

# NEW RADIOCARBON DATES FOR THE CHALCOLITHIC AND BRONZE AGE AT DRAMA, SOUTHEAST BULGARIA

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## Abstract

*I discuss here radiocarbon dates from the sites of Drama–Merdzhumekya and Drama–Kayryaka that were obtained after 2011. The <sup>14</sup>C dates from Merdzhumekya were measured on charred plant remains from cultural deposits in the structures 006A and 041, which were dated in the final publication to the Early Chalcolithic (Karanovo V). In the case of structure 006A, the radiocarbon ages correspond to the expectations. The sample from structure 041 however, obviously comes from a much later feature dating to the second millennium BC. A connection between it and the nearby Bronze Age enclosure 009 cannot be ruled out. Particularly important are the dates from enclosure 009 itself. They are earlier than expected and fall in the first half of the third millennium BC, corresponding to the Early Bronze Age 2 period (EBA 2) or even earlier. That contradicts the typo-chronological approach to the pottery found in the ditch fill and affects all previous interpretations on chronology and cultural connections related to the enclosure. However, the dating results fit well into the emerging broader picture of the Bronze Age enclosures in Thrace. In contrast to previous interpretations, the Merdzhumekya enclosure was probably used and maintained for a long period of time. The Bronze Age grave 27 at Kayryaka can be dated to the very end of the third millennium BC, i.e., the transition from the EBA 3 period to the Middle Bronze Age (MBA). This result narrows previous estimates based on ceramic typology.*

**Keywords:** Drama – Merdzhumekya – Kayryaka – Karanovo V – EBA 3 – MBA – ritual enclosure.

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### Background of research

In 1983, a joint Bulgarian-German research project was launched to explore archaeological sites in the middle Kalnitsa River Valley, near the village of Drama. The excavations were carried out without interruption until 2002 (Fol et al. 1989; Lichardus et al. 1996, 2000, and 2003; Echt 2008) and were directed by Jan Lichardus (Saarland University, Saarbrücken) and Iliya Iliev (Yambol Regional Museum of History). In the 1980s, the excavations were focused on a small, stratified ‘tell settlement’ atop a flat natural elevation called Merdzhumekya, and on a flat site in the nearby Gerena locality. Both sites were located at the bottom of the valley near the modern bed of the Kalnitsa River. Gerena yielded features and finds dating back to the Late Neolithic (Karanovo III and III/IV). The settlement remains on top of Merdzhumekya can be dated to the Karanovo V and the very beginning of the Karanovo VI period (Early and Late Chalcolithic). As early as 1983, a much later feature was uncovered at Merdzhumekya, which is one of the main focuses of this paper: the circular enclosure 009, initially dated to the MBA. In the early 1990s, the southern and eastern slopes of the Kalnitsa Valley were increasingly included in the research efforts. At the southern edge of the valley, a long-used ritual site was discovered in the Kayryaka locality. The following multi-year excavations yielded two Bronze Age graves, one of them also being part of this study (grave 27), an Iron Age pit field, and a Roman-period cemetery with flat graves and at least one burial mound.

No comprehensive final publications are available for any of these sites. Moreover, for two decades, radiocarbon dating has never been the main research target at Drama. For the first time in 1999, a total of 48 samples were selected for measurement consisting of faunal remains (studied by Norbert Benecke) and wood from features at Gerena and Merdzhumekya. These materials were analyzed at the former  $^{14}\text{C}$  laboratory of the German Archaeological Institute in Berlin directed by Jochen GÖrsdorf. It turned out that only six of the 48 samples were in a state of preservation that enabled  $^{14}\text{C}$  dating. The reason for this was the low collagen content of the bones. Similar problems arose with the preservation of the wood samples. When the material had been processed, the carbon contents in almost all cases were too low to enable reliable measurements. Therefore, after the end of the 2002 field season, only these six radiocarbon dates were finally available from the two decades of investigations. This situation changed in the next decade. In 2006, fourteen animal bones were selected for measurement as part of a project on the chronology and periodization of the Karanovo VI settlement site at Merdzhumekya (directed by Rudolf Echt) funded by the German Research Foundation. The measurements were carried out at the former AMS laboratory of the University of Erlangen directed by Andreas Scharf. Between 2008–11, further funding from the German Research Foundation enabled the publication of the excavation results at the southeast slope of Merdzhumekya (directed by Ralf Gleser). A total of 21 samples were selected in 2009 and 2011 and submitted for measurement to the lab in Erlangen. They were animal bones from the Late Chalcolithic and the earliest Bronze Age (or the so-called ‘transitional period’, i.e., Cernavodă III)

settlement remains discovered at the southeast slope of Merdzhumekya, as well as animal bones from cultural deposits atop that hill. Combined with the Berlin dates, these radiocarbon measurements were discussed in detail in two publications (Gleser 2011; Gleser & Thomas 2012, 283ff). The dates of the Chalcolithic were as expected. Those of the Cernavodă III period, however, were something completely new that partially closed the wide gap that had previously divided the Final Chalcolithic and the beginning of the EBA (i.e., EBA 1 or the Ezero stage) in Upper Thrace.

After 2011, further radiocarbon dates of a limited number became available thanks to funding from the German Research Foundation and the University of Münster. In particular, the evaluation of plant remains from the Bronze Age enclosure 009 on Merdzhumekya by Elena Marinova-Wolff provided an opportunity for this at the *Social Dimensions of Food in the Prehistoric Balkans* conference in Heidelberg in 2015. However, the radiocarbon dates could not yet be considered in the publication of the results based on the archaeobotanical research (Gleser & Marinova 2018). They are presented in this contribution. As a monograph on the burials at Kayryaka including the charred plant remains analyzed by Elena Marinova-Wolff is nearing completion (Gleser & Hessel 2026), the radiocarbon dating has also become possible for graves of that site. In what follows, the date of the Bronze Age grave 27 is presented here. Two further dates, of an Early Iron Age and a Roman period burial will be published in the monograph announced.

## **Merdzhumekya**

### *Overview of the Chalcolithic settlement site*

At Merdzhumekya, on an area of about 13,000 m<sup>2</sup>, several settlement phases were unearthed on top of each other protected by a circular ditch enclosure (feature 360). All in all, the remains of more than 60 houses from the Early Chalcolithic (Karanovo V; cf. Fecht 2016) and at least 25 houses from the Late Chalcolithic (early Karanovo VI) were excavated and recorded. Radiocarbon dates set the beginning of the Merdzhumekya settlement around the 48th or 47th century cal. BC (Gleser 2011; Gleser & Thomas 2012, 285, fig. VIII/2). It existed without interruption until the 44th century cal. BC, at the very least. The settlement seems to have been abandoned after the mid-fifth millennium, at the time of the second phase of the Karanovo VI period. However, house remains of this phase that had initially been present at Merdzhumekya were completely eroded. Their ruins were only found in the upper filling of the Chalcolithic ditch 360 and in the colluvial soils at the foot of the hill to the southeast. Loss of cultural deposits of unknown thickness on top of the hill in the last millennia had therefore to be presumed. The still preserved structures and cultural deposits of the early Karanovo VI were badly affected by erosion, burrowing animals, and modern agriculture. The settlement layers and organic materials of the Karanovo V period were much better preserved.

### *New radiocarbon dates from the Chalcolithic settlement site*

In his dissertation on the Early Chalcolithic settlement site at Merdzhumekya,

Frank Fecht (2016, 32) demonstrated that the Karanovo V period structures had been arranged in two different spatial patterns and that both represent several stages in the settlement's development. A concentration of buildings in the center consists of 29 houses that were built close together and partially overlapped each other. There, he identified five stages of construction (Fecht 2016, 175ff, fig. 80). This central concentration was surrounded by a peripheral rectangular belt consisting of 31 houses (fig. 1). Nor were all these structures in contemporaneous use, too. Overlaps which are best recorded at the western corner of the exterior structure belt indicate a multiphase development. This settlement pattern seems to have been maintained during the Karanovo VI period (Lichardus et al. 2000, 51, fig. 19; 2004, 41, figs. 4 and 5). In 2012, three more samples from the Merdzhumekya settlement site were measured at the AMS lab of the University of Erlangen. The resulting dates on charred plant remains supplement the series of radiocarbon dates already published in the 2012 monograph by Gleser & Thomas. Two of them (Erl-16665 and Erl-16666) were already mentioned by F. Fecht (2016, 244). They are connected to the structure 006A which belongs stratigraphically to the second stage of the central building concentration atop the hill. Sample Erl-16665 consisted of cereal grains that were recovered in 1984 next to the thermal installation 013 in sector G09, at a depth of 1.31 m BD (cf. Fecht 2016, 245). Sample Erl-16666 consisted also of cereal grains that were found in 1985 in sector H09, ca. 3 m to the east and 3 m to the north, at a depth of 1.25 m BD. According to F. Fecht, that area and the sample were also connected to the building 006A. In this case, however, the spatial correlation can only be described as a conjecture. Nevertheless, both measurements correspond to each other (table 1) and they also fit well into the series of dates already available from Merdzhumekya, all of them on animal bones. The results also meet expectations regarding the absolute chronology of samples from the Karanovo V period or the 'Maritsa culture' in Upper Thrace that can be dated to approximately between the 49th and the 47th century BC (Krauß 2008, 140, fig. 45; 2020, 36, fig. 7). However, the number of radiocarbon dates from the central structure concentration at Merdzhumekya with its stratigraphical overlaps is too small to allow further conclusions to be drawn through statistical modelling.

The third sample submitted to Erlangen in 2012 (Erl-16667) does not fit into the range of what would be expected for the Chalcolithic. Obviously, it is related to a period that is usually difficult to grasp in Upper Thrace. This is the MBA, i.e., the first half of the second millennium BC. The sample material (remains of a short-lived plant) and its  $^{13}\text{C}$  content suggest reliability of the dating result. The plant remains were uncovered in 1988 during the excavation of a feature initially related to a structure labeled as 014, at the western edge of the built-up area of the settlement, and conceived as belonging stratigraphically to the Karanovo VI period (Lichardus et al. 1996, 16, fig. 3; 2000, 51, fig. 19). According to the field records, the material was collected when digging a feature labeled as 'posthole P1' in sector E11. After a re-evaluation of the initial documentation, the feature was finally classified as 'P041/10', i.e., postpit 10 in the structure 041 of the Karanovo





V period (Fecht 2016, 268). The location of this feature in the area of the structure 041 is shown in figure 2. The northern and eastern area of the structure 041 was truncated by the enclosure 009. Feature P10 is located nearby the ditch, ca. 3 m from its southern edge, and was recorded together with other pits that form a row. The radiocarbon date indicates activities in this area of the settlement during the MBA. P10 could thus belong even to several pits within or the outside the enclosed area that were already dated to the MBA at the time of excavation (Bertemes 2002, 131, fig. 5).

| Lab code  | Material                                                            | PMC   | PMC error | <sup>14</sup> C age BP | Delta C13 | <sup>14</sup> C age cal. BC (2σ)      |
|-----------|---------------------------------------------------------------------|-------|-----------|------------------------|-----------|---------------------------------------|
| Erl-16665 | charred grains<br>( <i>Hordeum vulgare</i> )                        | 48.84 | 0.39      | 5756±65                | -23.5     | 4780–4753 (2.3%)<br>4728–4452 (93.2%) |
| Erl-16666 | charred grains<br>( <i>Hordeum vulgare</i> and<br><i>Triticum</i> ) | 48.74 | 0.41      | 5774±67                | -22.4     | 4786–4488 (93.3%)<br>4476–4458 (2.2%) |
| Erl-16667 | charred seeds<br>( <i>Vicia ervilia</i> )                           | 66.54 | 0.47      | 3273±57                | -22.9     | 1687–1427 (95.4%)                     |

**Table 1.** List of radiocarbon dates from Drama–Merdzhumekya measured at Erlangen in 2012. The 2021 version of OxCal v4.4.4 program was used for <sup>14</sup>C age calibration applying the IntCal 20 calibration curve (Reimer et al. 2020).

### Overview of enclosure 009

Enclosure 009 consisting of a single circular ditch with a diameter of nearly 40 m and the contemporaneous structure 370 were unearthed on top of the Merdzhumekja hill and on its northwest slope. More MBA features were discovered sporadically at the tell site, including remains of a palisade that stretched along the foot of the hill (Bertemes 2002, 125, fig. 2). However, due to erosion, it is no longer possible to determine whether Merdzhumekya was regularly occupied in the MBA or not. Between 1984 and 1986, ditch 009 was completely excavated and recorded under the direction of François Bertemes who submitted a habilitation thesis on the subject at the Saarland University in 1997 (Bertemes 1997 and 1998). Due to erosion, the width and depth of the ditch varied considerably. The depth was up to 3 m at the highest point of the slope and 1.20 m at the lowest. Neither were there remains of an accompanying rampart or palisade nor evidence of a gate structure. In the highest area of the elevation, a single interruption of the ditch provided access to the interior. Several pits were found inside and outside the enclosed area that were probably contemporaneous to the circular ditch (Bertemes 2002, 131, fig. 5). During the excavations, the ‘negative’ digging technique for cuts was practiced: the fills were removed by following the natural configuration of the layers whenever possible. To obtain transverse sections, baulks were set up at regular intervals. Longitudinal sections were not recorded. A total of 56 cross-sections were recorded. Several phases of digging

and filling were identified. The following four layers were distinguished throughout the entire feature (from top to bottom): a, bc, d1, and d2. In terms of color and compactness, further differentiation was possible. Two more layers, e and f, were only identified at some spots at the bottom of the ditch. With exception of layer bc and the lower part of layer a, the sediments resulted from natural filling processes of seasonal erosion caused by wind and rain. The sediments of layer bc and the lowest a (a6) appeared to be mostly very coarse, and they contained, among others, debris of burnt daub, charred plant remains, and rocks that had been exposed to fire. These layers were interpreted as the result of final activities related to an intentional filling of the ditch. The time interval between these events and the digging of the ditch or the timespan of its primary use as a cut feature remained undetermined.

According to F. Bertemes, a detailed analysis of the preservation of artifacts in the ditch fill and their find contexts made it possible to distinguish between intentionally deposited objects and discarded items or refuse (Bertemes 1998, 324). The intentionally deposited objects included, for example, pottery vessels found individually or in associated groups at the base of layers bc and a, as well as associated groups of loom weights, spindle whorls, and perforated pottery sherds. Many artifacts ended up in the ditch with the burnt debris from layer bc, what was recorded in numerous drawings of layouts and cross-sections. These include fragments of 'life-size' ceramic figurines of humans and animals as well as clay bins (unfortunately never published), pottery sherds, faunal remains, and so on. These objects were found in obvious concentrations. Deposits were usually identified left and right of the entrance, and east, west, and north of the enclosure (Bertemes 2002, 128f, figs. 3 and 4; 2019, 116, fig. 2). Packed layers of rocks and daub pieces covered the depositions. Artifacts of an earlier date were usually found in the ditch fill mainly where it cut Chalcolithic and later cultural deposits; they were intrusive due to the erosion of its sides. The single radiocarbon date available for enclosure 009 so far (Bln-5116) was measured on a bone recovered from sector H08 at the level of layer b. It falls in the Cernavodă I period of the early fourth millennium BC and thus demonstrates that layer b was mixed with earlier materials (Gleser 2011, 191f). According to F. Bertemes, only 13% of the material found in enclosure 009 proved to be from the Bronze Age at all.

The circular enclosure was interpreted as a sanctuary, and there are several Thracian parallels to its constructional concept (Bertemes 1998, 2002, and 2019; Nikolova 2021). The well-preserved vessels were interpreted as offerings containing liquids and food. The botanical investigations support this suggestion in some cases. Inside some vessels, very pure concentrations of seeds were found confirming the hypothesis that it might have been food offerings. However, only a small selection of artifacts was published in the preliminary reports on the Drama excavations. These are mainly well-preserved ceramic vessels and a few loom weights. They all originate from layers bc or a. A schematic representation of the distribution of published vessels found in the ditch fill is shown in figure 3; they were found in sectors F07, F11, G07, and H09.

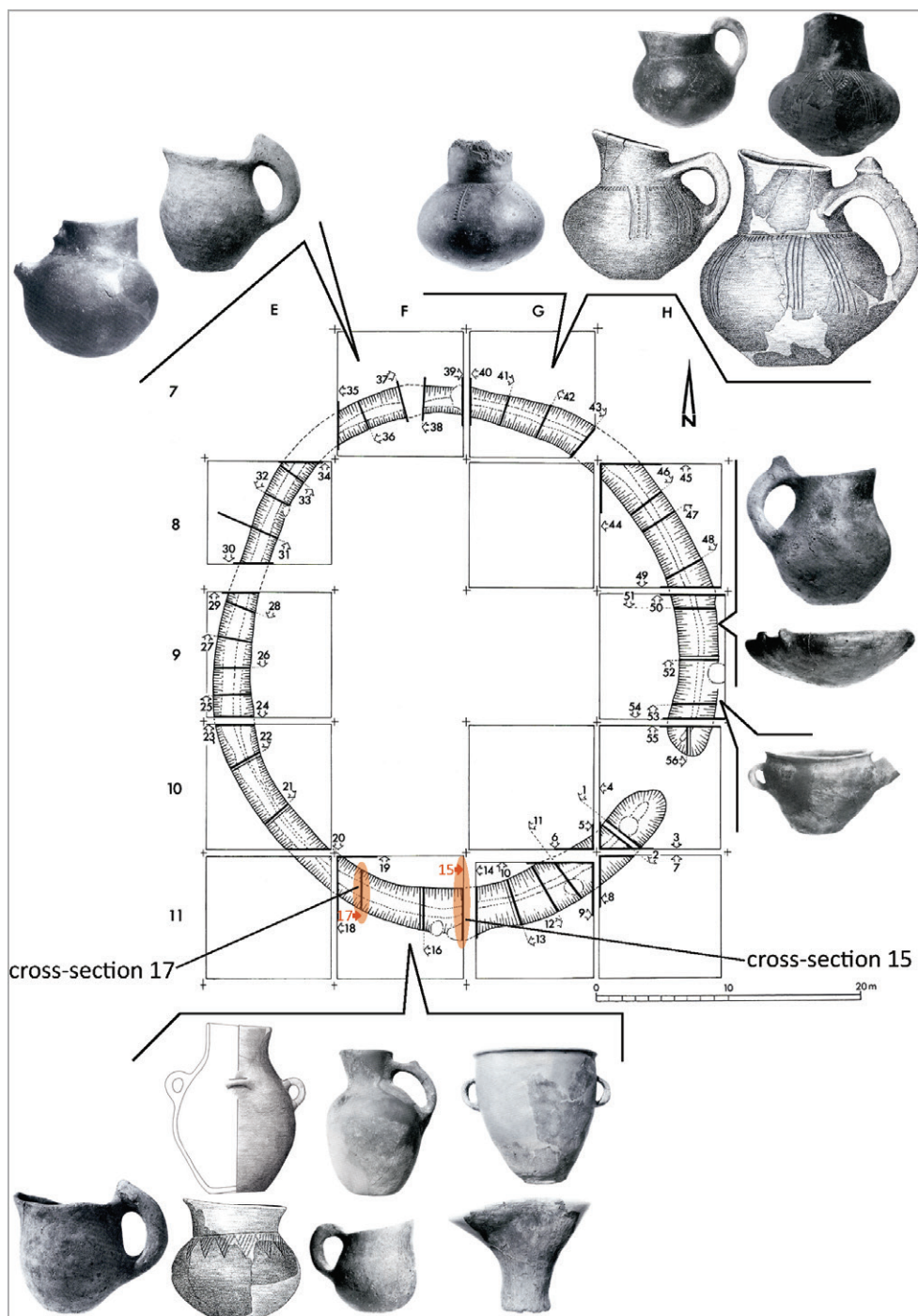


**Figure 3.** *Spatial distribution of published vessels from enclosure 009 at Drama–Merdzhumekya. Cross-sections 15 and 17 are marked in red (cf. figs. 6 and 7). Image Credit: Fol et al. 1989, Gleser & Marinova 2018, and the author.*

*Terminology and dating of enclosure 009*

In the 1980s and 1990s, the pottery vessels discovered in the fill of the enclosure 009, i.e., in layers bc and the lowest a, were compared generally to ceramics from Nova Zagora, Dyadovo, Yunatsite, Sveti Kirilovo, and Veselinovo (Fol. et al. 1989, 32). Although there were numerous indications of renovations along the ditch course and in the fill, its use has always been considered to have been limited to a short period of time. Based on typological criteria, the artifacts were considered to be later than the materials excavated at Tell Ezero and earlier than those from Tell Galabovo. F. Bertemes (1997, 326, fig. 2) synchronized the ceramics mainly with those from building levels 3 to 1 at Tell Nova Zagora. Therefore, enclosure 009 was initially dated to an early MBA phase or the so-called ‘Nova Zagora culture’, in accordance to the terminology of Rumen Katincharov. Since R. Katincharov (1991, 98; cf. Leshtakov 2015, 15) – the excavator of Tell Nova Zagora and at the time the biggest authority on the Bronze Age in Thrace – drew parallels between Nova Zagora in south Bulgaria and layers Troy III to V/VI, and synchronized the latter with the Middle Helladic I period in Greece, this is the explanation not only for Katincharov’s use of the term MBA in relation to Nova Zagora in Thrace but also for its use by the excavators in Drama. Although seen as parallel to Troy III to V, too (Fol et al. 1989, 88, fig. 29), the latter nevertheless drew parallels to the Early Helladic II and III periods (EH II and III; Lichardus et al. 2004, 51; Echt 2008, 240).

According to the terminology commonly used for Bulgarian Thrace today, the ‘Nova Zagora culture’ is no longer referred to. The respective finds from Tell Nova Zagora are now dated to the EBA 3 (or Sveti Kirilovo) period of the second half of the third millennium BC, while the building levels 9–5 at Tell Ezero are dated to the EBA 1 and 2 periods; these terms were introduced by Krassimir Leshtakov (1993a and 2015, 12ff) in the early 1990s during his research at Tell Galabovo. Based on the now numerous radiocarbon dates, the EBA 3 is set between 2500/2400 and 2100/2000 BC (Alexandrov 2020, 251, fig. 1; Tsirtsoni 2021). According to this terminology and keeping in mind the absolute dating of the EH II and III periods in the Aegean between ca. 2700–2000 BC (cf. among others Shelmerdine 2008, 4, fig. 1/1), the enclosure at Drama would also date to the EBA 3. Various authors have already taken it into account and implemented it (e.g., Leshtakov 1996, 425 and 2021, 17; Gleser 2011, 191; Gleser & Marinova 2018; Bertemes 2019, 101; Nikolova 2021, 129). However, since the EBA finds from many tell sites in Upper Thrace have not been thoroughly published – and this applies to Nova Zagora in particular – and the eponymous tell site at Kirilovo is greatly underresearched, it’s difficult to attempt at synchronizing the finds from Drama to EBA 3 sites in Upper Thrace. It should be noted that Tell Galabovo shows continuous settlement life throughout the EBA 3 and the next period; in this respect, this is the only tell site in Upper Thrace for the time being (Leshtakov 2002, 2015, and 2021, 14/20). The uppermost building levels 3 to 1 are attributed to the MBA *stricto sensu*, that is estimated to have begun at the very end of the third millennium BC (Tsirtsoni 2021, 244).

The published artifacts from Drama may be slightly later than were initially dated by F. Bertemes, especially compared to the pottery assemblages from Tell Galabovo. As early as 1993, K. Leshtakov (1993b, 210/219) pointed out stylistic similarities between ceramics from building level 2 at Galabovo and the circular enclosure at Drama. Thanks to the very good publication record, such stylistic parallels can now be demonstrated even for building levels 5 to 1 at Galabovo (figs. 4 and 5). In terms of shape and decoration, nearly all published vessels from Drama show significant parallels in the late EBA 3 and the MBA layers of Tell Galabovo (cf. Leshtakov 2015, figs. 13–34). This applies to both decorated and undecorated jugs (figs. 4 and 5/2) as well as to a bowl (fig. 5/4), a spouted bowl (fig. 5/6), a funnel (fig. 5/8), and a two-handled jar (fig. 5/10). However, bottles or ‘amphorae’ also appear in ditch 009 (fig. 5/1) that have no parallels at Galabovo. To my knowledge, they are rare even in Upper Thrace, Turkish Thrace, and the neighboring regions. They are undecorated but feature two handles placed horizontally facing each other at the shoulder in combination with oblong horizontal knobs or vertical handles. Bottles also appear with four vertical handles (cf. Fol & Lichardus 1988, 249, cat. No. 153 and fig. 188).

Two samples on charred plant remains from ditch 009 were measured in 2016 at the radiocarbon lab of Beta Analytic Inc. in Miami, Florida (table 2). In order to avoid the problem of earlier intrusions as far as possible, samples were selected that could be firmly related to the ditch fill’s anthropogenic deposits. One sample (Beta-838401) consisted of *Lallemantia iberica* seeds, an oil plant that apparently originated in Anatolia and areas further east and was spread throughout the Aegean and the Balkans in the Bronze Age (Gleser & Marinova 2018, 241f). A lump of ca. 40 recognizable seeds and several fragments were stored in the bottle shown in figure 5/1 (cf. Gleser & Marinova 2018, 241, fig. 14/5). The bottle was found in 1988 during cleaning of sector F11, 8.28 m north of the western cross-section of this sector, 3.36 m BD, in the contact zone of layers a and b (Bertemes 1997, 546, list 6). There is no doubt about the intentional deposition of the bottle in the ditch.

The second sample (Beta-838402) consisted of charred barley grains recovered from sector F11 in 1984, 2.50 m BD. To illustrate the find context, figure 6 shows a drawing of cross-section 15, which is the eastern cross-section of sector F11. Based on the level of sampling, it is obvious that the barley grains come from the lower part of layer a, where debris of burnt daub and rocks was concentrated. The grains seem to have ended up in the fill together with these materials, which suggests stratigraphical correlation and thus temporal connection between them. The barley grains were found ca. 0.80 m higher but obviously in the same anthropogenic deposits as the bottle, which was uncovered somewhat further west. The elevation difference could be explained by the slope of the terrain, which is between 10 and 12%.

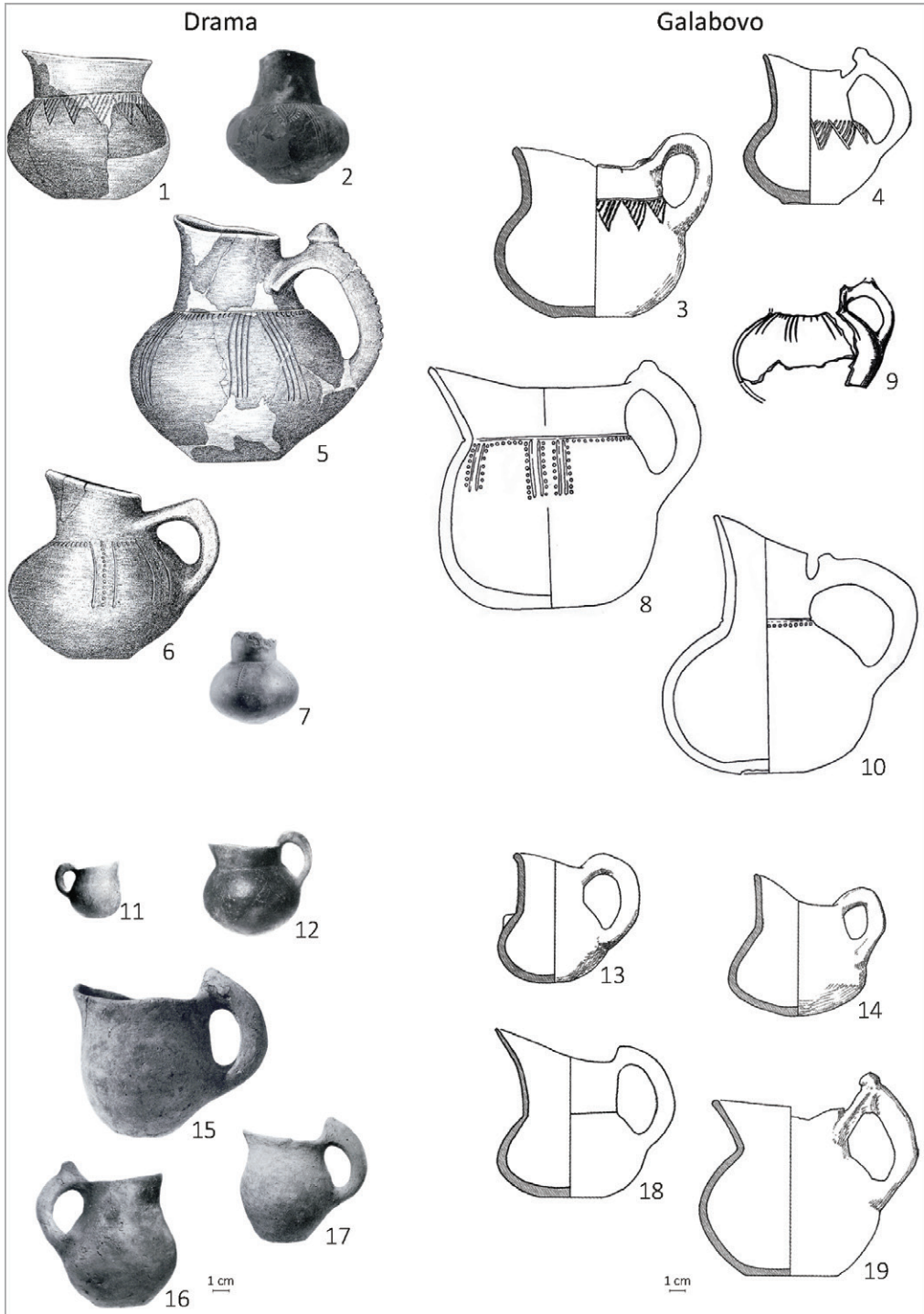


**Figure 4.** Comparison of jugs from enclosure 009 at Drama–Merdzhumekya and Tell Galabovo. Image Credit: Fol et al. 1989; Leshtakov 2021, figs. 4, 5, and 9; Ilieva 2021, fig. 4, and the author.

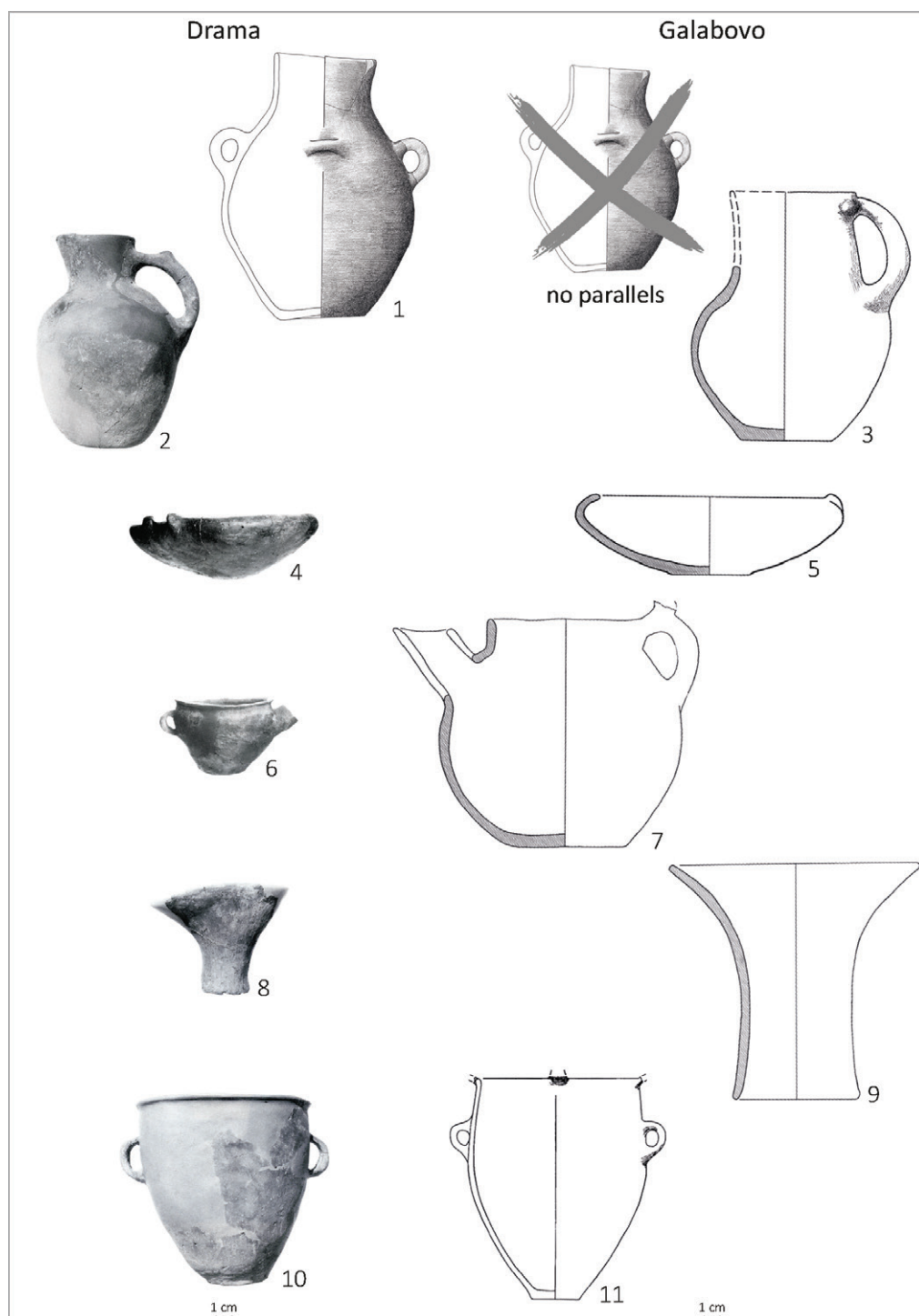


**Figure 5.** Comparison of pottery from enclosure 009 at Drama–Merdzhumekya and Tell Galabovo. Image Credit: Fol et al. 1989; Leshtakov 2021, figs. 4 and 5; and the author.

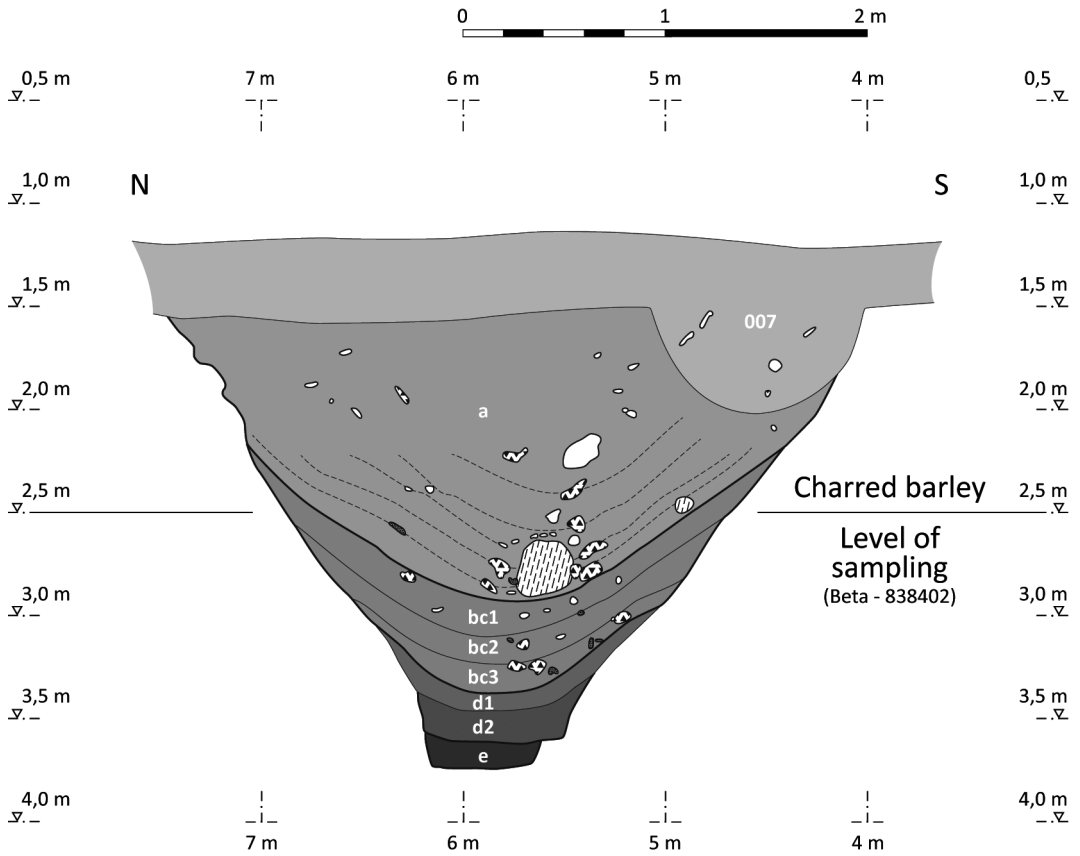


**Figure 6.** Cross-section 15 of enclosure 009 at Drama–Merdzhumekya showing the level of the sample collection. Image Credit: Fol et al. 1989, 25, fig. 7; F. Bertemes; and the author.

| Lab code    | Material                                    | $^{14}\text{C}$ age BP | Delta C13 | $^{14}\text{C}$ age cal. BC (2 $\sigma$ )                  |
|-------------|---------------------------------------------|------------------------|-----------|------------------------------------------------------------|
| Beta-838401 | charred seeds of <i>Lallemantia Iberica</i> | 4130 $\pm$ 30          | -22.4     | 2871–2799 (28.3%)<br>2781–2617 (61.2%)<br>2611–2581 (6.0%) |
| Beta-838402 | charred barley grains                       | 4180 $\pm$ 30          | -23.9     | 2887–2836 (21.8%)<br>2819–2666 (72.0%)<br>2648–2636 (1.7%) |

**Table 2.** Radiocarbon dates from the Bronze Age enclosure 009 at Drama–Merdzhumekya measured at Beta Analytic in 2016. The 2021 version of OxCal v4.4.4 program was used for  $^{14}\text{C}$  age calibration applying the IntCal 20 calibration curve (Reimer et al. 2020).

### *Discussion of enclosure 009*

Since no radiocarbon dates were ever measured during or soon after the excavation project, the dating of the enclosure and the possible periodization of activities related to it have always remained uncertain. Before the fieldwork was completed in 2002, it was usually assumed that the enclosure was contemporaneous with the A1 stage of the Central European EBA terminology (Lichardus et al. 2004, 51). However, since the concept of the ‘short’ radiocarbon chronology was adopted by the Drama research team due to refusing the Central European EBA radiocarbon chronology established in the 1990s, the ditch was dated to the first half of the second millennium BC instead of considering the period between 2200–2000 BC, which had already then been comparable to the Central European EBA A1 stage (Lichardus et al. 2003, 210, fig. 3). It was only in the latest publication when the start of the ‘Nova Zagora culture’ was dated to ca. 2100 BC (Lichardus et al. 2004, 60). Based on radiocarbon dates available for the EBA 3 period in Thrace today (Tsirtsoni 2021, fig. 11 and table 1), it seems plausible to assume that the enclosure was constructed and maintained in the second half of the third millennium BC, or that the final deposits in the ditch were made during this period, at the very least. Given that the pottery found at Drama bears strong stylistic similarities to the pottery from the upper layers of Tell Galabovo (building levels 3 to 1) that has been attributed to the MBA, a dating to the first half of the second millennium cannot be also ruled out. However, the results of the stylistic dating approach for the Drama pottery based on a comparison with Galabovo show clear differences to the radiocarbon dates in table 2.

In light of what has just been said, the dates in table 2 are earlier than expected. They roughly cover the first half of the third millennium BC and obviously indicate periods prior to the MBA or even the EBA 3. In order to illustrate this, table 3 includes selected radiocarbon dates from Tell Ezero and Tell Yunatsite – all of them measured decades ago at the radiocarbon lab in Berlin – that seem to be ‘contemporaneous’ to the Drama dates and that have stratigraphically been attributed to the EBA 1 and 2. On the other hand, dates from Tell Galabovo (building level 4) and Tell Nova Zagora are also presented that fall in the EBA 3, the latter with quite big statistical errors. The similarity of the Drama dates to Ezero and Yunatsite is obvious as well as their dissimilarity to Nova Zagora and Galabovo. They also precede the dates for Troy III to V (Easton & Weninger 2023, 403, table 2) and all the dates for Kanlıgeçit in Turkish Thrace (Özdoğan & Parzinger 2012, 276, table 64), even though the layers of the 2 and 3 periods of the latter site yielded ceramics, which are typologically comparable to those from enclosure 009 (Ambronn 2012, 126). It’s difficult to find an explanation for the dating discrepancy; either the reliability of the dates should be questioned in general – what I do not assume – or the dated samples are indeed as old as they were measured to be. In the case of the bottle, the radiocarbon evidence of the seeds firmly dates the artifact itself and, with less security, the act of its deposition. In that case, the ditch could have existed during the period indicated by the radiocarbon dates, and the sediments labeled as layers bc and the lower a could have

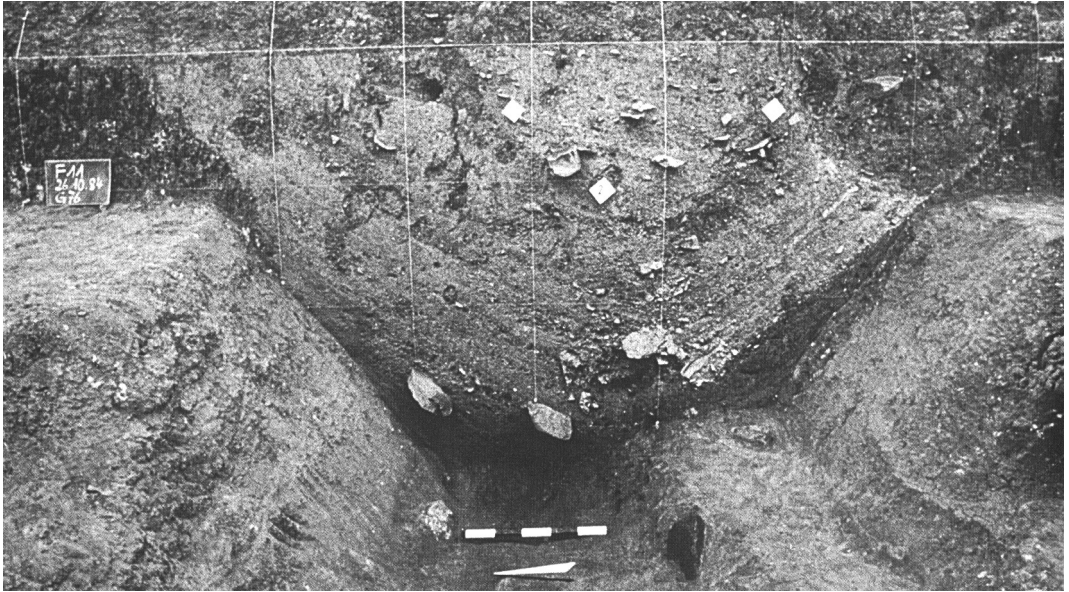


**Figure 7.** *Cross-section 17 of enclosure 009 in sector F11 at Drama–Merdzhumekya. Image Credit: Lichardus et al. 2004, 50.*

been deposited in it during this time span. With somewhat less certainty, this could also apply to the barley grains. In any case, the dates contradict the typo-chronological dating of the pottery from the ditch fill to the EBA 3 or the MBA, respectively. The question therefore is whether the dated samples could be strictly related to these periods. In any way, this is not the case: Keeping in mind the above-mentioned bones from layer b dated to the fourth millennium BC (Blñ-5116), the barley grains could with some probability also be earlier, i.e., intrusive materials. As for the bottle with its distinct combination of vertical and horizontal handles at the shoulder, several parallels were published from two more sites in Upper Thrace: a few examples from Razkopenitsa and one from Ezero (Detev 1950, 176f, figs. 112 and 113/B; 1981, 178, fig. 49/2(?); Leshtakov 2014, 329, fig. 6/2 and 3; 1999, 80, fig. II/64). However, they are obviously not entirely accurate, and none of them have a secure stratigraphic position. According to Dr. Denitsa Ilieva (St. Kliment Ohridski University of Sofia), to whom I owe this information, it's not that this vessel type was particularly rare in Thrace, however, but rather that relatively few intact examples have been published. The storage container from Drama and its contents might have been valuable objects that were passed down through generations and eventually deposited in the EBA 3 period. However, the bottle is obviously not common for the EBA 2.

Leaving aside the uncertainties of the local find contexts, the enclosure's radiocarbon dating fits well into the emerging broader picture of the Bronze Age enclosure phenomenon in Thrace. According to Denitsa Ilieva, it '*...seems to have begun at the end of the Early Bronze Age II, as evidenced by some of the recently excavated sites such as Polski Gradets*

(Nikov & Georgieva 2022; Nikov 2024, 112), and it had already been mentioned in earlier publications, including on *Cherna gora* and *Ovcharitsa II*. Some of these sites continued to exist until the beginning of the MBA (*Polski Gradets* and *Cherna gora*), while others, such as *Bikovo*, are dated entirely to the MBA.<sup>1</sup>

In conclusion, the enclosure at Drama was probably constructed, maintained, and used for a long period of time during the EBA and MBA *stricto sensu*, respectively. Considering the radiocarbon date of the *Vicia ervilia* seeds from Drama (Erl-16667), this seems all the more likely. Unfortunately, the 1980s graphical and written records for the ditch's stratigraphy provide no decisive evidence of a long-time and multi-period use of the enclosure. However, when comparing photos with drawings of cross-sections, indications of complex backfilling events are clearly visible. An illustration to this is shown in figure 7, a photo of cross-section 17 in sector F11 (cf. the drawing in figure 6). This is the only one that has been published to date.

| Lab code   | Site                 | Material     | <sup>14</sup> C age BP | <sup>14</sup> C age cal. BC (95.4%) |
|------------|----------------------|--------------|------------------------|-------------------------------------|
| Bln-3671   | Yunatsite, level 13  | seeds        | 4180±50                | 2896–2621                           |
| Bln-3664   | Yunatsite, level 8   | seeds        | 4140±50                | 2878–2581                           |
| Bln-3665   | Yunatsite, level 9   | charred wood | 4100±50                | 2873–2496                           |
| Bln-3663   | Yunatsite, level 8   | seeds        | 4100±50                | 2873–2496                           |
| Bln-3669   | Yunatsite, level 10  | seeds        | 4090±50                | 2872–2491                           |
| Bln-1836   | Ezero, level 12      | charred wood | 4160±55                | 2888–2581                           |
| Bln-1829   | Ezero, level 7       | charred wood | 4165±40                | 2886–2624                           |
| Bln-1824   | Ezero, level 4       | seeds        | 4135±65                | 2888–2500                           |
| Bln-4101   | Galabovo, level 4    | charred wood | 3890±80                | 2575–2139                           |
| Bln-4102   | Galabovo, level 4    | charred wood | 3745±50                | 2332–1980                           |
| Bln-1576a  | Nova Zagora, level 8 | charred wood | 4041±60                | 2866–2461                           |
| Bln-2239   | Nova Zagora, level 8 | charred wood | 3840±40                | 2461–2155                           |
| Bln-1150   | Nova Zagora, level 6 | seeds        | 3972±100               | 2866–2201                           |
| Bln-1150 A | Nova Zagora, level 6 | seeds        | 3913±100               | 2839–2046                           |
| Bln-1154   | Nova Zagora, level 6 | seeds        | 3886±100               | 2829–2036                           |
| Bln-1154 A | Nova Zagora, level 6 | seeds        | 3900±100               | 2834–2041                           |
| Bln-1149   | Nova Zagora, level 5 | seeds        | 3872±100               | 2619–2033                           |
| Bln-1153   | Nova Zagora, level 5 | seeds        | 3826±100               | 2568–1980                           |

**Table 3.** Selected radiocarbon dates from Yunatsite and Ezero compared to dates from Galabovo and Nova Zagora (after Tsirtsoni 2021, table 1). The measurements for enclosure 009 at Drama (cf. table 2) match the date range of the EBA 1 and 2 periods highlighted in a darker shade. The EBA 3 dates are highlighted in a lighter shade.

<sup>1</sup> E-mail correspondence from 5 October 2025.

## Kayryaka

Kayryaka is a natural elevation formed by erosion situated directly southeast of the village of Drama. Large scale excavations were carried out there in 1992, 1994, 1995, and 2002 (Lichardus et al. 1996, 2000, 2002, and 2003). The same excavation methods were used as at Merdzhumekya. An orthogonal grid with square sectors separated by baulks was set up supplemented by smaller test trenches. At least 100 pits and many stone features from the Iron Age were found that were identified as elements of a ritual site. Eight human burials dating to the Iron Age were also uncovered. The ritual use of the site dates even further back; two Bronze Age graves also came to light (graves 27 and 53, the latter dating to the Late Bronze Age). The site preserved its symbolic significance until the time of Roman rule in Thrace. A cemetery of this period also was discovered and 57 graves were excavated. The burial ground at Kayryaka was in use from the first century AD until the Late Antiquity.

### *Overview of grave 27*

Grave 27 was excavated in 1994; it was located in sector D08. A child aged between 8 and 9 years was interred in a pit. The body was placed in a crouched position on the left side, with the head facing southwest. The only grave offering was a plain juglet placed upside down in front of the upper body (fig. 8). Jugs were a common vessel type in Upper Thrace during the Bronze Age, from the early to the late periods, and the typological comparison is fraught with considerable uncertainty. The vessel shape, its short conical base, rounded belly and raised rim prompted Jan Lichardus to search for parallels in the lower Danube region. He pointed to jugs of the early Monteoru culture in Moldavia and ultimately narrowed down the dating range of the Drama piece to the Monteoru Ic3 phase (Lichardus et al. 2003, 210, table 3). Comparable forms would also occur with the jugs of stages II and III of the Tei culture in Muntenia that could be synchronized to the MH III / LH I stages in the Aegean and to the A2 and A3 stages of the Central European EBA chronology (cf. Lichardus et al. 2002, 135f). Based on these considerations, grave 27 would date to the end of the EBA or the MBA, respectively, in Upper Thrace, approximately in a time span between the 22nd/21st to the 17th/16th century BC (cf. Leshtakov 2009, 61; Leshtakov & Tsirtsoni 2016, 481ff; Alexandrov 2020, 251, fig. 1; Krauss 2024). However, research on this period in both Upper Thrace and Bulgaria as a whole is hampered by inconsistent terminology, and moreover, only a few sites are known (Krauss 2024, 182, fig. 9; Leshtakov & Tsirtsoni 2016, 484, fig. 4; Tsirtsoni 2021, 267, fig. 11). At a first glance, a look to Romania is making it possible to narrow down the absolute chronological framework of the typo-chronological approach. Radiocarbon ages imply that the Monteoru Ic3 phase in eastern Romania can be dated between ca. 2200 and 2000 BC (Palincaş 2010, 314, fig. 2; for Bulgaria, cf. Krauss 2024, 186, fig. 12), what would correspond to the end of the EBA 3 period in Upper Thrace. Regarding Tei II, however, contemporaneity with the A2 stage of the Central European EBA chronology

**Grave 27**  
Sector D 08

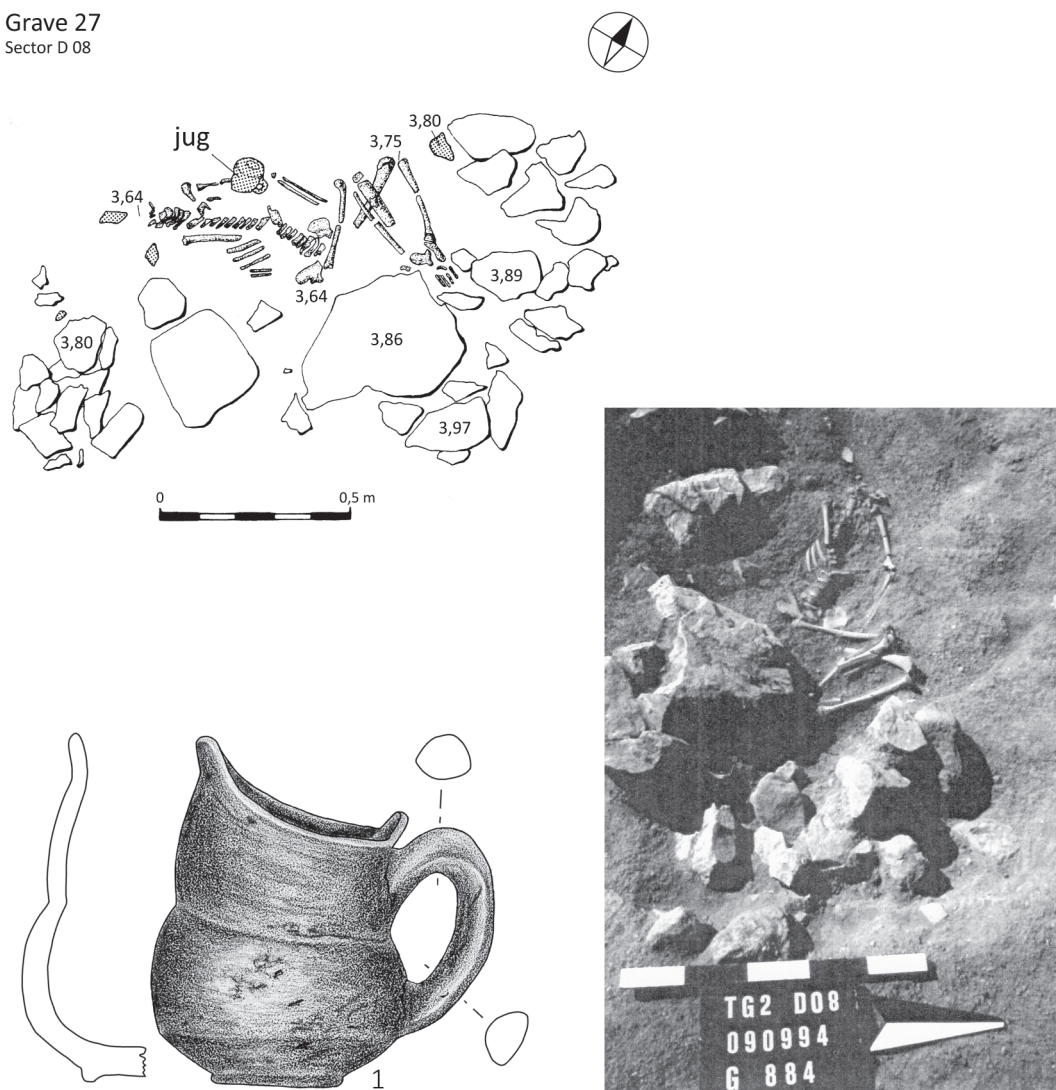


**Figure 8.** *Grave 27 at Drama–Kayryaka and the juglet found in it. Image Credit: Lichardus et al. 2000, 165, fig. 58; Drama Project of the Saarland University; and the author.*

has been proposed (Schuster et al. 2006, 107f), and the time span between 2000 to 1600 BC may thus be taken into consideration. In the last decades, however, some authors have also dated grave 27 to the Asenovets–Razkopanitsa VII phase of the Late Bronze Age (LBA 2 in Upper Thrac) what would imply a dating after the mid-second millennium BC (Nikov 2001, 69).

*Radiocarbon dating of grave 27*

A radiocarbon date was measured for grave 27 in 2025 at the Alfred Wegener Institute in Bremerhaven (table 4). The sample was charred twigs and buds from the contents of the juglet. E. Marinova-Wolff emphasized that a botanical assessment would have destroyed the plant remains making the radiocarbon dating impossible. They corresponded to 1–3 years of growth (short-lived) and were therefore very well suited for  $^{14}\text{C}$  measurement. The result was  $3742 \pm 24$  BP, which yielded the time span between 2276 and 2037 cal. BC with a probability of 95.4%. This actually corresponds to the end of the EBA 3 period and the transition to the MBA according to the chronological terminology currently used in Upper Thrace (Alexandrov 2020, 251, fig. 1; Leshtakov 2021, 13f). Against this background, the modest ‘standing ring’ at the bottom of the juglet from grave 27 deserves attention as this feature is characteristic of the EBA 3 period indicating knowledge of wheel-thrown pottery (Leshtakov 2021, 22, figs. 4/11 and 14, and 9/2 and 3). Currently, only a few radiocarbon dates are available from Upper Thrace that fall in the 38th century BP, and can thus be compared directly to the date for grave 27. They are all listed in table 5. In addition to a radiocarbon date from building level 4 at Galabovo, several dates from building levels 5 to 3 at Tell Yunatsite should be mentioned as well as the dates from Chokoba 18 and 18A, Cherna gora, and Karasura (cf. Tsirtsoni 2021, 267, fig. 11 and table 1). However, it is uncertain whether there is a close temporal connection between the sample from the juglet and the vessel itself or the body buried in grave 27.

In conclusion, I have to add that the time span between 2300 and 2100 cal. BC (late EBA 3), or rather the early MBA *stricto sensu* (ca. 2000 cal. BC) seems to be the most probable dating for grave 27 at Drama–Kayryaka.

| Lab code      | Material               | F $^{14}\text{C}$ | $\pm$ (abs) | $^{14}\text{C}$ age BP | weight (ugC) | $^{14}\text{C}$ age cal. BC (2 $\sigma$ )                  |
|---------------|------------------------|-------------------|-------------|------------------------|--------------|------------------------------------------------------------|
| AWI-15236.1.1 | charred twigs and buds | 0.6276            | 0.0019      | $3742 \pm 24$          | 995          | 2276–2256 (3.7%)<br>2206–2116 (62.8%)<br>2100–2037 (29.0%) |

**Table 4.** Radiocarbon date for grave 27 at Drama–Kayryaka measured in 2025 at Bremerhaven. The 2021 version of OxCal v4.4.4 program was used for  $^{14}\text{C}$  age calibration applying the IntCal 20 calibration curve (Reimer et al. 2020).

| Lab code               | Site                     | Material             | <sup>14</sup> C age BP | <sup>14</sup> C age cal. BC (95.4%) |
|------------------------|--------------------------|----------------------|------------------------|-------------------------------------|
| Bln-5368               | Cherna Gora              | charred wood         | 3790±37                | 2397–2050                           |
| Bln-3658               | Yunatsite, level 5       | charred fruit(s)     | 3780±50                | 2433–2035                           |
| Bln-3657               | Yunatsite, level 4       | charred fruit(s)     | 3760±50                | 2345–2025                           |
| Bln-3656               | Yunatsite, level 3       | charred fruit(s)     | 3760±50                | 2345–2025                           |
| Bln-4102               | Galabovo, level 4        | charred wood         | 3745±50                | 2332–1980                           |
| AWI-15236.1.1          | Drama–Kayryaka, grave 27 | charred twig and bud | 3742±24                | 2276–2037                           |
| Bln-5346               | Cherna Gora              | charred wood         | 3701±27                | 2197–1984                           |
| Bln-3659               | Yunatsite, level 5       | charred fruit(s)     | 3700±50                | 2274–1946                           |
| Lyon-13680 / Sac-48686 | Chokoba, 18A             | charred seeds        | 3700±30                | 2199–1981                           |
| Lyon-8559 / SacA-26532 | Chokoba, 18              | charred seeds        | 3695±30                | 2194–1980                           |
| Bln-3426               | Karasura, rampart        | charred wood         | 3690±50                | 2271–1937                           |

**Table 5.** Radiocarbon dates from selected EBA sites in Upper Thrace. The radiocarbon date for grave 27 at Kayryaka is placed in the center of the table and shaded. The comparative dates show low standard deviations. The mean values of the radiocarbon years for them are either a maximum of 48 years earlier or a maximum of 52 years later than the mean value of the radiocarbon years for grave 27. (After Tsirtsoni 2021, table 1).

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