Offa's Dyke Journal

A Journal for Linear Monuments, Frontiers & Borderlands Research

Volume 5

Edited by Howard Williams

Aims and Scope

Offa's Dyke Journal is a peer-reviewed venue for the publication of high-quality research on the archaeology, history and heritage of linear monuments, frontiers and borderlands. The editors invite submissions that explore dimensions of Offa's Dyke, Wat's Dyke and the 'short dykes' of western Britain, including their life-histories and landscape contexts. *ODJ* will also consider comparative studies on the material culture and monumentality of land divisions, boundaries, frontiers and borderlands from elsewhere in Britain, Europe and beyond from prehistory to the present day. We accept:

1. Notes and Reviews of up to 3,000 words
2. Interim reports on fieldwork of up to 5,000 words
3. Original discussions, syntheses and analyses of up to 10,000 words

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Front cover: Reconstruction of the Olger Dyke at Gårdeby Mark (Jørgen Andersen, Museum Sønderjylland, Arkæologi Haderslev). Cover and logo design by Howard Williams and Liam Delaney.

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Rhwydwaith Clawdd Offa's Dyke Collaboratory

University of Chester

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The Current State of Research on Early Medieval Earthworks in East Central and Southeastern Europe

Florin Curta

Much has changed in the last forty years in the study of the early medieval earthworks of East Central and Eastern Europe. While the exact chronology and cultural attribution of the Csörsz Dykes in Hungary or the Bessarabian Dykes in Moldova and Ukraine remains a matter of debate, significant progress is clear in other cases, particularly the West Bulgarian Dykes, as well as the Large Earth Dyke in Dobrudja. The use of radiocarbon dating, as well as stratigraphical observations suggest that, in both cases, the key period for the building and use of those earthworks was the ninth century. The article surveys the main problems of interpretation raised by the recent studies of dykes in the region.

Keywords: radiocarbon dating, early medieval settlements, social organisation, frontiers, Eastern Europe

The research on linear earthworks in East Central and Eastern Europe took a major turn in the 1980s on three different fronts. First, the Bulgarian archaeologist Rasho Rashev (1943–2008) published his first book, a monograph on the Bulgar embankments in the Lower Danube region (Rashev 1982). One year later, three archaeologists from the Hungarian National Museum – Éva Garam (b. 1939), Pál Patay (1914–2020), and Sándor Soproni (1926–1995) – published the second, and to this day, the most authoritative monograph on the so-called Csörsz Dykes (Garam *et al.* 1983).[1] While Rashev, building on ideas of earlier Bulgarian historians, envisaged a system of fortifications (both dykes and strongholds) for the defense of early medieval Bulgaria, the Hungarian archaeologists dated the earthworks in eastern Hungary and western Romania to Late Antiquity (fourth to sixth centuries) and attributed them to the Romans (for Bulgaria, see Rashev 2005: 52–53; for Roman linear fortifications, see Napoli 1997). However, at about the same time, the German archaeologist Uwe Fiedler (b. 1957) advanced the idea that all earthworks in East Central and Southeastern Europe had been built in the early Middle Ages (seventh to ninth centuries). He linked the dykes in Hungary and western Romania to the Avars, and those of Bulgaria, northern Serbia, southern and southeastern Romania, Moldova, and southern Ukraine to the Bulgars (Fiedler 1986). All three studies have fundamentally altered the way in which earthworks in East Central and Southeastern Europe are interpreted (Figure 1). During the last 40 years, the research has amplified, but also considerably modified the conclusions of the

[1] The Csörsz Dykes were first studied by Vilmos Balás (Balás 1961 and 1963). The name derives from that of a legendary king, who allegedly built the dykes to win the hand of his future wife. However, the word derives from the Slav(on)ic word for 'devilish', an indication that, like many other ramparts in the region, the construction was attributed to the powers of the devil.

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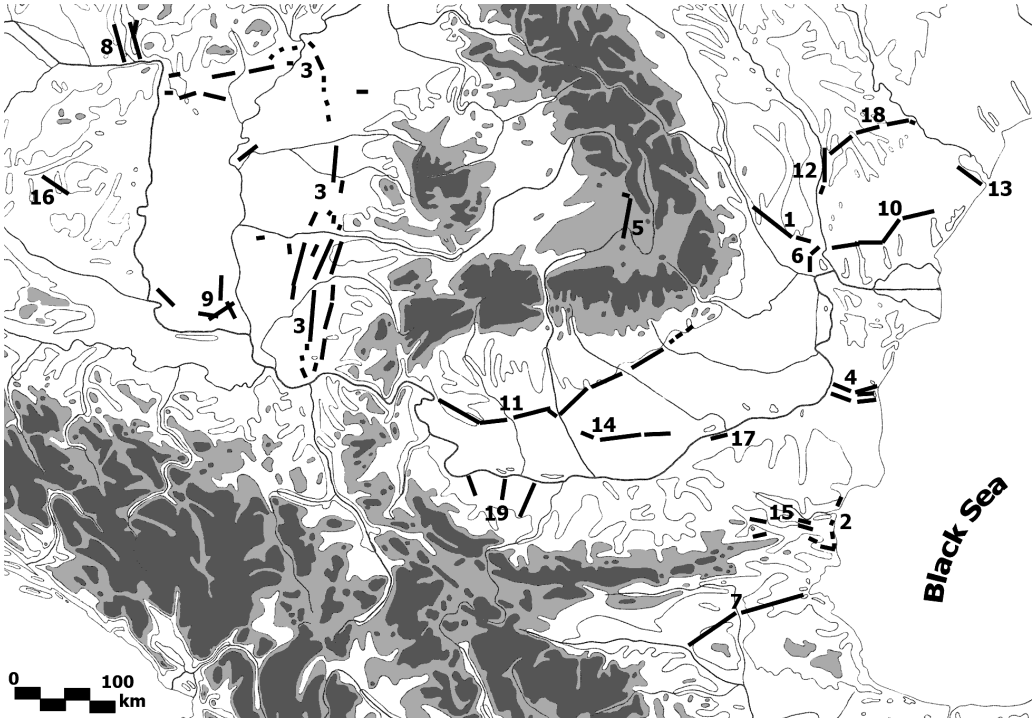

Figure 1: Distribution of earthworks dated to the early Middle Ages in East Central and Southeastern Europe: 1 – Athanaric's Wall; 2 – Black Sea coast dykes; 3 – Csörsz Dykes; 4 – Dobrudjan dykes; 5 – East Transylvanian dykes; 6 – embankment near Galaţi; 7 - Erkesiia; 8 – Hron-Ipeľ dykes; 9- Large Roman Dyke in the Bačka; 10 – Lower Bessarabian Dyke; 11 – Northern Furrow of Novac; 12– Prut rampart; 13 – Serpent Wall; 14 – Southern Furrow of Novac; 15 – Stara Planina dykes; 16 – Transdanubian rampart; 17 – Tutrakan Dyke; 18 – Upper Bessarabian Dyke; 19 – West Bulgarian dykes

scholars writing in the 1980s. This survey of the current state of research is meant to offer a perspective and to suggest possible avenues for further studies.

Perhaps the most spectacular element of the recent studies are the efforts to identify and date new earthworks in areas that have not until now been considered. This is the case of the embankments in the Szekler country of central Romania (Harghita, Covasna and Braşov counties; Figure 1, no. 5). Long viewed as elements of the Arpadian-age system of defense on the eastern border of the Kingdom of Hungary, the ramparts run over several tens of kilometres from the upper course of the Târnava Mare River, just north of Odorheiu Secuiesc to the northern slopes of the Perşani Mountains (near Măieruş on the river Olt, north of Braşov). They have been GPS mapped in 2000 and several segments were identified by means of aerial photography (Sófalvi 2013: 89; for a detailed description, see Sófalvi 2017: 231–256). The northernmost segment, known as Ördög útja (Devil's Way), goes between the villages of Dealu and Căpâlniţa (Harghita County), is 4–8m wide and 0.5–1.5 m high, and has two ditches, one on each side (Sófalvi 2013: 89 and

Figure 2: The Ördög útja dyke in the Zetea upland of eastern Transylvania (Photograph: András Sófalvi)

90 fig. 1) (Figure 2). The following segment, known as Ördögbarázda (Devil's Furrow) stretches from Vlăhiţa to Mereşti (Harghita County), is 7–12m wide and reaches 1.5 m in height. Unlike Ördög útja, it has a section made of stone and another made of earth, with a ditch on each side identified for each section (Sófalvi 2013: 89). The third segment is called Kakasbarázda (Rooster's Furrow). This is a 2m-high dyke, more than 10m wide in some spots, and with only one ditch to the east (Figure 3). Charred timber remains and a thick layer of burnt soil found on top in the section near Vârghiş (Covasna County) suggest the existence of a palisade or a fence. Charcoal samples from that timber structure have been collected in 2005 and radiocarbon dated to the Avar-age (1σ calibrated dates 681–766, 689–789 and 773–880; Sófalvi 2017: 153).[2] The southernmost segment, Ördögárok (Devil's Dyke) runs for a few kilometres between Ormeniş and Apata (Braşov County). It is believed to be of a similar, Avar-age date, even though no samples have been collected from that segment (Sófalvi 2017: 151). As Avar-age finds are conspicuously absent from the

[2] The three samples of charcoal from the built structure of the rampart, which were analyzed at the Institute for Nuclear Research in Debrecen (Hungary), produced the following dates: 1205 ± 40 14C BP (Deb-13396); 1250 ± 35 14C BP (Deb-13402); 1280 ± 40 14C BP (Deb-13403). More samples from the Kakasbarázda and the Ördög útja have been radiocarbon dated in 2008 and produced similar (cal. AD 1 σ) dates: 647–765 (Deb-16381), 669–768 (Deb-16365), and 784–978 (Deb-16213) (Sófalvi 2017: 153).

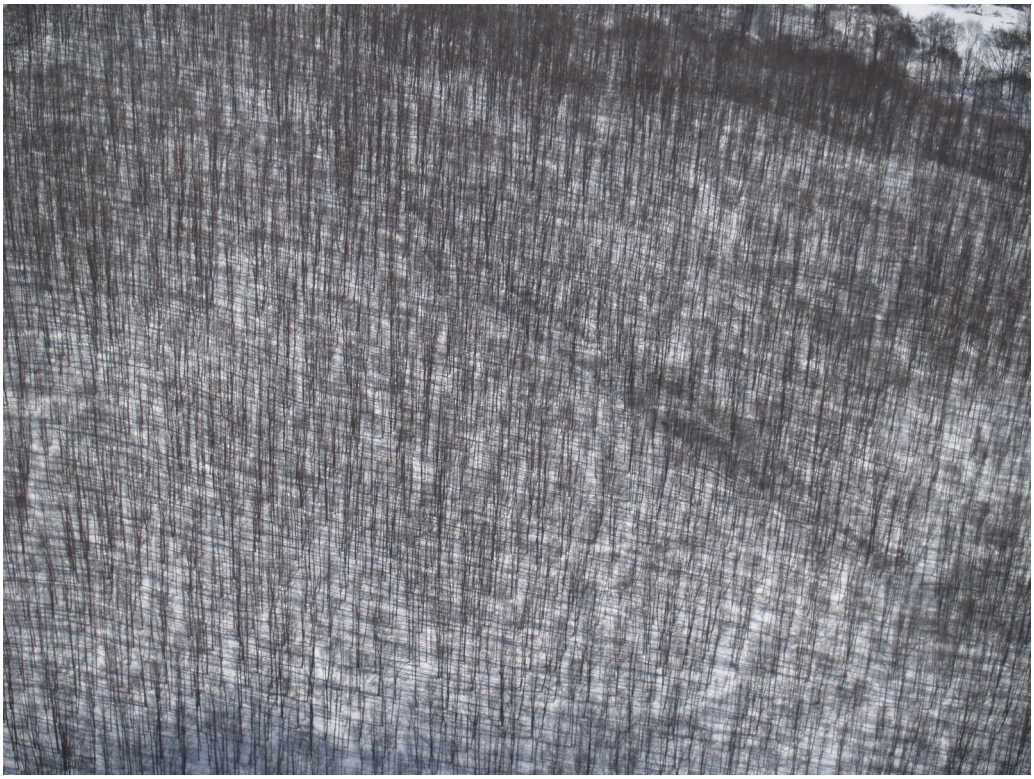

Figure 3: The Kakasbarázda dyke south of the river Olt (Photograph: András Sófalvi)

Szekler country in central Romania, the interpretation of the East Transylvanian dykes remains a matter of debate (for Avars in Transylvania, see Cosma 2020). Old radiocarbon dates have meanwhile changed the interpretation of the embankments along the lower courses of the rivers Hron and Ipeľ in Slovakia (Kolník 1978: 141 and 143)(Figure 1, no. 8). Judging from the samples collected from the fill of the ditch in the vicinity of the village of Žemberovce (district of Levice, region of Nitra), the so-called 'burned rampart' is most likely an eighth-century structure, not a Roman linear fortification.[3] Tivadar Vida has advanced a similar date for the rampart from the Kapos River to the wetlands on the southern shore of Lake Balaton, 'because it runs along the southern boundary of the Avar settlement territory' (Vida 2021: 183)(Figure 1, no. 16).[4]

Elsewhere, stratigraphical information obtained from systematic excavations has clarified the chronology of the earthworks, even though their interpretation is disputed.

[3] It is worth mentioning, however, that the radiocarbon dating was done by Hans Quitta in Berlin in the late 1970s, before the advent of accelerated mass spectrometry. The date of 760 obtained by means of that measurement is therefore to be treated with great caution.

[4] By contrast, Uwe Fiedler believes that dyke to be of an early Arpadian age, i.e., after c. 1000 (Fiedler 2016: 343). Tivadar Vida has also dated to the eighth century another, 8km-long dyke (known as the Vasvár Dyke) between the Zala and the Rába rivers in western Hungary (Kiss and Tóth 1987; Vida 2021: 182).

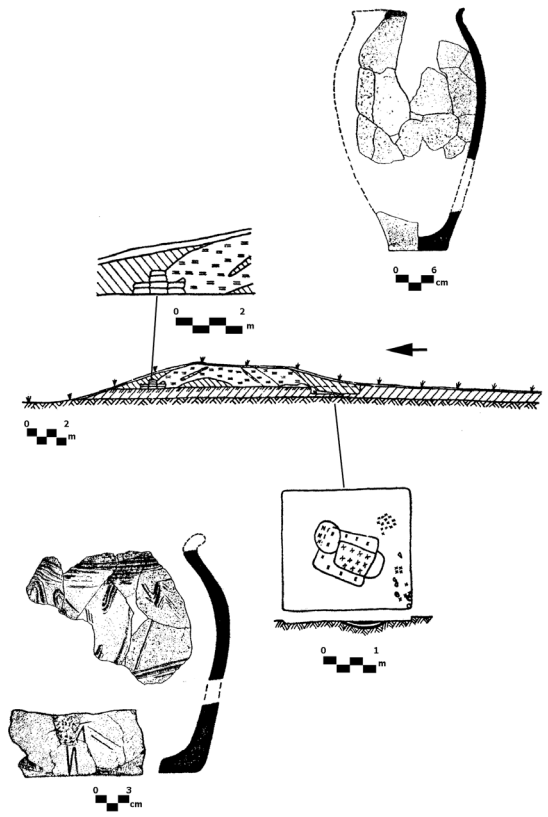

Figure 4: Eastern section of the trench through the Lower Bessarabian Dyke near the village of Kubei, showing the wall of bricks on the northern, and, on the southern side, the superposition of a sunken-floored building with clay oven. Handmade pottery from the filling of the sunken-floored building, in the upper right and in the lower left corner (after Chebotarenko and Subbotin 1991: 129 fig. 2 and 134 fig. 5)

Excavations on the Serpent Wall along the Dniester Lagoon showed that the rampart cut through a third–fourth-century cemetery at Moloha (district of Bilhorod-Dnistrovs'kyi, region of Odesa, Ukraine; Chebotarenko and Subbotin 1991: 125–126; Figure 1, no. 13). Between 1986 and 1988, excavations were carried out on the Lower Bessarabian Dyke near the village of Kubei (district of Bolhrad, region of Odesa, Ukraine; Figure 1, no. 10). The excavations revealed that the rampart superposed a settlement, of which five sunken-floored buildings have been excavated (Figure 4). All of them produced handmade pottery without any ornament, but fragments of combed ware have been found in houses 3, 4 and 5 (Chebotarenko and Subbotin 1991: 127, 131, 133, 136, and 138; 134 fig. 5; 137 fig. 7; 138 fig. 8). The combed ware was made on a tournette, a category of pottery that is typical for the second half of the seventh and the eighth century. This dating is not contradicted by the discovery in house 4 of a fragment of handmade pottery with finger impressions on the lip, a type of ornament which appears only after AD 600 (Chebotarenko and Subbotin 1991: 138 fig. 8; Curta 2001: 291).[5] How late after the eighth century was the Lower Bessarabian

[5] The excavators have advanced a date between the sixth and the seventh century for the Kubei settlement, but the pottery thrown on a tournette and the fragment with finger impressions on the lip strongly suggest a later date (Chebotarenko and Subbotin 1991: 141–142).

Dyke built is not clear. However, the excavations in the late 1980s showed that on the side towards the ditch (northern side), the rampart was reinforced with a wall of bricks placed in two or three rows and seven to eight layers (Chebotarenko and Subbotin 1991: 128 fig. 1). This reminds one of the unfired bricks used for the core of the ramparts of the late tenth-century fortifications of Bilhorod and Pereiaslav in Right- and Left-Bank Ukraine, respectively (Rappoport 1956: 82–91).[6] Whether a tenth-century date may be accepted or not, the Lower Bessarabian Dyke is certainly not an early Bulgar construction. *Pace* Rashev, it cannot be linked to the supposed fortification of the Onglos, the first settlement of the Bulgars in the Lower Danube region (Rashev 1981a: 21; Rashev 1981b: 99; Rashev 1987: 50). Equally problematic is the idea advanced by another Bulgarian archaeologist, according to which the Lower Bessarabian Dyke served as border between the Bulgars and the Khazars (Atanasov 2003: 101). There is no evidence of a Khazar presence anywhere near the Dniester River at any point during the ninth or tenth century. If the Lower Bessarabian Dyke was meant to contain the movements of an enemy in the steppe lands of the northwestern region of the Black Sea, that could only have been the Magyars (for the archaeology of the Magyars in the northwestern region of the Black Sea, see Tel'nov 2018; Sinica, Tel'nov and Kvytnyts'kyi 2019; Kvytnyts'kyi *et al.* 2022). Instead of being built against the Khazars, the dyke across the Budzhak steppe may thus have played a role similar to that of Sarkel, the fortress built by Byzantine engineers for the Khazars to serve as an outpost against the Magyars (for Sarkel and the Magyars, see Polgár 2001; L'vova 2003). At any rate, the interpretation of the earthwork in southern Ukraine is very difficult in the absence of a firm chronology.

A similar problem of chronological uncertainty persists for the Csörsz Dykes in Hungary and western Romania (Figure 1, no. 3), the Large Roman dyke in the Bačka, in Serbia (Figure 1, no. 9), as well as the dyke along the Black Sea shore in Bulgaria (Figure 1, no. 2). The Csörsz Dykes cannot be earlier than the second- to fourth-century graves and settlements that they superpose, or later than the grave with a coin struck for King Salamon of Hungary (1064–1065), which was dug into the rampart at Oszlár (Borsod-Abaúj-Zemplén County, Hungary; Garam 1969: 113; Garam, Patay and Soproni 1983: 49–50 and 52; 104 pl. 14/2, 4; Fiedler 1986, 458; Fiedler 2016: 340–341). However, about 15km to the west from Oszlár, at Csincse, the fill of the ditch on the southern side of the Csörsz dyke included fragments of combed ware dated to the ninth century (Fischl 1995; Vida 2021: 182). The ditch must have therefore been built before that date. Nonetheless, there is no evidence either for the building of the Csörsz Dykes in the early Avar age (c.

[6] A late tenth- or early eleventh-century date has been advanced for the Upper Bessarabian Dyke as well (Figure 1, no. 18). The 1982 excavations of the rampart between Grădişte and Coştangalia (district of Cimişlia, Republic of Moldova) showed that between the rampart and the dyke, there was a 4m-wide berm. The rampart is 10m wide and 3m high, with a 2.75m-wide ditch, the depth of which reaches 5m. A fragment of an amphora found on the berm has been used for advancing a late tenth–early eleventh-century date for the construction (Chebotarenko and Subbotin 1991: 127). However, the stratigraphical position of the amphora shard defies that conclusion, as both the berm and ditch must be of a comparatively earlier date. No archaeological excavations have been done on the Prut rampart (Figure 1, no. 12) running on the left bank of the river, and nothing is known about its relation to the Upper Bessarabian Dyke.

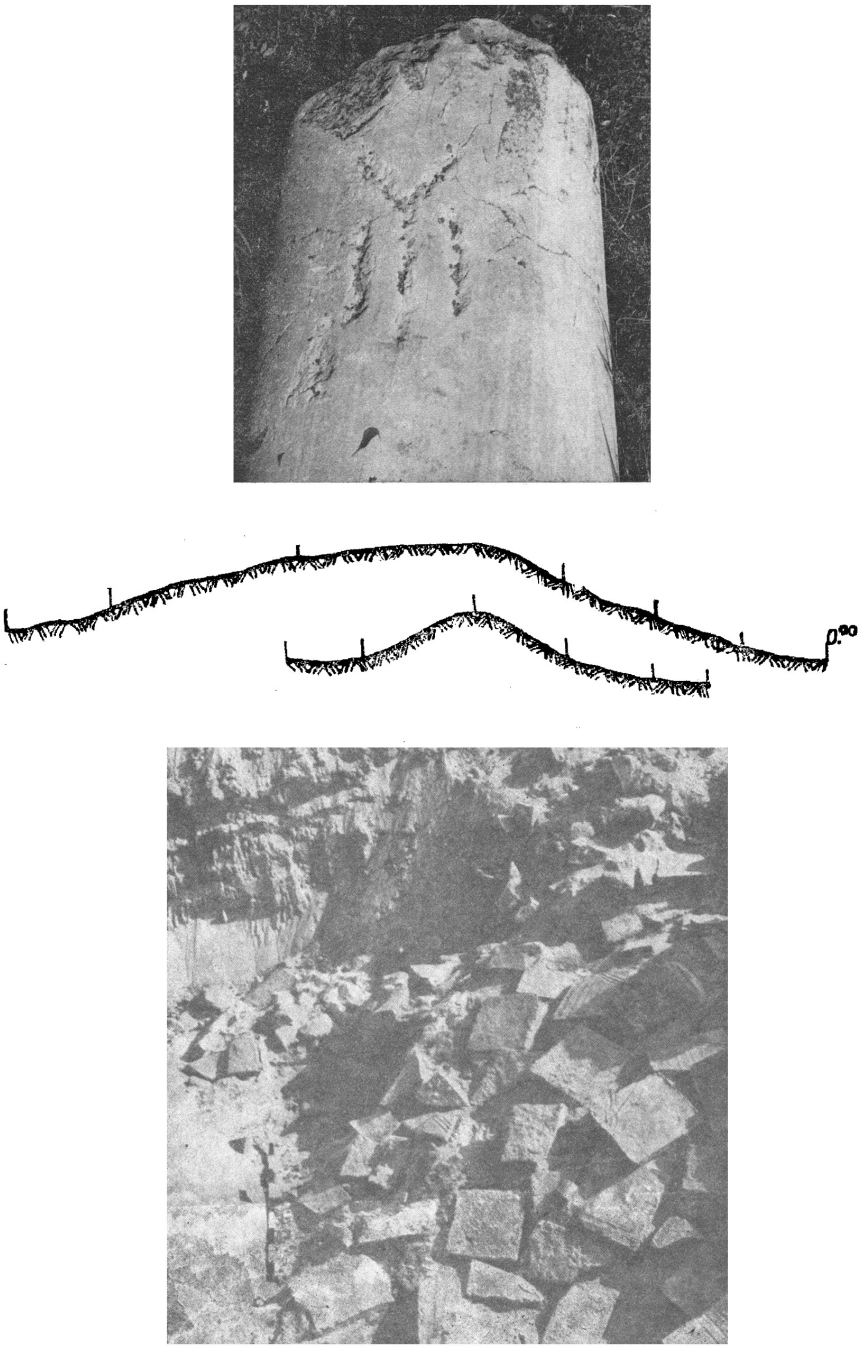

Figure 5: Eastern sections of the trench through Asparukh's Dyke near Varna, with a fragment of a marble column with the Y-shaped sign between two vertical bars (above) and tiles on top of the rampart (after Rashev 1982: 34 pl. IV and picture 9)

570–630) or their re-use and extension during the Late Avar age (c. 780–820; Fiedler 1986: 462; Fiedler 2016: 343).[7] The dating of other, shorter earthworks is also a matter of pure speculation. For example, the dyke along the Black Sea shore (Figure 1, no. 2) was excavated in 1967 and 1972–1973 near the village of Shkorpilovci (a few kilometres south of Varna). The 2.125km-long dyke cuts through a third–fourth-century fortification, as well as a settlement dated between the third and the sixth century. The building of the earthwork was dated to the eighth century on purely historical grounds, with no archaeological support (Rashev 1975). The so-called Asparukh's Dyke near Varna (Figure 1, no. 2) was equally dated to the eighth century, despite the fact that, in addition to spolia from ancient monuments, the list of chronologically sensitive arifacts found in the rampart includes two column fragments with the Y-shaped sign between two vertical bars, a clear indication of a tenth-century date (Rashev 1979a: 121; Rashev 1980; Rashev 1982: 39 and fig. 9) (Figure 5).[8] The Large Roman dyke in the Bačka (Figure 1, no. 9) cuts through the Small Roman dyke, as well as a third–fourth-century settlement. However, its dating to the early ninth century is not supported by any shred of evidence (Nagy 1966; Stanojev 1999–2000: 37–39 and 42 n. 8; Fiedler 1986: 461–462; Fiedler 2008: 165–166; Vida 2021: 182).

By contrast, more recent excavations have shed more light on the chronology of the dykes in northwestern Bulgaria. The West Bulgarian dykes are in fact three distinct, linear earthworks running between the right bank of the river Danube and the foothills of the Stara Planina Mountains, at a distance of 35–45km from each other (Figure 1, no. 19). The easternmost earthwork, known as the Ostrov(ski) Dyke is the longest of all three (58km) and was built in the middle of the plain between the Iskăr and the Ogost rivers, both right-hand tributaries of the Danube (Grigorov 2020: 67 and 69; see also Grigorov 2011). The first excavations were carried out in the early 1960s at the northern end, near the village of Ostrov (province of Vraca, Bulgaria)(Figure 6).[9] A geomagnetic survey accompanied the excavations of 2010, and more excavations were carried out in 2019 near Galovo (province of Vraca) in anticipation of an expansion of a gas pipeline along the Balkan Stream (Grigorov 2020: 72 and 75–76). The latest excavations produced evidence of ninth-century pottery, fragments of which were found in the alluvial layer that clogged the bottom of the ditch on the western side of

[7] Some have attempted to treat the Csörsz Dykes as the eastern boundary of the Avar-age settlement in the Carpathian Basin. However, Avar-age finds are known from both sides of the earthworks. Nonetheless, some continue to cling to the old idea, even when acknowledging the evidence to the contrary (Cosma 2004: 97, contradicted by Cosma 2016: 330-331 and 330 fig. 3).

[8] Quite common on many categories of artifacts found in Bulgaria—stone, ceramic, or metal—the sign has initially been interpreted as having a pre-Christian, cultic significance (Georgiev 1978; Beshevliev 1979; Mikhailov 1987; Petrova 1990; Rashev 1992; Atanasov 1993; Georgiev 1996; Stepanov 1999; Stateva 2005; Doncheva-Petkova 2015). Most scholars now agree upon the Christian meaning of the sign and the dating of its use primarily to the tenth century (Mikhailov 1979: 52 fig. 2/2-5; Totev 1991; Ilievski 1996; Dzanev 2000; Rashev 2003: 165: Tabov and Todorov 2007; Ilieva 2008; Rashev 2008; Inkova 2020).

[9] The northern end of the Ostrov dyke does not reach the Danube, perhaps because at the time of its construction the Ostrovsko Marsh reached much farther to the east than it does now (Grigorov 2020: 70).

Figure 6: View from the south of the Ostrov Dike near the village of Ostrov, with the modern road on top of the rampart (Photograph: Valeri Grigorov)

the rampart (Grigorov 2020: 83). Animal bones were also found in the ditch, and the radiocarbon dates of some of them range between 767 and 900, with two possible peaks in 802-845 and 853-885 (Grigorov 2020: 85; Figure 7).[10] The 2019 excavations across the next earthwork to the west, the Hairedin Dyke, produced no comparable evidence (Komatarova-Balinova and Aleksiev 2020).[11] However, ninth-century pottery like that from the ditch excavated near Galovo is known from a number of settlement sites in the immediate vicinity of the Hairedin Dyke (Rashev and Ivanov 1986: 20; 21 fig. 8; 22 fig. 9). Furthermore, several cemeteries dated to that same century have been discovered in the region, some fully (Dolni Lukovit, with three different sites), others only partially excavated (Galiche, Mikhailovo and Bukovci; Văzharova 1976: 175, 177, 213, 214, 220, 225, 247; 176 fig. 106; 222 fig. 138; Fiedler 1992: 458–461; 459 fig. 127). The site closest to the Ostrov Dyke is 6km to the east from the rampart, near the town of Knezha (province of Pleven, Bulgaria). The early medieval settlement excavated there in 2019 had ovens

[10] The animal bones got into the ditch at some point after the pottery, which accompanied the accelerated clogging caused most likely by erosion.

[11] The excavations carried out by Rasho Rashev on the Hairedin Dyke in the late 1970s and the mid-1980s were equally devoid of any chronologically conclusive results (Rashev and Ivanov 1986: 16–19; 12 fig. 1; 17 fig. 5).

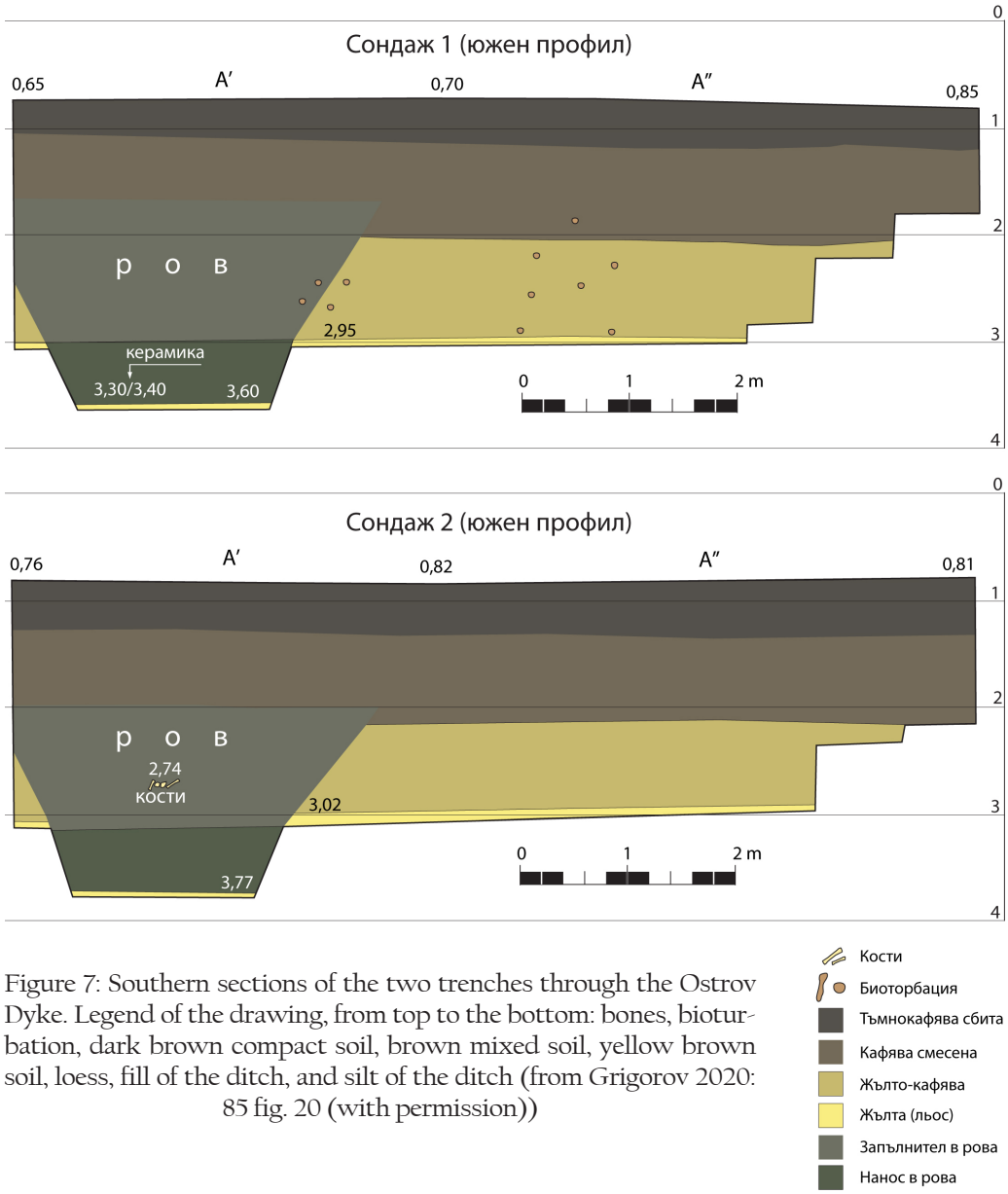

Figure 7: Southern sections of the two trenches through the Ostrov Dyke. Legend of the drawing, from top to the bottom: bones, bioturbation, dark brown compact soil, brown mixed soil, yellow brown soil, loess, fill of the ditch, and silt of the ditch (from Grigorov 2020: 85 fig. 20 (with permission))

for preparing the food and baking bread, a smelting furnace and a well – all facilities that may have been part of the logistical support for the labour force engaged in the construction of the dyke (Grigorov 2020: 84).

Early medieval, possibly ninth-century, pottery has also been found in association with the Erkesiia Dyke in Thrace (for an early description of the earthwork, see Shkorpil 1884; Shkorpil 1905: 538–543; for the origin and meaning of the name, see Blagoev 1925: 293). The 131km-long earthworks stretching from the Black Sea (Bay of Burgas) to the Marica

River have a 7m-wide ditch to the south (Figure 1, no. 7). The Bulgarian archaeologist Dimităr Ovcharov (1931–2013) first explored the dyke through trial excavations near the village of Liulin (province of Yambol, Bulgaria). Both the remains of Grey Ware with burnished ornament and the battle axe with asymmetrical blade found nearby have been dated to the late eighth and to the ninth century (Ovcharov 1970: 453 and 457; 459 fig. 12).[12] Ninth-century combed ware was found in the excavations of two other segments of the Erkesiia located farther to the east, one at Sărnevo, the other at Debelt, both in the province of Burgas (Momchilov 1990: 63–66; Momchilov *et al.* 2015: 161 and 164).[13]

Ninth-century pottery has also been found in abundance during the 2011 and 2012 excavations on the Large Earthen Dyke, one of the three earthworks running across Dobrudja (Figure 1, no. 4). The excavations took place next to the westernmost end of the Large Dyke, at Făclia (Constanţa County, Romania).[14] The Large Dyke is the shortest of all three earthworks stretching from Cernavodă on the Danube to the shore of the Black Sea at Constanţa over 54km (or 41km only, if one takes into consideration the gap between Gura Ghermelelor and 'La Pietre'; Damian *et al.* 2014: 292 and 299). Unlike the other two earthworks in Dobrudja, the Large Dyke has two ditches, one on either side (Figure 8).[15] The northern ditch is 12m wide and 4.25m deep, while the southern ditch is only 5m wide and 1m deep (Rashev 1982: 77–95; Papuc 1992: 324; see also Papuc 2016). For about 4km in the west, the Large Dyke was built on top of the Small Dyke, a clear indication that it is of a later date. From 'La Pietre' to the east, it runs alongside the Stone Dyke, which is located only 40m to the north. At some point between Castelu and Poarta Albă (both in the Constanţa County), the Stone Dyke cuts through the Large Dyke, another indication that the former is the latest of all linear earthworks in the Dobrudja. Ninth-century pottery is known from earlier, trial excavations carried out near Cochirleni and Valu lui Traian, as well as near Medgidia and Poarta Albă (Diaconu 1973–1975: 201 and 204; pl. II; Panaitescu 1978).[16]

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[12] Later excavations near Liulin in the context of the installation of a gas pipeline produced no such pottery (Grigorov and Vasilev 2007).

[13] The bifurcation at the eastern end of the Erkesiia, near Debelt, has been explained as the result of the correction of the Bulgar-Byzantine frontier by Emperor Leo V (814–820), but such an interpretation is simply based on equating the Erkesiia Dyke with the frontier, as described in the Suleyman Köy inscription (Georgiev 2015: 149–151; for the inscription see Beshevliev 1992: 164; for the frontier described in the inscription and its relation to the Erkesiia Dyke, see Curta 2011: 16–22).

[14] Both the Large and the Small Earthen dykes begin on the right bank of the Danube, about1 km to the north-west from the village of Cochirleni (Constanţa County). The eastern end of the Large Dyke reaches the seashore west of Constanţa and about 1km to the south from the eastern end of the Small dyke (Damian *et al.* 2014: 292). For the three earthworks in Dobrudja, see Schuchhardt 1918 and Shkorpil 1925.

[15] The chronological relation between the two ditches remains unclear, but the Large Earthen Dyke has 36 large and 28 small forts, two of which have been built inside two large forts (Papuc 1992: 323 with n. 2). This has rightly been interpreted as two phases of construction, if not use, but there are no visible traces of that on the rampart itself. Nor is it possible stratigraphically to attach one ditch to one phase, and another to the other phase.

[16] For reasons known only to him, Georgiev 2005 ignored the archaeological evidence and dated the Large Dyke to the fourth century.

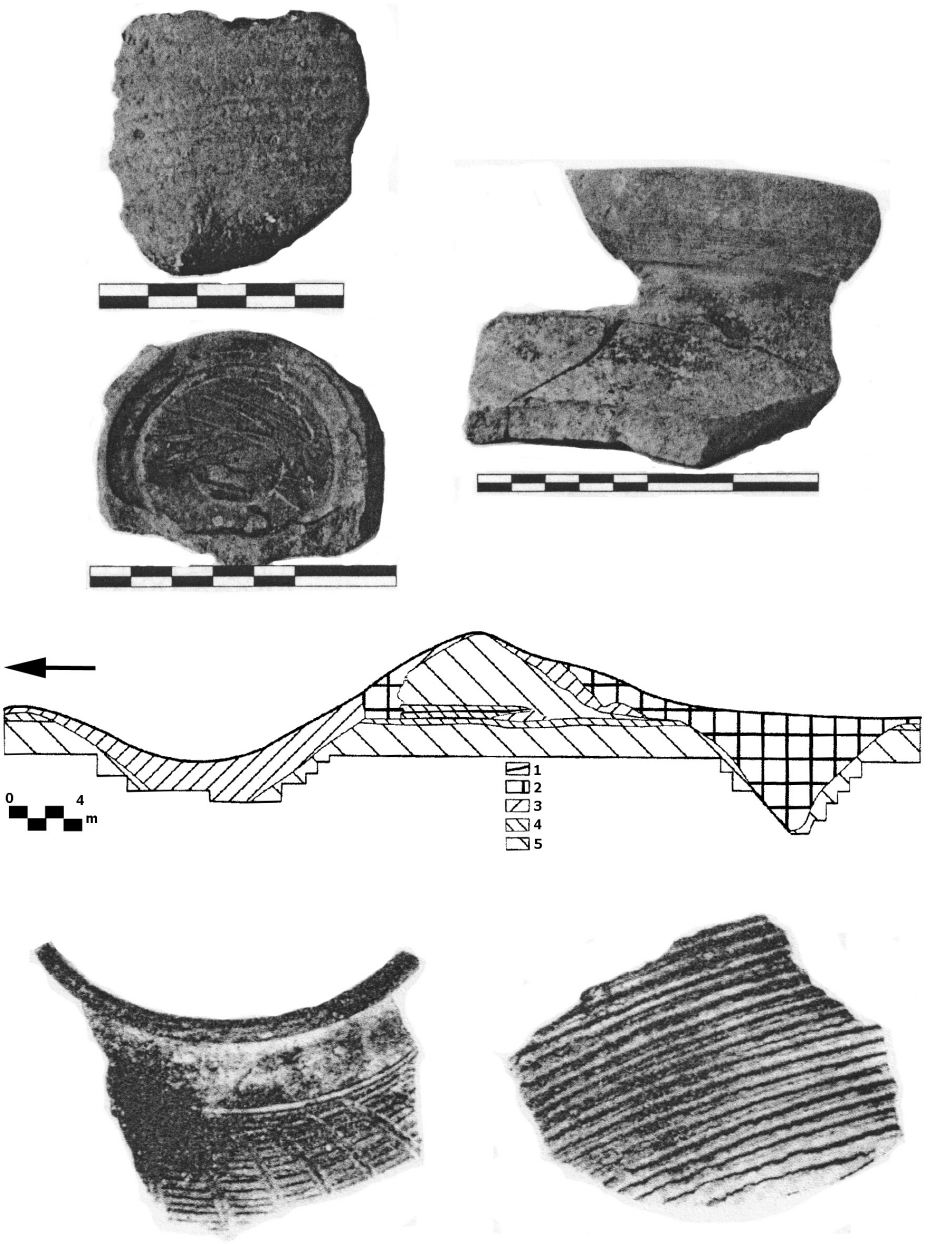

Figure 8: Eastern section of the trench through the Large Earthen Dyke near Gura Ghermelelor: 1 – topsoil; 2 – brown soil with yellow inclusions; 3 – brown soil; 4 – brown soil with organic inclusions; 5 – clay (after Comşa 1951: 234 fig. 1). Ninth- and tenth-century ceramics discovered in the Large Earthen Dyke near Făclia (above) and Cochirleni (below) (after Diaconu 1973–1975: pl. II and Damian et al. 2014: pl. XXI)

Unlike the Large Dyke, there is still no direct evidence (i.e., from the dyke itself) for the dating of the clearly later Stone Dyke.[17] For a long time, the main argument in favor of a tenth-century date was the Cyrillic inscription from Mircea Vodă (Constanţa County), which refers to an unknown enemy's attack against the 'Greeks' in 6451 (AD 943), when 'Demetrius was *zhupan*' (Bogdan 1958; Bozhilov 1973; Mikhailov 2005). However, the inscription was accidentally found in 1950 by inmates of Communist Romania's largest gulag during excavations for the canal (now) linking the Danube to the Black Sea, across Dobrudja. Despite claims that it had been reused for the foundation of one of the forts associated with the Stone Dyke, the circumstances of its discovery are quite dubious (Comşa 1951: 237; Rashev 1979b: 17). In addition, the fort in question was already heavily destroyed by occasional excavations in 1917 (Schuchhardt 1918: 53). The rampart has been explored archaeologically, but with no conclusive results.[18] A gold coin struck for the Byzantine emperors Constantine VII and Romanus II between 945 and 959 was found in 1986 in one of the forts associated with the Stone Dyke, but much like in the case of the Mircea Vodă inscription, the archaeological context remains unclear (Vertan and Custurea 1995–1996: 315). Later salvage excavations (1997–1999 and 2001) did not add anything to this bleak picture (Paraschiv-Talmaţchi 2019: 386). However, two fragments of polychrome ware found in 2012 during the excavations south of Cernavodă strongly suggest a date within the tenth century (Paraschiv-Talmaţchi 2019: 391 and 399 pl. III/3; for the polychrome ware, see Comşa 1985; Kostova 2009). Several settlements dated to that period are known from the immediate vicinity of the dyke. South of Cernavodă, the many dwellings of one of them were discovered at a distance of less than 8 m from the rampart (Paraschiv-Talmaţchi 2019: 391). At Valu lui Traian, the excavations carried out in 2010 and 2011 brought to light a large settlement with three smelting furnaces, a kiln, many baking ovens, and two wells, a situation remarkably similar to that identified less than a decade later near Knezha, in Bulgaria (Paraschiv-Talmaţchi 2019: 392).[19]

Although the longest and clearly the oldest of all three linear earthworks across Dobrudja, the Small Earthen Dyke is the least known archaeologically. Its chronology is still a matter of debate. The rampart is 1–3m high, with a ditch on the southern side, the width of which varies between 13 and 14m (Papuc 1992: 328). Such characteristics led some to believe that the Small Dyke is of late antique, and not early medieval date

[17] The Stone Dyke has 26 forts, one of which was built on top of the Small Dyke, while another on top of the Large Dyke (Papuc 1992: 325).

[18] Trial excavations on the Stone Dyke took place in 1965, but no results have been published. Nor have those of the 1986–1987 salvage excavations (Papuc 1992: 325–326). To be sure, the earliest excavations of the dyke took place in 1935 between Palas (now on the western periphery of the city of Constanţa) and present-day Valu lui Traian, but no documentation survives (Paraschiv-Talmaţchi 2019: 383).

[19] Much like in the case of the West Bulgarian dykes, there are also several cemeteries excavated in the vicinity of the earthworks of Dobrudja, only one of which has been published in its entirety (Rădulescu and Harţuche 1967). For a large cemetery associated with the ninth–eleventh-century settlement site in Valu lui Traian, see Paraschiv-Talmaţchi 2019: 392–393.

(Georgiev 2010).[20] At any rate, there is no evidence that the Small Earthen Dyke and the Lower Bessarabian Dyke were built at the same time, presumably shortly before AD 700 (Rashev 1987: 50). Similarly, claims that the earthworks in southern and southeastern Romania – the Northern and Southern Furrows of Novac (Figure 1, nos 11 and 14), as well as Athanaric's Wall (Figure 1, no. 1), and the embankment near Galaţi (Figure 1, no. 6) – were built in the early Middle Ages have no archaeological support (Rashev 1981b: 100–101; Fiedler 2008: 163 and 164; for a brief presentation of the earthworks in southern Romania, see Alexandrescu 2009: 99–101 and 103–104).[21] The same is true for the speculations regarding the date of other earthworks in Bulgaria, such as those at Tutrakan (Figure 1, no. 17) or in the Stara Planina mountains (Figure 1, no. 15)(Rashev 1976; Rashev 1982: 71, 73, 109 and 123).

The interpretation of linear earthworks in strictly military terms is still favoured in some circles, most conspicuously in relation to the Large Earthen and the Stone dykes in Dobrudja. The association of each one of them with a relatively large number of forts is regarded as sufficient evidence that they may have been conceived as defensive, garrisoned barriers built 'in the middle a military district on the northern frontier of the medieval Bulgarian state' (Curta 1999: 148). There is nonetheless a conspicuous absence of other material culture elements associated with the military, particularly the deposition of weapons in burials.[22] The evident presence of a relatively large civilian population is explained as a consequence of the establishment of the military district (Rabovianov 2007). The dykes in northwestern Bulgaria have also been interpreted in strategic and tactical terms (Grigorov 2020: 90–91). Given the chronology indicated by finds, they are believed to have been built in the aftermath of the collapse of the Avar qaganate. The resulting political instability in the region was marked by the defection of two local tribes (the Abodrites and the Timochans) from Bulgar allegiance (Vălov 1986; Curta 2019: 96–97). The dykes were thus a response to the conflict between the Bulgars and the Franks during the reign of Omurtag (814–831)(Andonov 2015). The Erkesiia may also be dated to the reign of Omurtag, but its significance is administrative, legal and economic, and not (only) military (Blagoev 1925: 293). The political goal of the frontier between Bulgaria and Byzantium marked by means of an earthwork was to serve as a 'legal barrier against defections, surprise attacks or spies' (Curta 2011: 31). From an economic point of view, the barrier may have regulated commercial activities by directing all movements of goods towards established points of crossing, such as the 'fort' at Liulin. A similar interpretation has been advanced for the dykes in eastern Transylvania. Given that several sections of those earthworks hide behind ridges (e.g. the

[20] A late antique date for all the linear earthworks of Dobrudja has also been advanced by Bogdan-Cătăniciu 1996, largely on the basis of her interpretation of aerial photographs taken in 1918.

[21] Rasho Rashev and Uwe Fiedler's idea of the Northern and Southern Furrows of Novac being built by the Bulgars contradicts the archaeological evidence of a strong Bulgar presence in southern Transylvania, across the Carpathian Mountains (Madgearu 2002–2003; Iotov 2012).

[22] The only tenth-century sword finds from Dobrudja have been associated with the presence of the Varangians during the Rus' intervention in Balkan affairs between 967 and 971 (Iotov 2018).

southernmost part of Kakasbarázda, from the left bank of the Nădaş River to Augustin) or even run along the edge of a river, they are both unsuitable and unnecessary from a military point of view. Instead, they must have had an economic (commercial) role of regulating the flow of goods in the direction of certain routes or gates (Sófalvi 2017: 155). A non-military, utilitarian interpretation has also been advanced for the earthworks along the Black Sea shore in Bulgaria, as well as those in the Bačka (northern Serbia). The former were roads, not dykes, while the latter were the result of efforts to drain the marshy lands in the southern part of the Carpathian Basin (Georgiev 2009: 91–92; Stanojev 1999–2000).[23]

How were the dykes built? The choice of a particular location and the manner in which the line of the earthwork was traced on the ground have received very little attention from scholars working on the topic. In the case of the Erkesiia, the remarkable coincidence between the trajectory of the rampart and the description of the Bulgar-Byzantine frontier in the Suleyman Köy inscription implies a deliberate attempt to mark on the ground an abstract line, which must have involved perambulation (Curta 2011: 16–21). In other cases, builders used pre-existing features in the landscape. There is a great deal of overlap between the trajectory of the three earthworks in the Dobrudja, particularly between the Small and the Large dykes, with the former being the earliest of all. The northern segment of the Ostrov dyke in northwestern Bulgaria runs in parallel with an old road paved with stone slabs, which is believed to be of Roman age (Shkorpil 1905: 530–531; Grigorov 2020: 68). Equally timid are the scholarly attempts at understanding the social organisation of the labour involved in the building of the dykes. One of the most important shifts in the historical interpretation is the recent emphasis on earthworks as statements of power, with a symbolic value that far exceeds any practical needs. Early medieval earthworks in Bulgaria 'offered a unique occasion for rulers to exercise power over the bodies of those whom they ruled by having them handle the soil' (Squatriti 2005: 90; see also Squatriti 2002 and 2021). It has been estimated that the total volume of soil excavated along the Ostrov dyke was about 600,000 cubic metres. At an average excavation rate of 1 cubic metre per man-day, about 5,000 people must have been necessary over 120 working days for building the rampart. The logistical support for such a labour force was based in the neighbouring settlements (Grigorov 2020: 87–88; see also Paraschiv-Talmaţchi 2019: 391). Pál Patay has calculated that the total volume of soil excavated along the Csörsz Dykes was 10 million cubic metres requiring a considerable number of work days (Garam *et al.* 1983: 15). However, not all segments of those earthworks were built at the same time. More such estimates are needed before one can begin to compare contemporary earthworks and gauge their significance as 'statements of power'. Detailed studies of the settlement pattern may also be instrumental in understanding the considerable effort of organization, as well as the underlying social structure responsible for the erection of those monuments in the landscape. This is particularly needed for the Csörsz and Bessarabian dykes, but

[23] It is important to note in this respect that the Serbian name of the earthworks in the Bačka ('Rimski šančevi') refers to the ditch, not to the rampart.

only when their chronology is firmly established, lest comparisons are going to be either irrelevant for particular periods, or too vague for a high-resolution reconstruction of the historical process.

Table 1: Linear earthworks in east central and southeastern Europe

Name	Length (km)	Ditch to the …	Dating method	Date
Asprukh's Dyke	2	west	spolia	10th c.
Athanaric's Wall	90	south	written sources	4th c. (?)
Csörsz Dykes	1,260	to the north & east	stratigraphy	4th–11th c.
Erkesiia	131	south	ceramics	9th c.
Galaţi embankment	25	south, west & north	–	1st–2nd c. (?)
Hairedin Dyke	24	west	–	9th c. (?)
Horn-Ipel' Dykes	60	east	C^{14}	c. 760
Kakasbarázda	18.55	east	C^{14}	681–766 689–789 773–880
Large Earthen Dyke	54	north & south	ceramics	9th c.
Large Roman Dyke in the Bačka	38	south	stratigraphy	post-4th c.
Lom(ski) Dyke	25	south	–	?
Lower Bassarabian Dyke	138	north	stratigraphy	post-8th c.
Northern Furrow of Novac	400+	north	–	1st–2nd c. (?)
Ördög útja	7.5	north	C^{14}	784–978
Ördögárok	7.75	east	–	7th–8th c. (?)
Ördögbarázda	5.25 + 8	west & east	–	?
Ostrov(ski) Dyke	58	west	C^{14}	802–845 853–885
Prut rampart	12+	east	–	?
Serpent Wall	60+	north-east	–	?
Shkorpilovci Dyke	2	west	written sources	8th c. (?)
Small Earthen Dyke	61	south	–	?
Southern Furrow of Novac	150	north	–	1st–2nd c. (?)
Stara Planina Dykes	0.2–10	south	–	?
Stone Dyke	59	north	inscription	10th c.
Transdanubian rampart	8	west	–	?
Tutrakan Dyke	16	north	stratigraphy	8th–9th c.
Upper Bessarabian Dyke	120	north	stratigraphy	1st–2nd c.

The earthworks in East Central and Southeastern Europe that could be dated with some degree of certainty to the early Middle Ages, namely between c. 700 and c. 1000, offer a great deal of comparative material for the ongoing debate surrounding linear frontiers and dykes in medieval Europe. The extraordinary variety in size, mode of construction, and orientation

precluded any universal interpretation (Table 1). In addition, the complex cultural and political context of those earthworks has invited a variety of interpretive solutions, each one of which may be used as a cautionary tale for any general discussion attempting to take into consideration everything from Offa's Dyke in Britain to the Stone Dyke in Romania. The relation between early medieval frontiers and the building of earthworks is also an issue that can be best studied in Southeastern Europe, because of the exceptionally rich record of both historical and archaeological information. More importantly, in Bulgaria and Romania the excavation of both settlements and cemeteries located in the immediate hinterland of the dykes has recently opened the possibility to explore the issue of the social labour involved in the erection of those formidable features of the early medieval landscape.

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Florin Curta, Professor of Medieval History and Archaeology, Department of History, 202 Flint Hall, P.O. Box 117320, University of Florida, Gainesville, Florida, FL 326110-7320, USA.

Email: fcurta@ufl.edu