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# THESPROTIA EXPEDITION III LANDSCAPES OF NOMADISM AND SEDENTISM



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Cover: The Bronze Age site of Goutsoura seen from the south. Photo: Björn Forsén

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# Small Finds from Bronze Age Goutsoura

Aristeides Papayiannis

In this chapter a selection of the better preserved small finds from Goutsoura is presented. The site was first settled during the Early Bronze Age (EBA) period, more exactly from ca. 2900 until 2400 BC. After a short hiatus the site was used again, mainly as a cemetery, from the Middle Bronze Age (MBA) through to the end of the Late Bronze Age (LBA), i.e., from ca. 2000 until 1100 BC.<sup>1</sup> Most of the small finds originate from the EBA layers, although a handful can be assigned to the later phases of the site.

## Bone objects

In total, five bone artefacts were found: one of them is a pendant, two are needles, whereas the function of the final two objects is unclear.



Fig. 1. EBA animal tooth pendant No. 1.

1. Pendant formed by a bicuspid of a predator, possibly a canine (Fig. 1). Complete. Perforation on the root's end, with probable traces of burning. The perforation must have been made by a sharp tool moving rotationally,<sup>2</sup> in a half-cone pattern. Length 0.041 m. Diam. of perforation 0.0015 m. Find context: Area 2, 503/506, Loc. 6, p. 1, 2.7.2010. This corresponds to the lowermost layer of the EBA habitation, below the central part of the tumulus.

2. Bone needle (Fig 2). Complete, but originally broken into two pieces. Cross-section ovoid, wider at the flat head, more rounded towards the point. Surface polished, with probable traces of the procedure (very thin and shallow lines on the length axis). The eye of the needle is circular and unpolished, the perforation made from both sides. Length 0.095 m. Diam. 0.003 m, 0.007 m (head). Diam. of eye 0.003 m.

Find context: Area 2, 503/508, Loc. 5, p. 2, 29.6.2010. This corresponds to the EBA layer beneath the southeastern part of the tumulus.



Fig. 2. EBA bone needle No. 2.

<sup>1</sup> For the site and its stratigraphy and chronology, see e.g. Forsén, this volume; J. Forsén, this volume and Lima, this volume. All the photographs are by the author. The drawings are by A. Patteri and E. Tikkala.

<sup>2</sup> Kyparissi-Apostolika 2001, 138.



Fig. 3. EBA bone needle No. 3.

3. Head and beginning of stem of bone needle (Fig. 3) that is larger than the previous, intact one. Cross-section ovoid, wider at the flat head, more rounded towards the stem. Surface polished, with probable traces of the procedure (very thin and shallow lines on the long axis). The eye of the needle is circular and unpolished, the perforation made from both sides. Pres. length 0.027 m. Diam. of stem 0.0055 x 0.003 m. Diam. of eye 0.004 m.

Find context: Area 2, 503/505, Loc. 0-4, p. 1, Charcoal quest, 8.7.2010. Retrieved from just above the cremation burial that postdates the EBA habitation and predates the erection of the tumulus. Could have belonged to the cremation burial itself, but could equally well be an intrusion from the EBA layers.

4. Bone artefact, made from an oblong and curved bone, narrower in the middle, with vertically cut-off ends (Fig. 4). Nearly complete, only slightly chipped in both ends. The marrow was carefully extracted, so that the final product would be tubular. A blind, round hole is pierced on the ridge at the centre on one side of the bone. The interior and the exterior are smoothed, while there are traces of polish at both ends and at the perforation. Length 0.069 m. Diam. of perforation 0.006 m.

Find context: Area 2, 503/506, Loc. 6, p. 1, 30.6.2010 ( $x=504.62$ ;  $y=507.06$ ;  $z=99.12$ ) This corresponds to the lowermost layer of the EBA habitation, below the central part of the tumulus, like No. 1.

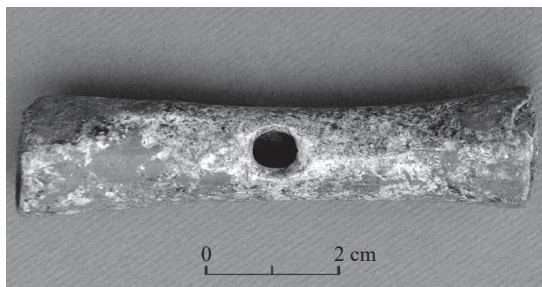


Fig. 4. EBA bone artefact No. 4.

5. Flat ellipsoidal bone artefact, broken into five fragments (Fig. 5). A small part of the periphery missing. Cross-section slightly wavy. The surface of the artefact is polished on one side, but not so thoroughly polished on the other side, where there also are several incised lines following the long axis. There are two circular holes in the centre, 0.007 m from each other. Diam. 0.055 x 0.045 m. Thickness 0.003 m. Diam. of holes 0.006 m.

Find context: Area 2, 505/506, Loc. 3, p. 1, 23.7.2009. This corresponds to the filling layer of the tumulus, which, however, also contained a large amount of EBA pottery. This object may thus also originate from the EBA layers.

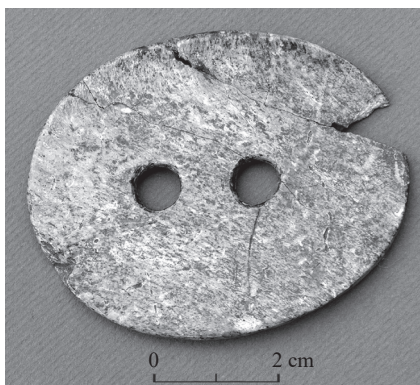


Fig. 5. EBA bone artefact No. 5.

The use of wild animal teeth (e.g. deer, boar or wolf) as pendants can be seen relatively frequently during and after the Palaeolithic period in Epirus.<sup>3</sup> There is a pendant similar to No. 1 from a wolf's bicuspid found in the Final Neolithic hut of Doliana, Epirus, where the perforation is drilled closer to the centre of the tooth,<sup>4</sup> and another one

<sup>3</sup> Bailey *et al.* 1983, 30, pl. 7; Kotzampopoulou 2008, 19-20.

<sup>4</sup> Yiouni 2008, 40.



from Late Neolithic or EBA Sesklo, Thessaly.<sup>5</sup> Such personal adornments are also known from the Late Copper Age Coţofeni Culture of present-day Romania, that corresponds to Early Helladic I and II,<sup>6</sup> and from the EBA Hvatan Culture of modern Hungary.<sup>7</sup> For EBA pendants from deer teeth see Levkas, Steno, R15b.<sup>8</sup>

Bone needles are common finds in prehistoric sites. Most needles, however, are cruder and wider<sup>9</sup> than the two specimens from Goutsoura. The latter are thinner, while their cross-section tends to be circular and their heads are only slightly projected, making them suitable for more delicate operations.

Two objects very similar to No. 4 were found at the cave of Choirospilia, Levkas. W. Dörpfeld, who considered them “handles”, does not give any chronological details.<sup>10</sup> Objects similar to the discoid artefact No. 5 have been found e.g. in Bulgaria and Albania. One circular clay disc with two perforations from Grave 183 of the Chalcolithic cemetery of Durankulak (present day Bulgaria) has the same main morphological features,<sup>11</sup> while the same goes for one or two artefacts of the same material from Maliq (modern Albania).<sup>12</sup>

## Metal objects

Two metal objects were found, both possibly made of copper or a copper alloy: one punch and one fish hook. There is also a small drop of copper or copper alloy that points to metallurgical production at the site itself.

6. Copper or copper alloy punch (Fig. 6). Complete. Green to blue-green patina. It is made from a forged metal wire of square cross-section, narrowing to a blunt butt – to receive a handle of perishable material – and towards a sharp point at the other end. Length 0.087 m. Maximum width 0.003 m.

Find context: Area 2, 503/506, Loc. 6, p. 2, 8.7.2010. This corresponds to the lowermost layer of the EBA horizon, below the central part of the tumulus (like Nos. 1 and 4).

7. Copper or copper alloy fish-hook (Figs. 7-8). Complete, unintentionally bent at the upper ¼ of its length and nearly broken at the upper end. Green to blue-green patina. It is made from a forged metal wire of square cross-section bent intentionally at a 45° angle to form the simple and barbless tip. It lacks any support for the line. Length 0.047 m.

Find context: Area 2, 503/507, Loc. 1, p. 1, 14.6.2010. This corresponds to the topsoil above the tumulus.



Fig. 6. EBA copper punch No. 6.



<sup>5</sup> Karali 1996, 336: 291; Kyparissi-Apostolika 2001, 108; Tsountas 2000, 357, pl. 46:12.

<sup>6</sup> Herculane-Pestera Hotilor level I (Roman 1977, pl. 52:38).

<sup>7</sup> Kalicz 1968, 164, Taf. LXIII:13, LXXX:26.

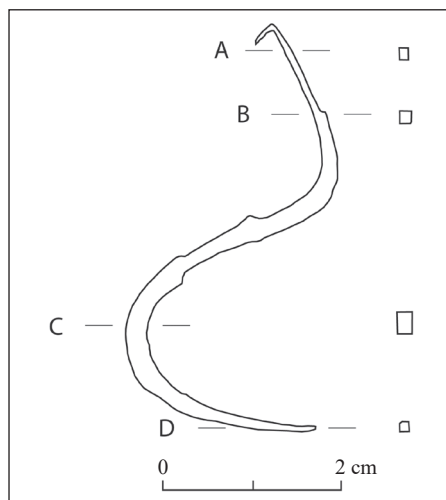
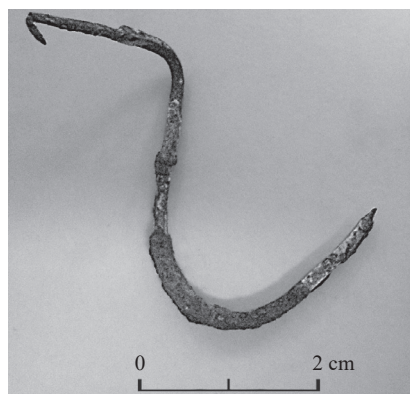
<sup>8</sup> Dörpfeld 1927, 235, Beil. 63: c.5.

<sup>9</sup> Cf. e.g. the bone needles from EBA Maliq II and IIIa in Korçë valley (Albania) (Prendi and Bunguri 2008, Tab. III:1-5; Prendi 2008, 414, fig. 5).

<sup>10</sup> Dörpfeld 1927, 333-334, Beil. 81a.

<sup>11</sup> Todorova 2002, Tabl. 13:12.

<sup>12</sup> Aliu 2006, 50, pl. 4.3, second row, middle.



Figs. 7-8. EBA copper fish-hook No. 7

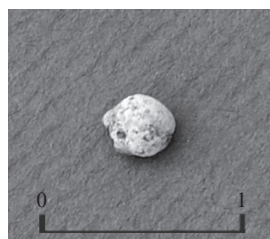


Fig. 9. Copper drop No. 8, constituting the remains of metallurgical activities.

8. Small drop of copper or copper alloy (Fig. 9). Shape not perfectly spherical. Green patina. Fragile and partly broken. Small air bubbles in the interior. Diam. 0.002 m.

Find context: Area 2, 505/505, Loc. 3, p. 2, Grave, 24.7.2009, i.e., in the soil fill of the central cist grave of the tumulus. The fill of the cist grave included some EBA pottery in secondary find context and the small sphere may thus also originate from the EBA layer.

Keith Branigan<sup>13</sup> uses the term punch to describe awls with a square section. It is a tool suitable for work harder than can be done by ordinary round section awls / borers.

The length of punch No. 6 lies within the average given by Branigan (0.035-0.135 m), but it is somewhat thinner (average width 0.002-0.006 m). Punches are rather common finds in the EBA Aegean world.<sup>14</sup> They are also found in present day Albania, where they form the standard type of awl during the Chalcolithic.<sup>15</sup> Furthermore, in the western part of modern Bulgaria they are known to date back to the Eneolithic/EBA transition,<sup>16</sup> in modern Romania they have been found in Neolithic<sup>17</sup> and

<sup>13</sup> Branigan 1974, 27.

<sup>14</sup> Branigan 1974, 171-172 and Branigan 1968, 32, 90-91 catalogues 47 punches from the EBA Aegean (Crete: Koumasa, Platanos, Pyrgos, Kanli Kastelli, Mallia; Cyclades: Chalandriani, Naxos; eastern and northeastern Aegean: Samos, Thermi, Poliochni, Troia; Greek mainland: Zygouries, Thebes, Eutresis, Kritsana, Rachmani. Northern Greece: Sitagroi, Dikili Tash). Punches were also found in Lerna (Tripathi 1988, 245-246, nos. 70, 75-76). From EBA Leukas, one punch is mentioned outside R16 at Steno (Length: 0.056 m. Dörpfeld 1927, 294, Beil. 62:13; Souyoudzoglou-Haywood 1999, 25, 29; Branigan 1975, 42), together with a fish-hook (see below). Three punches were found at Sesklo (Late Neolithic or EBA) (Tsountas 2000, 353-534). During the Chalcolithic (Zachos and Douzougli 1999), punches are reported from Kitsos Cave (Attica), Skoteini Cave (Tharrounia, Euboia), Paradeisos (Macedonia, Hellström 1987, fig. 48:18, 19).

<sup>15</sup> Maliq II (Prendi 1976, Tab. XXII:28; Prendi 2008, 400, 417, fig. 12.5).

<sup>16</sup> Ilčeva 1993, fig. 7.

<sup>17</sup> Precucuteni III Culture (Marinescu-Bilcu 1974, figs. 25:17, 18); Cucuteni Culture (Marinescu-Bilcu 1981, 58, figs. 198:10, 199:2).

EBA<sup>18</sup> contexts, and further away, in modern Moldavia and Eastern Ukraine, there have been examples from the Eneolithic period.<sup>19</sup>

The fish-hook No. 7 may be classified as belonging to Branigan's Type I.<sup>20</sup> It is the most common type in the Aegean, perhaps because of its simplicity. Tripathi corrects Branigan's opinion that they are always of square cross-section and adds one circular cross-section fish-hook with a flat upper end for the line, from Eutresis.<sup>21</sup> Branigan's Types IIa (barbless and with two low rings for the line) and IIb (with barb and sometimes with an outward-curving upper end for the line) are rarer in the Aegean, but occur in the Chalcolithic of the Korçë valley<sup>22</sup> and in the Late Copper Age of modern Romania.<sup>23</sup>

No such fish-hooks are listed by Iakovidis in his discussion of this type of artefact in Mycenaean times<sup>24</sup> and only one probable example was found in Lerna in a late Middle Helladic context.<sup>25</sup> We may, thus, assume that fish-hooks of Branigan's Type I date mainly to the EBA. Consequently, the Goutsoura fish-hook No. 7, on typological grounds, most likely dates to the EBA although it was found in the very topsoil above the uppermost cultural layer covering the tumulus, i.e., in a post LBA and/or Early Iron Age context.

The small metal drop No. 8 is of great interest. Although we can hardly be certain about its nature, similar drops, either of copper or bronze, have been found in areas where metallurgical activities were taking place, as dribbles, or in metallurgical or jewelry workshops.<sup>26</sup> No. 8 may thus indicate metallurgical activities at the site of Goutsoura.

The punch No. 6 is the first metallic artefact to be recovered from a well stratified context dating to the EBA in Epirus. Ch. Kleitsas, using both typological and archaeometric analysis, recently proved that a very interesting assemblage of 12 cast single-edged copper alloy axes (Cu-As), all chance finds from various Epirotic origins, also date to the EBA.<sup>27</sup> The cast single-edged copper axe is a type known in northern and northwestern Greece, Albania, Bulgaria and Romania. The 12 cast single-edged axes along with the finds from Goutsoura prove that metallic tools were used, and perhaps even manufactured, in EBA Epirus, an area that can now be included in the wider perspective of metal circulation in the Aegean and the Balkans.

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<sup>18</sup> Coțofeni culture Roman 1977, pl. 8:2-3. Punches are Type a1 awls according to Roman's classification. Punches are also mentioned from the Chalcolithic site of Jilava (Gumelnița Culture) (Morinz and Rozetti 1959, 44, 206, pl. XII:1) and from the Chalcolithic cemetery of Durankulak in modern Bulgaria (Graves 320, 368, cf. Todorova 2002, Tabl. 40:13, 46:20).

<sup>19</sup> They are larger than the Greek ones (0.1-0.15 m). Govedarica 2004, 185.

<sup>20</sup> Branigan 1974, 29. He catalogues 23 Type I fish-hooks from the EBA Aegean (Crete: Ayia Photia, Levina; Cyclades: Syros (T453); eastern and northeastern Aegean: Samos, Thermi, Emporio, Poliochni; Greek mainland: Raphina).

<sup>21</sup> Tripathi 1988, 247, no.89.

<sup>22</sup> Maliq II (Prendi 1976, Tab. XXII:30).

<sup>23</sup> Roman 1977, pl. 8:21.

<sup>24</sup> Iakovidis 1970, 354.

<sup>25</sup> Tripathi 1988, 194, 304, illustration 88:701.

<sup>26</sup> Y. Basiakos, personal communication. His estimates are based on the observation of macro-photographs of the globule, not on a close examination. We are grateful to him for his kind help.

<sup>27</sup> Kleitsas 2013a, 108-115; Kleitsas 2013b. For a description of one such axe, see [http://amio.gr/templates/themza\\_j15\\_04/pdf/pelekys1923-1932.pdf](http://amio.gr/templates/themza_j15_04/pdf/pelekys1923-1932.pdf).



## Terracotta spindle whorls

The excavations produced a total of 13 spindle whorls. Four of the spindle whorls were simple reused perforated sherds (Fig. 10), four were conical in shape, three biconical, one lentoid and one was a biconical/rhomboid with punched decoration.

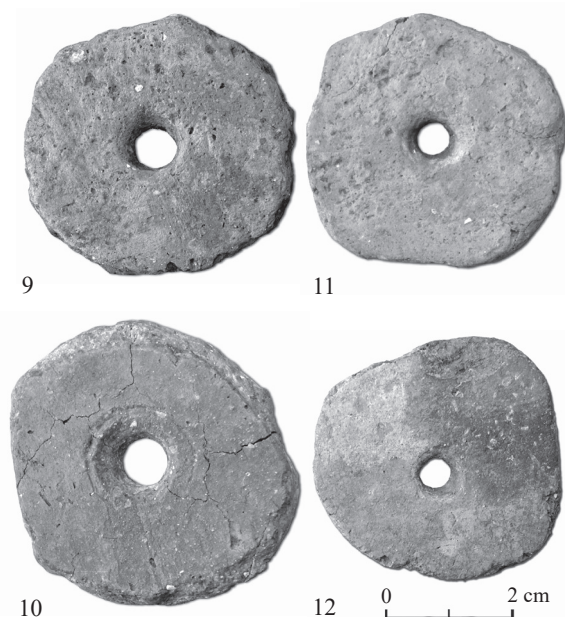


Fig. 10. Potsherds reused as spindle whorl during EBA, Nos. 9-12.

9. Circular perforated potsherd from the body of a rather large, closed vessel. Clay fine, dark in the core (dark greenish gray 4/1), reddish yellow on the outer surface (7.5 YR 6/6) and light reddish brown on the interior surface (5YR 6/3). Vertical central perforation, made after firing. Diam. 0.04 m. Width 0.007 m. Diam. of perforation: 0.006 m.

Find context: Area 2, 503/507, Loc. 5, p. 4, 2.7.2010 (x=504.60; y=507.26; z=98.96). This corresponds to the EBA layer beneath the southeastern part of the tumulus.

10. Circular perforated potsherd from the body of a rather large, closed vessel. Clay fine, dark gray (10YR 4/1). Outer surface slipped, reddish yellow (5 YR 7/6). Circumference rather irregular. Vertical central perforation, made after firing by piercing from both sides. On the inner

side of the sherd, an engraved ring surrounds the perforation, obviously part of the preparation for drilling. Diam. 0.042 m. Width 0.01 m. Diam. of perforation: 0.006 m. Diam. of ring 0.016 m.

Find context: Area 2, 503/506, Loc. 5, p. 1, 30.6.2010 (x=504.94; y=507.11; z=99.10). This corresponds to the EBA layer beneath the central part of the tumulus.

11. Circular perforated potsherd from the body of a rather large, closed vessel. Clay fine, dark gray (gley 2, dark greenish gray 4/1). Outer surface slipped, reddish yellow (5 YR 6/6). Circumference slightly irregular. Vertical central perforation, made after firing by piercing from both sides. Diam. 0.04 m. Width 0.007 m. Diam. of perforation 0.006 m.

Find context: Area 2, 503/506, Loc. 5, p. 1, 30.6.2010 (x=504.94; y=507.11; z=99.10). This corresponds to the EBA layer beneath the central part of the tumulus.

12. Circular perforated potsherd from the body of a vessel. Clay very fine / fine, fired mottled dark reddish gray to black on the exterior (5YR 4/2-2.5/1) and dark gray (5YR 4/1) on the inner surface, which is burnished. Circumference irregular. Vertical central perforation, made after firing by piercing from both sides. Diam. 0.036 m. Width 0.007 m. Diam. of perforation 0.004 m.

Find context: Area 2, 505/508 Loc. 5, p. 2, 24.7.2009. This corresponds to the EBA layer beneath the southern part of the tumulus.

13. Convex conical spindle whorl (Fig. 11). Complete. Clay fine, red (2.5YR 5/6). Surface plain, mottled black, probably due to secondary burning. Diam. 0.045 m. Height 0.038 m. Diam. of perforation 0.007 m.

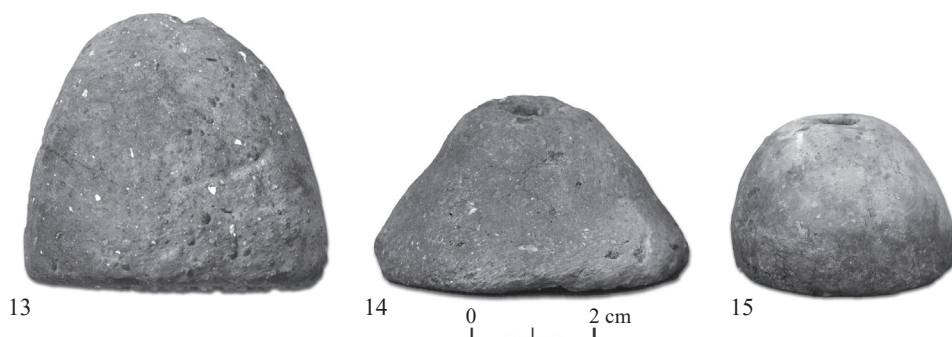


Fig. 11. Conical spindle whorls from the EBA layer in Trench A and D, Nos. 13-15.

Find context: Trench A1-ext., Loc. 4, p. 1, 26.7.2007, Inv. no. 138. This corresponds to the EBA settlement layer, ca. 40 m to the east of the tumulus.

14. Truncated conical spindle whorl. Complete. Clay brown (7.5YR 4/2), fine. Surface plain. Small part of the perimeter of the base missing. Diam. of base 0.051 m. Diam. of top 0.017 m. Height 0.028 m. Diam. of perforation 0.007 m.

Find context: Trench D, Loc. 4, p. 4, 24.7.2007, Inv. no. 137. This is the lowermost locus of Trench D, i.e., it corresponds to the EBA settlement layer at the site.

15. Small convex conical spindle whorl. Complete. Clay very fine, pale yellow (2.5Y 7/4). Traces of very pale brown (10YR 8/3) slip towards the base. Base slightly convex. Diam. of base 0.035 m. Height 0.028 m. Diam. of perforation 0.007 m.

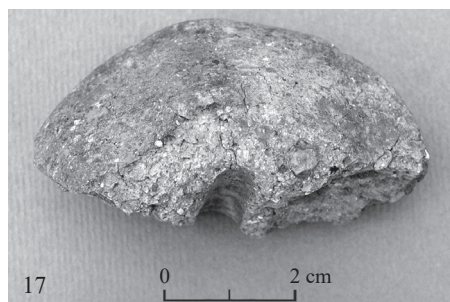
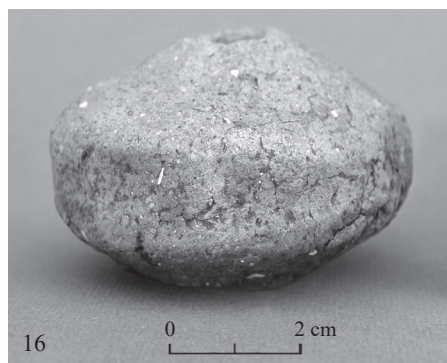
Find context: Trench A1, Loc. 4, p. 3, 23.7.2007. This corresponds to the EBA settlement layer, ca. 40 m to the east of the tumulus.

16. Squat biconical spindle whorl (Fig. 12). Complete. Clay medium fine, light red (2.5YR 6/6). Surface plain, flaking. Shaping rather crude. Vertically cut in maximum diameter, forming a wall 0.012 m. Height 0.033 m. Diam. 0.056 m. Diam. of perforation 0.008 m.

Find context: Area 2, 503/506, Loc. 5, p. 1, 30.6.2010. This corresponds to the EBA layer beneath the central part of the tumulus.

17. One half of a heavily squat biconical spindle whorl (Fig. 13). Clay medium, evenly fired, red (2.5 YR 4/6). Surface smoothed, 10R 6/8 light red to 5YR 7/6 reddish yellow. Height 0.027 m. Diam. 0.052 m. Diam. of perforation 0.006 m.

Find context: Area 2, 507/507, Loc. 4, p. 2, 6.7.2009. This corresponds to the EBA layer beneath the southwestern part of the tumulus.



Figs. 12-13. Squat biconical spindle whorls from EBA layer in Area 2, Nos. 16-17.



Fig. 14. Conical spindle whorl No. 18 from the late LBA and/or EIA layer in Area 2.

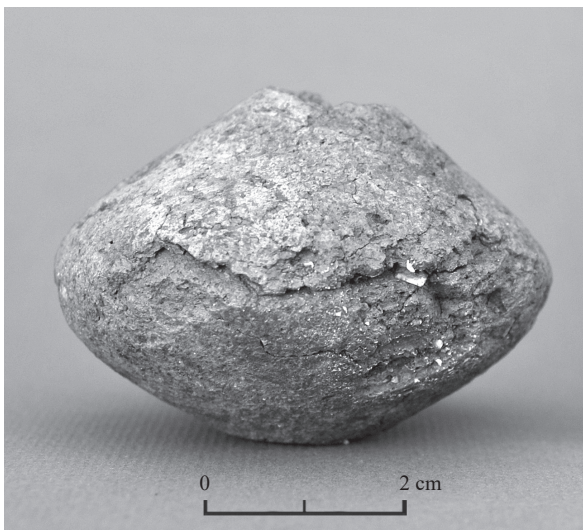


Fig. 15. Biconical spindle whorl No. 19 from the late LBA and/or EIA layer in Area 2

18. One half of the lower part of large, conical spindle whorl (Fig. 14), found in three pieces and restored. Three further fragments cannot be attached. Plain. Porous clay, fine-very fine, reddish yellow (5YR 6/6). Pres. height 0.028 m. Diam. 0.045 m. Diam. of perforation 0.007 m. Find context: Area 2, 511/508, Loc. 2, p. 1, 2.7.2009. This corresponds to the uppermost cultural layer that is located above the tumulus and dates to the late LBA and/or the Early Iron Age.

19. Biconical spindle whorl (Fig. 15). Part of maximum diameter flaked off. Clay friable, fine with limestone inclusions, light red (2.5YR 6/6) to red (7.5R 5/8). Diam. 0.046 m. Height 0.032 m. Diam. of perforation 0.007 m. Find context: Area 2, 509/506, Loc. 2, p. 1, 6.7.2009. Further see No. 18.

20. One half of a lentoid spindle whorl (Fig. 16). Very fine clay, unevenly fired. Core bluish gray (Glaz 2, 5PB 6/1). Traces of reddish yellow (7.5YR 7/8) slip. Diam. 0.054 m. Height 0.026 m. Diam. of perforation 0.007 m. Find context: Area 2, 511/508, Loc. 2, p. 1, 2.7.2009. Further see No. 18.

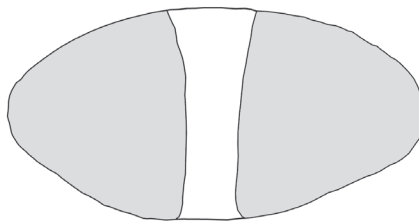
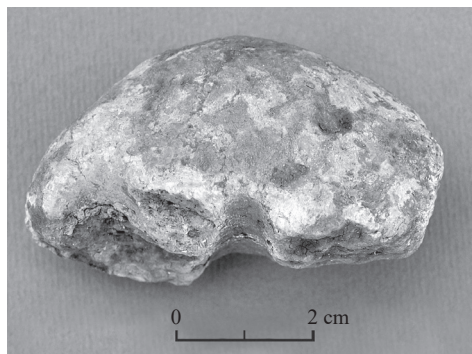


Fig. 16. Lentoid spindle whorl No. 20 from the late LBA and/or EIA layer in Area 2.



21. Biconical/rhomboid spindle whorl (Fig. 17). Complete. Very fine, brown clay. Punched decoration of horizontal rows of dots, three on one cone, five on the other and one on maximum diameter. The lower third of one cone is not covered by the decoration. Diam.

Find context: Area 3, 521/577, Loc. 1, p. 1, 16.6.2010. This corresponds to the pebble layer covering part of the grave circles in Area 3 and that on the basis of the stratigraphy can be dated to between the late MBA and early LBA.

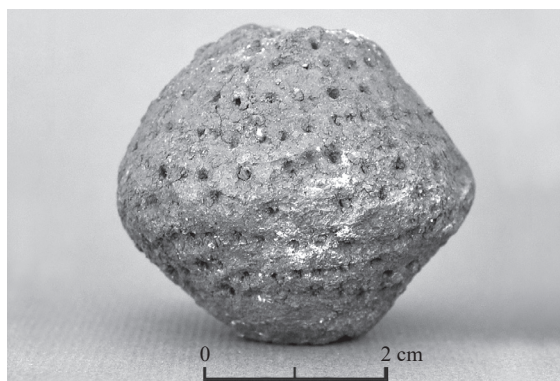


Fig. 17. Biconical/rhomboid spindle whorl No. 21 from the late MBA to early LBA layer in Area 3

Most scholars classify perforated circular sherds as weaving and spinning implements, mostly as spindle whorls.<sup>28</sup> The earliest finds date to the Early Neolithic period.<sup>29</sup> During the EBA they are found at sites in the Ionian Sea, the southern Greek mainland, the Aegean islands and Macedonia.<sup>30</sup> Such artefacts are found in Albania as early as the Early Neolithic period,<sup>31</sup> in Bulgaria from at least the Chalcolithic (Karanovo V)<sup>32</sup> and in Romania in connection with EBA Coțofeni culture sites.<sup>33</sup> M. Joukowski suggests that they were used during the initial stage of spinning for the production of cruder threads, which were further processed later.<sup>34</sup>

Tall conical whorls like No. 13 are more common in Thessaly during the EBA than in the Neolithic period,<sup>35</sup> while they appear in the Ionian Islands<sup>36</sup> and on the southern Greek mainland during the whole of the Bronze Age.<sup>37</sup> They are, also, present in the northeastern Aegean in the Final Neolithic period.<sup>38</sup>

Truncated conical spindle whorls like No. 14 have also been found in EH II Lithares, in EH I-II Akri Rozos on Euboea,<sup>39</sup> in Phase 10 of Serbia (latest of EBA) and

<sup>28</sup> Carington Smith 2000, 207.

<sup>29</sup> Carington Smith 2000, 208-209; Papaefthimiou-Papanthimou 2002, 84-89.

<sup>30</sup> Leukas: Choïrospilia (they are not dated and could date from the Middle Neolithic to, at least, the EBA) (Dörpfeld 1927, Beil. 81a; Souyoudzoglou-Haywood 1999, 6-7, 17). Southern Greek mainland: Lithares (Tzavela-Evjen 1984, 173-174, pl. 92: δ, θ, ι, κ), Eutresis (Goldmann 1931, 295, fig. 120), Ayios Kosmas (Mylonas 1959, 146), Lerna (Carington Smith 1975, 217), Asine (Frödin and Persson 1938, 251, 177). Aegean islands: Amorgos, Markiani (Gavalas 2006, 206-207, pl. 49f), Lesbos, Thermi (Lamb 1936, pl. XXXVI:31-53a). Macedonia: Sidirokastro, Katarraktes-Fragma cave (Siros *et al.* 2007). One unfinished such artefact is reported from the MBA level of Ermones, Corfu (Arvanitou-Metallinou 1989-1991, 218).

<sup>31</sup> Korkuti 1995, Taf. 8:B.g; 15:20; Lera 2009, Tab. XI: 20-22.

<sup>32</sup> Lichardus 2001, Tab. 24.

<sup>33</sup> Roman 1977, 34, pl. 52: 34.

<sup>34</sup> Joukowski 1986, 381.

<sup>35</sup> Tsountas 2000, 344, pl. 44:20.

<sup>36</sup> Corfu, Afiona (Bulle 1934, 167, Beil. 4:16).

<sup>37</sup> Lithares (EH II) (Tzavela-Evjen 1984, 173, pl. 90:α, β. 91:α); Asin e (MH) (Nordquist 1987, 176, fig. 61:6); Eutresis (LH) (Goldmann 1931, pl. 265); Marmara ("Dark Ages"?) (Dakoronia 1987, 136:Δ18, fig. 61, drawing 37).

<sup>38</sup> With a very similar one (even in dimensions) as the Goutsoura specimen from the Troad (Takaoglu 2006, 308, no. 41). Only the diameter of perforation is smaller (0.005 m).

<sup>39</sup> Cullen *et al.* 2013, 59, fig. 30:V5.

on EBA Amorgos.<sup>40</sup> However, such truncated whorls also occur in the Neolithic cave of Konispol (modern Albania)<sup>41</sup> and in the Late Neolithic settlement of Promachon-Topolnica IV (on the Greek-Bulgarian borderline).<sup>42</sup>

Small conical whorls like No. 15 are not unusual.<sup>43</sup> Their function as beads cannot be excluded, especially the ones with a diameter of less than 0.03 m.<sup>44</sup> It is known that even larger biconical whorls were used as necklace beads in LBA Epirus.<sup>45</sup>

Two of the biconical spindle whorls, Nos. 16 and 17, are squat in shape. No. 16 is a particularly peculiar shape, due to the vertical maximum diameter. However, conical whorls with a vertically cut wall towards the base are known from Late Chalcolithic / EBA Epirus, from EH II southern Greek mainland and from EBA southern Albania.<sup>46</sup> A whorl similar to No. 17 has been found in Servia.<sup>47</sup> The biconical whorl No. 19 again finds parallels from Final Neolithic Doliana in Epirus,<sup>48</sup> from EBA Serbia in Macedonia,<sup>49</sup> and from EH II Manika on Euboea.<sup>50</sup>

Spindle whorl No. 20 is the only lentoid whorl from Goutsoura. Lentoid whorls come from EBA Servia and, according to Carington Smith,<sup>51</sup> are a Late Neolithic/Chalcolithic type continuing into the EBA. One is shown from EH II Manika.<sup>52</sup> Similar ones are reported from Chalcolithic Maliq II in Albania and from Late Neolithic Porodin.<sup>53</sup>

Conical and biconical spindle whorls both appear for the first time during the Middle Neolithic period.<sup>54</sup> The conical type is found in Thessaly and the Peloponnese. During the Late Neolithic period the shape becomes more common and such whorls are now found in Macedonia, Thessaly, Attica and the Peloponnese. During the EBA, the biconical whorl is the dominant type in the Ionian Islands,<sup>55</sup> Macedonia<sup>56</sup> and northern Aegean,<sup>57</sup> while the southern Greek mainland favours conical spindle whorls and

<sup>40</sup> Lithares (Tzavela-Evjen 1984, 173, drawing 23:ζ, pl. 90:δ, ρ, σ, τ; Servia: Carington Smith 2000, 218, 221 (SF336), pl. 4.18:a (upper right), fig. 4.32; Markiani (II and III): Gavalas 2006, pl. 49:a, b.

<sup>41</sup> *HGAtlas* 2008, 42, fig. 33.

<sup>42</sup> Koukouli-Chrysanthaki *et. al.* 2007, fig. 50:2.

<sup>43</sup> For example one decorated from EC II Markiani III (Amorgos) (Gavalas 2006, fig. 8.22:1), another from EH II Lithares (Tzavela-Evjen 1984, 173, drawing 23:η, pl. 90:ε) and from MH Asine (Nordquist 1987, 176, fig. 61: 6).

<sup>44</sup> Carington Smith 2000, 216.

<sup>45</sup> Vokotopoulou 1969, 202, pl. 30:ζ'.

<sup>46</sup> Doliana (Douzougli and Zachos 2002, fig. 11:7); Lithares (Tzavela-Evjen 1984, 173, drawing 25:ε, pl. 90:ξ); Maliq IIIa (Prendi and Bunguri 2008, Tab. XXIII:13).

<sup>47</sup> Carington Smith 2000, 218 (SF376), fig. 4.32.

<sup>48</sup> Douzougli and Zachos 2002, 135, fig. 11.8,

<sup>49</sup> The number is larger than the others. Carington Smith 2000, 216, fig. 4.32: SF45.

<sup>50</sup> Manika (Sampson 1985, drawing 54).

<sup>51</sup> Carington Smith 2000, 218, fig. 4.32: SF27.

<sup>52</sup> Sampson 1985, drawing 54.

<sup>53</sup> Prendi 2008, 267, Tab. XXII:36; Carington Smith 2000, 218.

<sup>54</sup> Carington Smith 2000, 216; Papaefthymiou-Papanthimou 2002, 101-102.

<sup>55</sup> Korfu, Aphiona (Bulle 1934, 167, fig. 4:14, 15), Ermones (MBA mostly) (Arvanitou-Metallinou 2007, 143); Levkas (Dörpfeld 1927, 284, 331, Taf. 56, 73, 81a, 83a); Ithaka, Pelikata (Heurtley 1934-1935, 35, fig. 30:141, 145).

<sup>56</sup> Kritsana (Hausmann and Milojević 1976, Taf. 51:1, 25, 26); Saratse (Heurtley and Raleigh Radford 1930, 140, 150); Kastanas (Aslanis 1985, 195-197, Taf. 11:12, 81:1-9); Aggelochori (Stefani 1997, 105).

<sup>57</sup> In the northern Aegean biconical whorls occur together with spherical ones (Carington Smith 1975, 211). Cf. eg. Lemnos, Poliochni (Bernabò Brea 1964, 655, pl. 169); Lesbos, Thermi (Lamb 1936, 161, figs. 46-47).

biconical ones are practically absent.<sup>58</sup> The Cyclades again show a marked preference for flat discoid and conical spindle whorls.<sup>59</sup> Biconical whorls in Macedonia remain in use throughout the Bronze Age and well into the Early Iron Age, but after the MBA – and indeed the late EBA – they coexist with increased numbers of conical ones.<sup>60</sup>

It is interesting that both forms are present in Epirus from the Chalcolithic onwards, following the dominance of biconical forms in the Late Neolithic period.<sup>61</sup> This picture can now be confirmed for the EBA as well, by the small assemblage of three biconical, four conical and one lentoid spindle whorls, with the addition of four circular, perforated potsherds from Goutsoura. The balanced ratio of biconical to conical whorls at this site seems to occupy the middle distance between the northern and southern Greek mainland preferences.

The spindle whorl No. 21, which comes from a late MBA or early LBA context, differs totally from the other specimens recovered from Goutsoura. Two such whorls, with punched decoration are published by Tsountas,<sup>62</sup> according to whom such whorls were found during both the Neolithic period and the Bronze Age. A burnished, undecorated biconical-rhomboid whorl from Kallithea, Epirus, was found together with finds dating to the LBA and Early Iron Age.<sup>63</sup> A late date seems also to be suggested by a whorl, similar both in form and decoration to the Goutsoura example that was found in an Early Iron Age tomb at Vergina.<sup>64</sup>

## Terracotta spoons

22. Spoon with most of both ends and part of the body missing (Fig. 18). Clay fine, reddish gray (10R 5/1). Surface unslipped, black burnished (2,5Y 3/1 very dark gray). Perforated in the long axis. Pres. length 0.031 m. Diam. of body: 0,033 m. Diam. of perforation 0.007 m.

Find context: Area 2, 501/508, Loc. 4, p. 2, 25.6.2010. This entity corresponds mainly to the EBA layer beneath the southeastern corner of the tumulus.

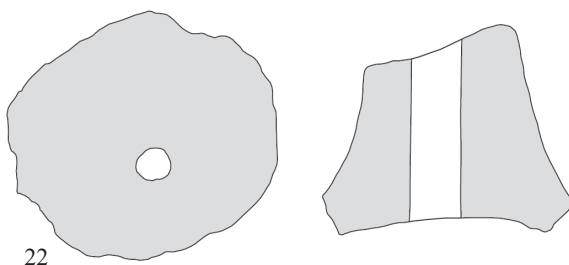
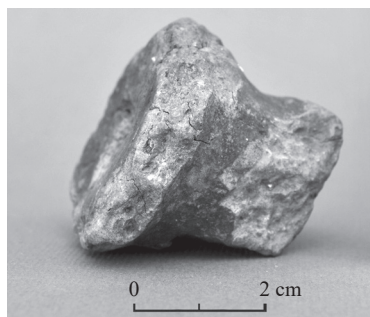


Fig. 18. Terracotta spoon No. 22 from Area 2.

<sup>58</sup> Carington Smith 1975, 209.

<sup>59</sup> Gavalas 2006, 206.

<sup>60</sup> Carington Smith 2000, 217-218.

<sup>61</sup> Late Neolithic: Gouves (Douzougli and Zachos 2002, fig. 4:10). Chalcolithic: Doliana (Douzougli and Zachos 2002, fig. 11:7-9; Yiouni 2008, 36).

<sup>62</sup> Tsountas 2000, 344, Pl. 44:14, 15.

<sup>63</sup> Surface find from Agios Athanasios and Agios Konstantinos in the Aoo valley (Douzougli 1996, 35, Pl.3:1).

<sup>64</sup> Tumulus AH, grave IX, dating to the first half of the ninth century BC (Andronikos 1969, 260, fig. 100, pl. 133).



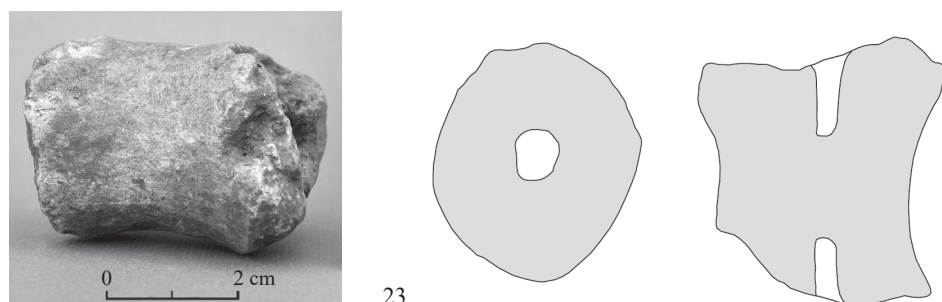


Fig. 19. Terracotta spool No. 23 from Area 2.

23. Spool with most of both ends missing (Fig. 19). Clay very fine, unevenly fired, reddish yellow (5YR 7/6) on the slipped and burnished surface, light red (5R 7/6) to black in the core. Perforated in the long axis. Pres. length 0.028 m. Diam. of body 0.033 m. Diam. of perforation: 0.008 m.

Find context: Area 2, 514/506, Loc. 1, p. 1, 6.7.2009. This corresponds to the topsoil that covered the tumulus.

Spools with longitudinal perforation are attested since the beginning of the Middle Neolithic period.<sup>65</sup> They appear in sites near the Ionian and the Aegean seas, sometimes in fairly substantial numbers.<sup>66</sup> They are also mentioned as a common find in EBA contexts in southern Albania, such as in Maliq IIIa, Luaras, the Piscovë tumulus etc.<sup>67</sup> In Epirus, they are found in four sites: a MBA tomb at Skaphidaki, Preveza (a spool of a biconical form);<sup>68</sup> a Late Helladic / Early Iron Age child burial from the acropolis of Ephyra (one specimen);<sup>69</sup> three from Dodona, dated broadly to prehistoric times;<sup>70</sup> an unspecified number from the “Nekyomanteion” of Ephyra.<sup>71</sup>

The spools have been interpreted either as shuttles<sup>72</sup> or as warping tools.<sup>73</sup> If we accept the first interpretation, then the shuttle would be the perforated spool with the wrapped string and a long wooden axis passed through the perforation. According to the second interpretation, spools would have been used in the course of warping, a crucial preparatory stage in weaving with horizontal looms. If this is indeed the case, then it fits well with the absence from Goutsoura of any evidence for loom-weights, the only part of

<sup>65</sup> Achilleion III (Gimbutas *et al.* 1989, 252-253, fig. 8.6).

<sup>66</sup> 42 are mentioned at Ermones, Corfu (MBA. Arvanitou-Metallinou 2007, 144, fig. 7. Also, from Corfu, spools are reported from Afiona (Bulle 1934, Abb. 4:20) and 20 at Phylakopi, Mylos (from every period. Bosanquet and Welch 1904, 213, pl. XL:36). Spools also come from Lefkas, Syvros (EBA. Andreou 1975, 218; Souyoudzoglou-Haywood 1999, 17); Amali (MBA? Dörpfeld 1927, Beil. 59a); Skaros (EBA and MBA. Souyoudzoglou-Haywood 1999, 18, 29; Dörpfeld 1927, Beil. 73:12); Ithaki, Pelikata (EBA. Heurtley 1934-1935, 35); Euboia, Kalogerovrysi (MBA. Sampson 1993, 119, fig. 76:2); Boeotia, Thebes (Demakopoulou and Konsola 1975, pl. 38b); Eutresis (Goldmann 1931, pl. 266:1); Argolis, Asine (MH. Nordquist 1987, 57, fig. 63); Lerna (MH. Caskey 1957, 147); Laconia, Ayios Stefanos (Taylour 1972, 216).

<sup>67</sup> Prendi and Bunguri 2008, 241, Tab. V:21; Bodinaku 1981, Tab.1:14.

<sup>68</sup> Andreou 1994, 243, Pic.34; Tartaron 1996, 166, 221.

<sup>69</sup> Dakaris 1958, 112.

<sup>70</sup> Evangelidis 1935, 208, pl. 9B:2, 4, 10; Hammond 1967, 301.

<sup>71</sup> Dakaris 1963, 91.

<sup>72</sup> Barber 1991, 107; Tzachili 1997, 175; Arvanitou-Metallinou 2007, 144.

<sup>73</sup> Tzachili 1997, 210; Arvanitou-Metallinou 2007, 144; Carington Smith 1975, 404-410.

the vertical loom with weights that has a good chance of survival.<sup>74</sup> The number of loom-weights in the EBA Aegean is generally very limited, while in Albania they are mentioned as finds from Maliq IIIa and from Kallamas.<sup>75</sup>

The spools gain popularity in Crete in the Middle Minoan Period, when, according to I. Tzachili, the vertical looms equipped with weights multiply.<sup>76</sup> Their scarcity has been generally attributed to two factors: a) The use of some kind of loom without weights, such as the horizontal. It should be noted, however, that in Egypt this kind of loom was succeeded from the sixteenth century BC onwards by a type of vertical one which did not involve weights.<sup>77</sup> b) The use of objects difficult to locate archaeologically, such as stones.<sup>78</sup> Some elliptical clay loom-weights with a deeply incised cross, sometimes perforated, from the Late Neolithic Kallamas at the Albanian part of the Great Prespa Lake give us an idea of what such stones might have looked like.<sup>79</sup> Another plausible explanation could be that weaving activities were taking place elsewhere.

In any case, it seems that the vertical loom with weights was more time and labour-consuming, but better suited for the production of colourful textiles, an instrument mostly desired by societies with a clear vertical stratification and increased complexity, such as the palatial economies of the MBA and LBA southern Aegean, where it was considered a valuable commodity.<sup>80</sup> A small Epirotic community of the EBA without that level of social complexity and the concomitant antagonisms, needed less powerful insignia of status and probably produced less elaborate, time and labour-consuming textiles in the context of a household level production. These textiles could be made on looms without weights, either vertical – like the Egyptian ones of the LBA – or horizontal. The second case is further supported for Goutsoura by the presence of clay spools.

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<sup>74</sup> Arvanitou-Metallinou (2007, 144-145) reaches the same hypothesis in her examination of the MBA weaving and spinning material from Ermones, Corfu.

<sup>75</sup> Prendi and Bunguri 2008, 239-240, Tab. V:6-11; Lera and Toucheas 2013, fig. 30.

<sup>76</sup> Tzachili 1997, 181.

<sup>77</sup> Tzachili 1997, 153, 199-200.

<sup>78</sup> Tzachili 1997, 177, 179, 199. The use of stones as loom-weights is implied by their very Greek name (λαιοί – stony) and mentioned by Iulius Pollux (οἱ λίθοι οἱ ἐξηρημένοι τῶν στημόνων κατὰ τὴν ἀρχαίαν ὕφαντικὴν – stones suspended from the warps in ancient weaving) (Onomasticon VII.36). Stone weights were used until recently in the Scandinavian vertical loom (Hoffmann 1964, 21; Tzachili 1997, 158-160).

<sup>79</sup> Lera and Toucheas 2013, fig. 30.

<sup>80</sup> Tzachili 1997, 200-201.

## Bibliography

- Aliu 2006 = Sk. Aliu, "Recent Prehistoric Research in Southeast Albania: A Review", in L. Bejko and R. Hodges (eds.), *New Directions in Albanian Archaeology. Studies Presented to Muzafer Korkuti*, Tirana 2006, 43-55.
- Andreou 1975 = Il. Andreou, 'Ειδήσεις από τη Λευκάδα', *AAA* 8 (1975), 216-21.
- Andreou 1994 = Il. Andreou, 'Νέες Προϊστορικές Θέσεις στην Ήπειρο', in Ch. Tzouvara-Souli, A. Vlachopoulou-Oikonomou and K. Gravani-Katsiki (eds.), *Φηγός τιμητικός τόμος για τον καθηγητή Σωτήρη Δάκαρη*, Ioannina 1994, 233-265.
- Andronikos 1969 = A. Andronikos, *Βεργίνα I. Τό νεκροταφείον τῶν τύμβων*, Athens 1969.
- Arvanitou-Metallinou 1989-1991 = G. Arvanitou-Metallinou, 'Οικισμός της Εποχής του Χαλκού στους Έρμονες Κέρκυρας', *ArchDelt* 44-46A (1989-1991), 209-221.
- Arvanitou-Metallinou 2007 = G. Arvanitou-Metallinou, 'Εργαλεία υφαντικής απ' την προϊστορική θέση των Ερμώνων στην Κέρκυρα', in G. Arvanitou-Metallinou (ed.), *Η Προϊστορική Κέρκυρα και ο ευρύτερος περίγυρός της. Προβλήματα – προοπτικές*, Korfu 2007, 141-148.
- Aslanis 1985 = I. Aslanis, *Kastanas: Ausgrabungen in einem Siedlungshügel der Bronze- und Eisenzeit Makedoniens 1975-1979. Die frühbronzezeitlichen Funde und Befunde* (Prähistorische Archäologie in Südosteuropa 4), Berlin 1985.
- Bailey *et al.* 1983 = F.N. Bailey, P.L. Carter, C.S. Gamble and H.P. Higgs, 'Asprochaliko and Kastritsa: Further Investigations of Palaeolithic Settlement and Economy in Epirus (North-west Greece)', *PPS* 49 (1983), 15-42.
- Barber 1991 = E. Barber, *Prehistoric Textiles*, Princeton, N.J. 1991.
- Bernabo Brea 1964 = L. Bernabò Brea (1964), *Poliochni: Città preistorica nell'Isola di Lemnos I*, Rome 1964.
- Bodinaku 1981 = N. Bodinaku, 'Kërkime arkeologjike në rrethin e Përmetit', *Iliria* 11/2 (1981), 243-262.
- Bosanquet and Welch 1904 = R.C. Bosanquet and F.B. Welch, 'The Minor Antiquities', in T.D. Atkinson, R.C. Bosanquet, C.C. Edgar, A.J. Evans, D.G. Hogarth, D. Mackenzie, C. Smith and F.B. Welch (eds.), *Excavations at Phylakopi in Melos* (Society for the Promotion of Hellenic Studies Suppl. Paper 4), London 1904, 190-214.
- Branigan 1968 = K. Branigan, *Copper and Bronze Working in Early Bronze Age Crete* (SIMA 19), Lund 1968.
- Branigan 1974 = K. Branigan, *Aegean Metalwork in the Early Bronze Age*, Oxford 1974.
- Branigan 1975 = K. Branigan, 'The Round Graves of Levkas Reconsidered', *BSA* 70 (1975), 37-49.
- Bulle 1934 = H. Bulle, 'Ausgrabungen bei Afiona auf Korfu', *AM* 59 (1934), 147-240.
- Carington Smith 1975 = J. Carington Smith, *Spinning, Weaving and Textile Manufacture in Prehistoric Greece from the Neolithic to the Late Bronze Age*, unpubl. PhD diss., University of Tasmania 1975.
- Carington Smith 2000 = J. Carington Smith, 'The Small Finds: Clay Spinning and Weaving Implements', in C. Ridley, K.A. Wardle and C.A. Mould (eds.), *Servia I. Anglo-Hellenic Rescue Excavations 1971-73 Directed by K. Rhomiopoulou and C. Ridley* (BSA Suppl. 32), London 2000, 207-263.
- Caskey 1957 = J.L. Caskey, 'Excavations at Lerna: 1956', *Hesperia* 26 (1957), 142-62.
- Cullen *et al.* 2013 = T. Cullen, L.E. Talalay, D.R. Keller, L. Karimali and W.R. Farrand, *The*

- Prehistory of the Paximadi Peninsula, Euboea* (Prehistory Monographs 40), Philadelphia, Penn. 2013.
- Dakaris 1958 = S.I. Dakaris, 'Ανασκαφικά ἔρευναι εἰς τὴν Ὀμηρικὴν Ἐφύραν καὶ τὸ νεκυομαντεῖον τῆς ἀρχαίας Θεσπρωτίας', *Prakt* 1958, 107-112.
- Dakaris 1963 = S.I. Dakaris, 'Ανασκαφαὶ εἰς τὸ Νεκυομαντεῖον τοῦ Ἀχαΐροντος', *Prakt* 1963, 89-92.
- Dakoronia 1987 = F. Dakoronia, *Μάρμαρα: τα Υπομνηματικά νεκροταφεία των τύμβων*, Athens 1987.
- Demakopoulou and Konsola 1975 = A. Demakopoulou and N. Konsola (1975), 'Λείψανα ΠΕ, ΜΕ και ΥΕ οικισμού στη Θήβα', *ArchDelt* 30A (1975), 44-89
- Dörpfeld 1927 = W. Dörpfeld, *Alt-Ithaka. Ein Beitrag zur Homer-Frage. Studien und Ausgrabungen auf der Insel Leukas-Ithaka I-II*, Munich 1927.
- Douzougli 1996 = A. Douzougli, 'Η κοιλάδα του Αώου: αρχαιολογικές μαρτυρίες για την ανθρώπινη δραστηριότητα από την προϊστορική εποχή ως την ύστερη αρχαιότητα', in *Η Επαρχία της Κόνιτσας στον Χώρο και τον Χρόνο, Α' Επιστημονικό Συνέδριο*, Konitsa 1996, 11-61.
- Douzougli and Zachos 2002 = A. Douzougli and K. Zachos (2002), 'L'archéologie des zones montagneuses: modèles et interconnexions dans le Néolithique de l'Épire et de l'Albanie méridionale', in G. Touchais and J. Renard (eds.), *L'Albanie dans l'Europe préhistorique* (BCH Suppl. 42), Paris 2002, 111-143.
- Evangelidis 1935 = D. Evangelidis, 'Ἡπειρωτικαὶ ἔρευναι Ι. Ἡ ἀνασκαφὴ τῆς Δωδώνης', *EpChron* 10 (1935), 192-264.
- Frödin and Persson 1938 = O. Frödin and A.W. Persson, *Asine. Results of the Swedish Excavations 1922-1930*, Stockholm 1938.
- Gavalas 2006 = G. Gavalas, 'The Spindle Whorls and Related Objects', in L. Marangou, C. Renfrew, Ch. Doumas and G. Gavalas (eds.), *Markiani, Amorgos. An Early Bronze Age Fortified Settlement* (BSA Suppl. 40), London 2006, 199-209.
- Gimbutas et al. 1989 = M. Gimbutas, S. Winn and D. Shimabuku (1989), *Achilleion. A Neolithic Settlement in Thessaly, Greece, 6400-5600 BC* (Monumenta Archaeologia 14), Los Angeles 1989.
- Goldman 1931 = H. Goldmann, *Excavations at Eutresis in Boeotia*, Cambridge 1931.
- Govedarica 2004 = B. Govedarica, *Zepterträger - Herrscher der Steppen. Die frühen Ockergräber des älteren Äneolithikums im karpatenbalkanischen Gebiet und im Steppenraum Südost- und Osteuropas*, Mainz am Rhein 2004.
- Hammond 1967 = N.G.L. Hammond, *Epirus. The Geography, the Ancient Remains, the History and the Topography of Epirus and Adjacent Areas*, Oxford 1967.
- Hanschmann and Milojević 1976 = E. Hanschmann and V. Milojević, *Die deutschen Ausgrabungen auf der Argissa-Magula in Thessalien III.1-2. Die frühe und beginnende mittlere Bronzezeit* (Beiträge zur ur- und frühgeschichtlichen Archäologie des Mittelmeer-Kulturreumes 13-14), Bonn 1976.
- Hellström 1987 = P. Hellström (ed.), *Paradeisos. A Late Neolithic Settlement in Aegean Thrace* (Medelhavsmuseet Memoir 7), Stockholm 1987.
- Heurtley 1934-1935 = W.A. Heurtley, 'Excavations in Ithaca II', *BSA* 35 (1934-1935), 1-44.
- Heurtley and Raleigh Radford 1928-1930 = W.A. Heurtley and C. Raleigh Radford, "Report on Excavations at the Tumba of Saratsé, Macedonia 1929", *BSA* 30 (1928-1930), 113-150.

- HGAtlas 2008 = *Historical and Geographical Atlas of the Greek-Albanian Border*, Athens 2008.
- Hoffman 1964 = M. Hoffmann, *The Wrap-weighted Loom. Studies in the History and Technology of an Ancient Implement*, Oslo 1964.
- Iakovidis 1970 = Sp. Iakovidis, Περαιτή. Τό νεκροταφεῖον. Β. Γενικά παρατηρήσεις, Athens 1970.
- Ilčeva 1993 = V. Ilčeva, 'Localités de période de transition de l'énéolithique à l'âge du bronze dans la région de Velio Tîrnovo', in P. Georgieva (ed.), *The Fourth Millennium B.C. Proceedings of the International Symposium, Nessebur 28-30 August*, Sofia 1993, 82-98.
- Joukowski-Sharp 1986 = M. Joukowski-Sharp, *Prehistoric Aphrodisias*, Louvain 1986.
- Kalicz 1968 = N. Kalicz, *Die Frühbronzezeit in Nordost-Ungarn. Abriss der Geschichte des 19.-16. Jahrhunderts*, Budapest 1968.
- Karali 1996 = L. Karali, 'Κοσμήματα, 291, Περίαπτο', in G.A. Papathanasopoulos (ed.), *Νεολιθικός Πολιτισμός στην Ελλάδα*, Athens 1996, 336.
- Kleitsas 2013a = Chr. Kleitsas, *Η μεταλλοτεχνία της Υστερης Εποχής του Χαλκού στην Ήπειρο: Οι θησαυροί και τα εργαλεία*, unpubl. PhD diss, University of Ioannina 2013.
- Kleitsas 2013b = Chr. Kleitsas, 'Η Εποχή Χαλκού στην Ήπειρο, Μέρος Α', *Αρχαιολογία Online: December 2012 - January 2013*, <http://www.archaiologia.gr>
- Korkuti 1995 = M. Korkuti, *Neolithikum und Chalkolithikum in Albanien*, Mainz am Rhein 1995.
- Kotzampopoulou 2008 = E. Kotzampopoulou, 'Η Παλαιολιθική Εποχή: Ακούραστοι ιχνηλάτες – σκεπτόμενοι κυνηγοί', in K.E. Zachos (ed.), *Το Αρχαιολογικό Μουσείο Ιωαννίνων*, Ioannina 2008, 16-23.
- Koukouli-Chryssanthaki et al. 2007 = Ch. Koukouli-Chryssanthaki, H. Todorova, I. Aslanis, I. Vajsov and M. Valla, 'Promachon-Topolnica: A Greek-Bulgarian Archaeological Project', in H. Todorova, M. Stefanovich and G. Ivanof (eds.), *The Struma/Strymon River Valley in Prehistory*, Sofia 2007, 43-78.
- Kyparissi-Apostolika 2001 = N. Kyparissi-Apostolika, *Τα Προϊστορικά κοσμήματα της Θεσσαλίας*, Athens 2001.
- Lamb 1936 = W. Lamb, *Excavations at Thermi in Lesbos*, Cambridge 1936.
- Lera 2009 = P. Lera, *Vendbanimet e Neolitit të vonë në Dërsnik dhe Barç*, Korçë 2009.
- Lera and Toucheas 2013 = P. Lera and G. Toucheas, 'Kallamas', in I. Gjipali, L. Përzhita and B. Muka (eds.), *Recent Archaeological Discoveries in Albania*, Tirana 2013, 34 - 39.
- Lichardus 2001 = J. Lichardus (ed.), *Forschungen in der Mikroregion von Drama (Südostbulgarien). Zusammenfassung der Hauptegebnisse der bulgarisch-deutschen Grabungen 1983-1999*, Bonn 2001.
- Marinescu-Bilcu 1974 = S. Marinescu-Bilcu, *Cultura Precucuteni pe teritoriul României* (Biblioteca de arheologie 22), Bucharest 1974.
- Marinescu-Bilcu 1981 = S. Marinescu-Bilcu, *Țirpești: From Prehistory to History in Eastern Romania* (BAR-IS 107), Oxford 1981.
- Morinz and Rozetti 1959 = A. Morinz and D.V. Rozetti, 'Cap. I. Din cele mai vechi timpuri și pînă la formarea bucureștilor', in I. Ionașcu (ed.), *Bucureștii de odinioară: în lumina săpăturilor arheologice*, Bucharest 1959, 11-47.
- Mylonas 1959 = G.E. Mylonas, *Agios Kosmas. An Early Bronze Age Settlement and Cemetery in Attica*, Princeton, N.J. 1959.

- Nordquist 1987 = G. Nordquist (1987), *A Middle Helladic Village: Asine in the Argolid*, (Boreas 16), Uppsala 1987.
- Papaefthimiou-Papantimou 2002 = E. Papaefthimiou-Papantimou, 'Εργαλεία υφαντικής από το Σέσκλο', *Egnatia* 6 (2002), 83-167.
- Prendi 1976 = F. Prendi, 'Neoliti dhe Eneoliti në Shqipëri', *Iliria* 6 (1976), 21-101.
- Prendi 2008 = F. Prendi, "La Culture Énéolithique Maliq II en Albanie du Sud-Est", in F. Prendi, *Archaeological Studies*, Prishtina 2008, 398-430.
- Prendi and Bunguri 2008 = F. Prendi and A. Bunguri, *Bronzi i Hersëm në Shqipëri/The Early Bronze Age in Albania*, Prishtina 2008.
- Roman 1977 = P. Roman, *The Late Copper Age Coşofeni Culture of South-East Europe*, (BAR-IS 32), Oxford 1977.
- Sampson 1985 = A. Sampson, *Manika, an Early Helladic Town in Chalkis*, Athens 1985.
- Sampson 1993 = A. Sampson, *Kaloverovrisi. A Bronze Age Settlement at Phylla, Euboea*, Athens 1993.
- Siros *et al.* 2007 = A. Siros, Chr. Tsagouli, M. Miteletsis and I. Vlastaridis, 'Σπήλαιο στη θέση «Καταρράκτες-Φράγμα» Σιδηροκάστρου', *AEMTH* 21 (2007), 355-362.
- Souyoudzoglou-Haywood 1999 = C. Souyoudzoglou-Haywood, *The Ionian Islands in the Bronze Age and Early Iron Age*, Liverpool 1999.
- Stefani 1997 = E. Stefani, 'Οικισμός της Ύστερης Εποχής του Χαλκού στο Αγγελοχώρι Ημαθίας: Ανασκαφή 1996, 1997', *AEMTH* 11 (1997), 101-108.
- Takaoglu 2006 = T. Takaoglu, 'The Late Neolithic in the Eastern Aegean. Excavations at Gülpınar in the Troad', *Hesperia* 75 (2006), 289-315.
- Tartaron 1996 = T.F. Tartaron, *Bronze Age Settlement and Subsistence in Southwestern Epirus, Greece*, unpubl. PhD diss., Boston University 1996.
- Taylour 1972 = W.D. Taylour, 'Excavations at Agios Stefanos', *BSA* 67 (1972), 205-270.
- Todorova 2002 = H. Todorova (ed.), *Durankulak 2. Die prähistorischen Gräbenfelder von Durankulak*, Sofia 2002.
- Tripathi 1988 = D.N. Tripathi (1988), *Bronzework of Mainland Greece from c. 2600 B.C. to c. 1450 B.C.* (SIMA-PB 69), Göteborg 1988.
- Tsountas 2000 = Chr. Tsountas, *Αί Προϊστορικοί Ακροπόλεις Διμηνίου και Σέσκλου*, Athens 2000 (First ed. 1908).
- Tzavela-Evjen 1984 = Ch. Tzavela-Evjen, *Αιθάρεις*, Athens 1984.
- Tzachili 1997 = I. Tzachili, *Υφαντική και υφάντρες στο Προϊστορικό Αιγαίο, 2000-1000 π.Χ.*, Heraklion 1997.
- Vokotopoulou 1969 = I.P. Vokotopoulou, 'Νέοι κιβωτιόσχημοι τάφοι της ΥΕ ΙΙΒ-Γ Περίόδου ἐξ Ἠπείρου', *ArchEph* 1969, 179-207.
- Yiouni 2008 = P. Yiouni, 'Η Νεολιθική Εποχή', in K.E. Zachos (ed.), *Το Αρχαιολογικό Μουσείο Ιωαννίνων*, Ioannina 2008, 35-42.
- Zachos and Douzougli 1999 = K.L. Zachos and A. Douzougli, 'Aegean Metallurgy: How Early and how Independent?', in P.B. Betancourt, V. Karageorghis, R. Laffineur and W.D. Niemeier (eds.), *Meletemata: Studies in Aegean Archaeology Presented to Malcolm H. Wiener as He Enters His 65th Year* (Aegaeum 20), Liege and Austin 1999, 959-968.