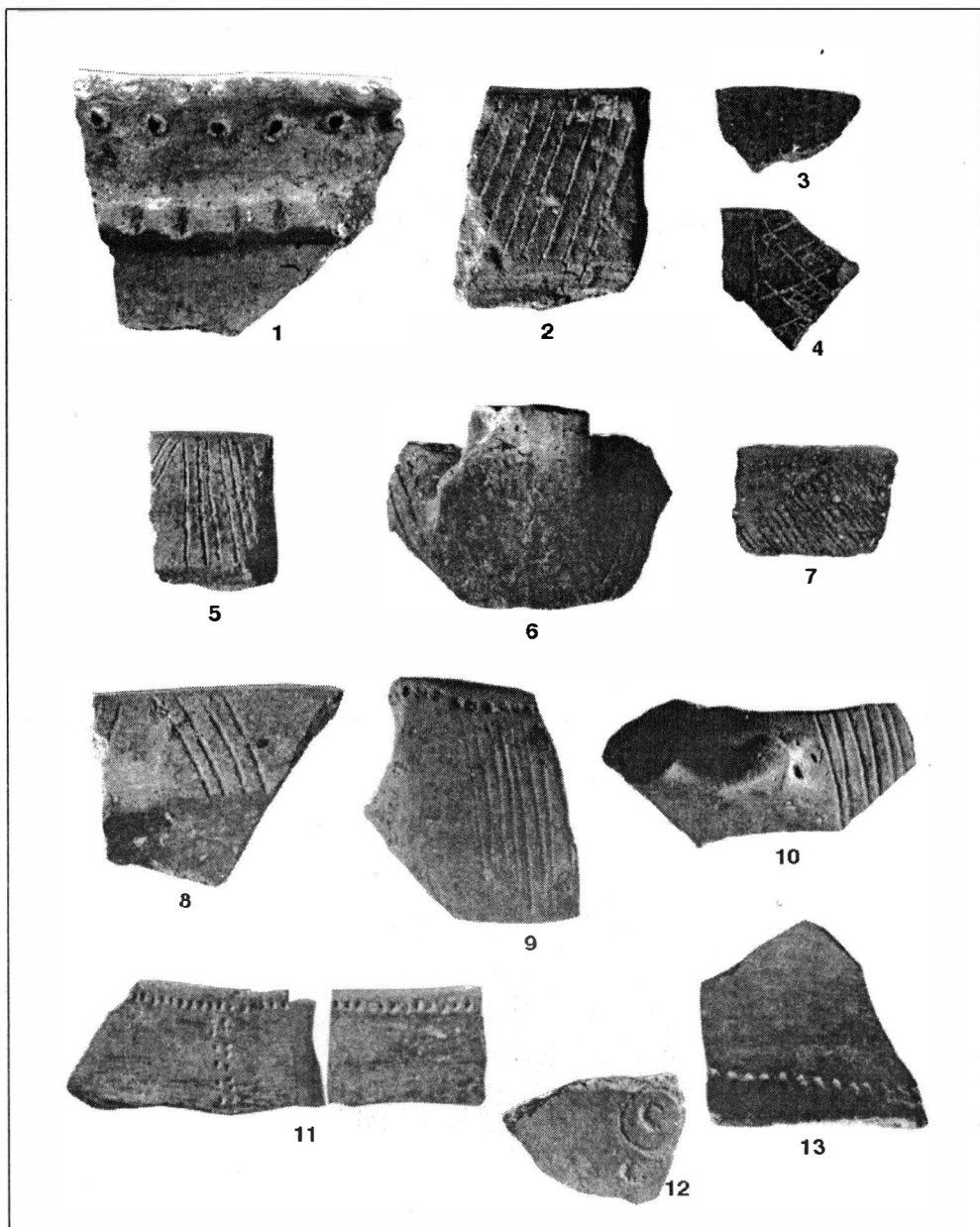


Plate 5. Sherds from Dubene - Sarovka IIA levels and from fallow lands with parallels in Early Bronze I pottery. No. 9 = fig. 2: 5, No. 12 = fig. 2: 1. Some of the sherds are with a graphic reconstruction in Nikolova 1995a.