Offa's Dyke Journal

A Journal for Linear Monuments, Frontiers & Borderlands Research

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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: Detail of John Speed's map of Flintshire from 1610 showing the earliest cartographic depiction of Offa's Dyke (private collection)

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New Results and Considerations regarding the Fieldstone Wall of the Eighth-Century Danevirke

Astrid Tummuscheit and Frauke Witte

The article examines the origins and development of Danevirke, a monumental border fortification in what is now the area of Schleswig in northern Germany. Archaeological evidence shows that its origins date back to the fifth/sixth century AD and that the complex was expanded several times. Particular attention is paid to the Fieldstone Wall, whose construction and dating provide new insights into the transfer of knowledge and political relations between the Danes and the Carolingians. The results show that the expansion of Danevirke was closely linked to the power struggles and threats of the time.

Keywords: Danevirke, Fieldstone Wall, linear fortification, early Middle Ages

Introduction

The Royal Frankish Annals report for the year AD 808 that after destroying the emporium of Reric, Godfrey, King of the Danes, returned to Hedeby and established a fortification at the border of his kingdom. This is the oldest written testimony of what we know today as the Danevirke:

He [Godfrey] along with the entire army, went by ship to the harbour/port of Sliesthorp [Hedeby]. He stayed there for several days, and decided that the borders of his realm towards Saxony were to be fortified with a rampart in such way that from the eastern sea, which is called Ostarsalt [the Baltic Sea] to the western sea [the North Sea], along the entire northern bank of the River Eider, a wall should be constructed with only one gate through which wagons and riders could leave and enter. After giving this task to his commanders, he returned home (ARF 88, authors translation).

Godfrey's decision to build this monumental structure is thus mentioned in written sources. It has, however, been difficult to find a corresponding construction phase in the archaeological record (Figure 1).

Based on archaeological research we know for certain that the origins of the Danevirke – the 30km long defensive structure crossing the Isthmus of Schleswig – date back much further than its first mention in AD 808. Through analyses of various archaeological excavations carried out between 1861 and 2024, it is now possible to gain detailed insights into the history of the Danevirke and its gradual expansion which is characterised by a centuries-long, highly complex and, in some cases, still unexplained construction history, which spans from the period between the Late Roman Iron Age/

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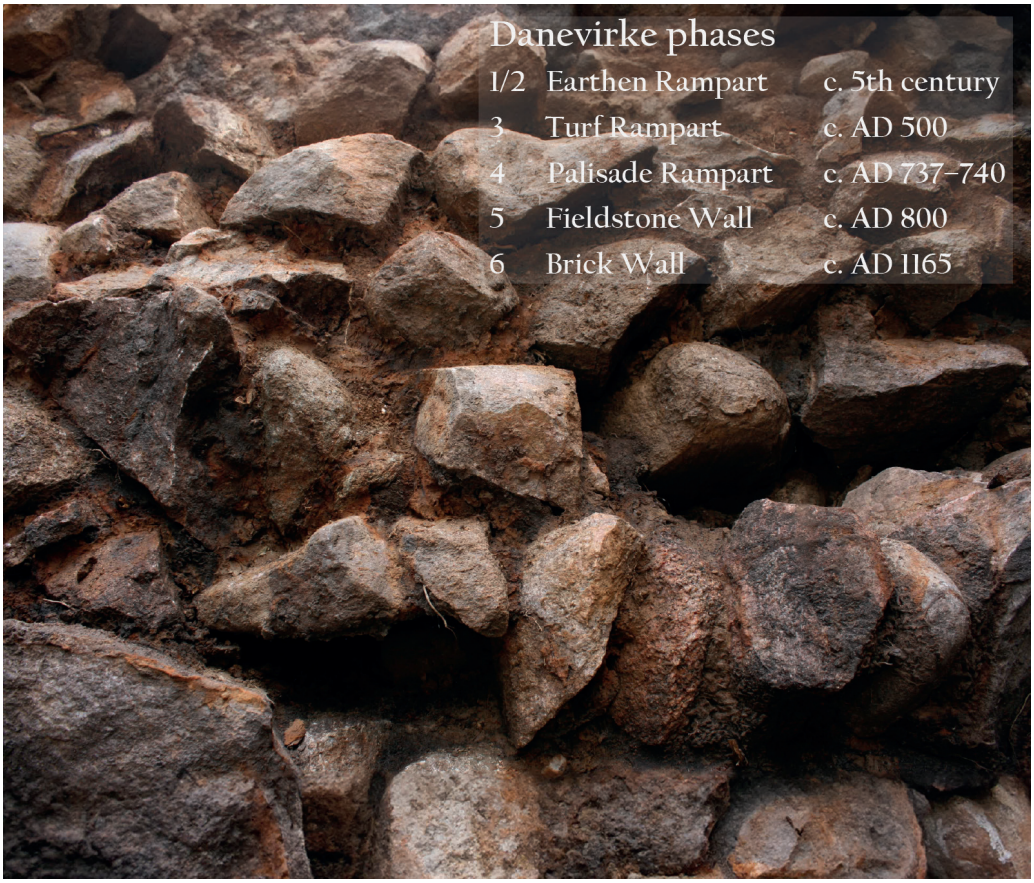
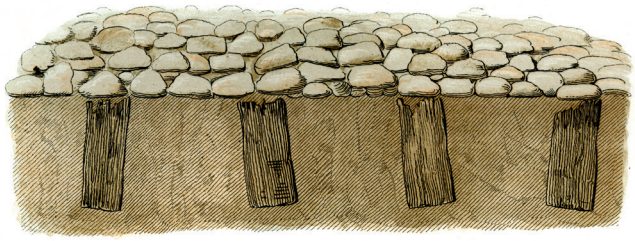


Figure 1: A section of the rear of the Fieldstone Wall in Dannewerk-Rothenkrug during the 2013 excavation. The fieldstones often show signs of having been worked and are set in locally sourced yellow clay (Photo: ©ALSH, Astrid Tummuscheit). The phases of the Danevirke overlain

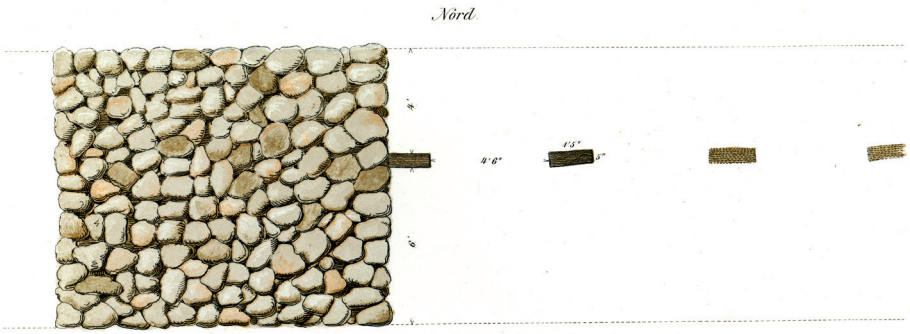
Migration Period (fifth and sixth centuries AD) through the Early Middle Ages/Viking Age to the High Middle Ages. This sequence was outlined in an earlier article in this journal (Tummuscheit and Witte 2019; see also Tummuscheit and Witte 2025).

The background: An eighth-century AD palisade of timber (and stone)

Following its initial fifth-century construction, after a long period of inactivity and decay, the Danevirke was expanded and reinforced in the eighth century to an unprecedented extent. The main rampart, originally an earthen fortification which was partially destroyed by erosion at that time, was strengthened with a massive free-standing frontage of oak timbers. The northern and eastern ramparts were added to the now significantly longer Danevirke system and built in the same palisade style. Where lowlands had to be crossed, large box-shaped structures of oak were built as a foundation to cope with the marshy terrain. Finally, a narrow passage of the Schlei (a 42km long inlet of the Baltic Sea) at the



Gjennemsnit med de under Kampesteensmuren staaende Egeplanker Vest for Skandsen № 14.



Plan af Egeplanker, staaende opret i Jorden under Kampesteensmuren Vest for Skandsen № 14.

Egeplanke, 4 Fod lang, 1 Fod 5 Tom. bred og 5 Tom. tyk, funden under Kampesteensmuren Vest for Skandsen № 14.

Figure 2: Oak planks beneath the Fieldstone Wall. The posts of the Palisade Rampart in the documentation of an excavation west of Redoute XIV. The drawing is a lithograph by Jakob Kornerup from 1861, plate IV, and originally contained more than these three plate illustrations. (It is published in black and white in the form shown here in Andersen 1998, 41, fig. 19)

Figure 3: On the single-phase Northern Rampart of the Danevirke, H. H. Andersen found remains of stone paving together with the post holes of the Palisade Rampart as early as 1971. Scan from the report by H. H. Andersen 1971 (photos accompanying report FHM 1677)

Reesholm peninsula was protected with an offshore work or 'sea barrier' in the form of a 1.6km-long structure consisting of a series of 4.5 by 5m wooden boxes.

Due to the good preservation of wood in occasionally waterlogged environments, dendrochronology was used to determine that the trees used were felled between AD 737 and 740 (Kramer 1984: 347) and were then certainly used in construction during this period or very soon afterwards. Within a few years, towards the end of the AD 730s, a massive wooden fortification consisting of several sections and measuring a total of 8.5km in length was erected – the so-called palisade rampart (Figure 2)

In areas where the timber palisade had decayed – apart from few burnt remains of the outer planking – mainly indirect traces of the load-bearing palisade posts were documented during various excavations. At intervals of about 2m, post holes about 1.5m deep were found, in which oak posts, wedged with stones, originally stood. This constructional trait was also found on the Northern Rampart and as early as 1971 H.H. Andersen discovered in connection with it remains of a stone paving (Andersen 1971; 1998: 97–107; Madsen 1976: 12–19) (Figure 3). Due to its poor state of preservation and the lack of comparative

Figure 4: The Fieldstone Wall during excavation in Dannewerk-Rothenkrug in 2013, viewed from the northwest. The exceptionally good preservation of the rear side is due to its covering by the older rampart of heather turf sods (black-grey material) behind it and the filling of the rear wall construction pit with sheer yellow clay (on the right in the section). (Photograph: ©ALSH, Astrid Tummuscheit)

examples, the interpretation of the stone pavement had yet to be achieved. It was only when similar stones were found under the Fieldstone Wall during excavations in 2013 that their function could be determined more than 40 years later.

Solving the puzzle – a stone pavement beneath the Fieldstone Wall

During the excavation in 2013, parts of the very well-preserved backside of the Fieldstone Wall (to be described below) were also uncovered down to its base (Figure 4). It was a top priority to avoid undermining, which could have led to the collapse of the wall. Therefore, we dug vertically down the wall surface, supposedly to the lowest layer of stones. It is thanks to the attentiveness (and curiosity!) of an employee that it did not remain at that, because when he probed into the black heather sods under the wall, there were far more field stones that lay deeper, slightly further inwards and therefore not initially visible.

Closer examination revealed that these stones belonged to a slightly recessed, neatly laid pavement beneath the later wall (Figure 5). Like those of the Fieldstone Wall, the stones were placed in a layer of unfired clay, which, however, was not yellow, but blue-grey (Tummuscheit and Witte 2019: 96). This finding corresponded very well with the stone paving described above, which was discovered by Andersen on the Northern Rampart in

Figure 5: In 2013, traces of a stone pavement were found in the Main Rampart, together with large post holes. The pavement was later covered by the Fieldstone Wall (Photograph: ©ALSH, Astrid Tummuscheit)

1971, and – as there – can be seen in connection with the older wooden palisade. Since the neatly laid stones have so far only been found north i.e. 'behind' the row of posts, it is likely to be a fortified walkway behind the actual palisade.

Further evidence of this feature was discovered in 2024 by the authors, approximately 250m south-west of the gate excavation, also in the main rampart of the Danevirke. During a re-excavation of the trenches of Herbert Jankuhn and Günther Haseloff from 1936 (Jankuhn 1937), the same recessed stones were found under the Fieldstone Wall. They were also set in blue-grey instead of yellow clay. They also represent the remains of the paved walkway belonging to the wooden palisade of the AD 730s, which later served as the basis for the construction of the Fieldstone Wall.

This structure was previously unknown at the Danevirke and changes our understanding of this construction phase in the early eighth century. It is a new discovery that is also unknown from other sites. Furthermore, we have no information from written sources regarding who was responsible for this reinforcement. This major expansion demonstrates, however, a strong authority that must be seen in connection with the development of royal power in Denmark.

The Fieldstone Wall

It is difficult to determine how long the wooden palisade of the AD 730s remained in use. The archaeological record shows that the Fieldstone Wall, an even more ambitious construction project made of stone, replaced the palisade. This clearly referred to the wooden predecessor, as the oak posts, at least some of which were still standing, were integrated into a wall approximately 4km long, 3m wide and equally high, consisting of an estimated 20 million field stones, whose central longitudinal axis was formed by the older row of posts. The wall consisted of two well-built vertical stone façades while the interior was built throughout of clay and rubble ('shell wall'). Mortar made from unfired clay served as a binding agent. On the front and the back of the wall, the stones were laid repeatedly in a herringbone pattern *(opus spicatum)*. This was probably used less for aesthetic reasons than for structural reasons. A survey of the stone material showed that several of the stones had been dressed into specific shapes, giving them protrusions, projections and points. Presumably, this treatment was intended to give the rather rounded glacial erratics better grip in the wall structure. In addition, on some occasions longer carved stones had been inserted as a means of stabilisation, acting as wall anchors between the outer shells and the wall interior. Finally, during a number of excavations, several post holes were found along the wall-front, suggesting a wooden revetment ('Holzverkleidung') of the south-facing façade. However, it was only during the excavation of the gate at Dannewerk-Rothenkrug that it was shown that these had been added later. This could mean that it only became apparent later on that the unfired clay mortar could not withstand the weather conditions in these latitudes and had to be protected by wooden cladding.

On both sides of the gate (Figure 6), in front of the Fieldstone Wall, there was a sloping embankment made of densely packed fieldstones set in an artificial clay bed. This construction is believed to date from the same period as the Fieldstone Wall and was probably intended primarily to visually enhance its monumentality.

The dating of the Fieldstone Wall

The stratigraphy of the Main Wall shows that the Fieldstone Wall was younger than the wooden palisade of the AD 730s and not – as previously assumed – a contemporary component of the same construction. The fact that these were two separate structures built at different times is further emphasised by the situation on the Northern Rampart, where the same palisade post holes were found with the stone paving, but no Fieldstone Wall.

At the Main Wall, the fieldstone phase referred to its predecessor in several aspects. For example, the old row of palisade posts became the central axis of the Fieldstone Wall and, where it still existed, was integrated into the wall. In several places, oak timbers that were still standing left cavities in the masonry after the wood had decayed. In at least one case, field stones laid on top sealed an older, already filled post hole. The

Figure 6: The ruins of the Fieldstone Wall, which were particularly badly looted at the front, seen from the southwest across the gate opening. In the background is the modern road Am Ochsenweg, which crosses the Danevirke here (Photograph: ©ALSH, Astrid Tummuscheit)

palisade post must have already decayed or been removed. The fact that the builders of the Fieldstone Wall based their work on the older structure can also be seen in the adoption of the northern(rear) edge of the stone paving belonging to the palisade. Although the Fieldstone Wall protrudes about 20cm out of the paving at the points examined, its alignment with the older structure is unmistakable. The Fieldstone Wall, i.e. its components made of glacial deposits and unfired clay found in the surrounding area, cannot be dated by itself. It is undoubtedly younger than the wooden palisade, which dates back to the AD 730s. At the same time, the direct reference to and orientation towards the older structure makes it seem impossible that there could be too great a time gap (of centuries) between the two. For a comparable palisade rampart, the older Olgerdige from around AD 30–130 near Tinglev (Denmark), about 60 km north of the Danevirke, for example, maintenance measures have been recorded for at least 100 years (Christensen 2023: 38). Based on the lifespan of the oak wood on the Danevirke and regular maintenance of the palisade, it can be concluded that the construction of the Fieldstone Wall could have taken place a few decades later at the earliest. At present, however, its precise date within the eighth century remains uncertain.

An unique monumental stone structure in the North

Until the eleventh century AD, there was no tradition of building with stone in the Danevirke area. Houses, fences, bridges, and fortifications were built exclusively with timber. There were no known constructions like the monumental Fieldstone Wall in the surrounding region.

In contrast to the lowlands of the Jutlandic peninsula, suitable building materials were available further north, which had already led to the development of older stone building traditions. Stone structures in Sweden and Norway were built using dry stone walls without the use of mortar. The characteristic, reccurring *opus spicatum* of the Fieldstone Wall of the Danevirke, is, however, not known there. The Scandinavian stone structures are therefore not suitable as models for the Fieldstone Wall.

During this period, the Danevirke served primarily to defend the border against the Saxons in the south, but also against the Carolingians, who under Charlemagne attempted to extend their influence beyond the River Elbe to the north in the late eighth/early ninth century AD. Written sources indicate contacts between the 'Dani' and the Franks as early as in the eighth century AD, and particularly in the first half of the ninth century AD, there were interactions in which envoys from the King of the Danes also experienced the monumental architecture in the Carolingian centres of power.

Whether ninth-century AD Carolingian masonry occurs also north of the River Elbe in parts of the Church of Bonifatius, in Schenefeld, Steinburg district, approximately 50km south of the Danevirke, as suggested in older research is now considered highly controversial (Kramer 1981).

Further south, the late eighth and ninth centuries AD can be regarded as a period of revival of monumental stone construction north of the Alps between Antiquity and the Middle Ages, but there are still many unanswered questions in research on Carolingian masonry techniques. In a compilation of fifty buildings between Hildesheim and Geneva published in 2016 (Papajanni and Ley 2016), the example of the Niedermünster in Regensburg (Papajanni and Ley 2016: 233–239; Wintergerst 2019: 34–49) is cited. Here remains of walls from the eighth century AD were excavated which, due to the use of *opus spicatum*, are comparable to the construction of the Danevirke Fieldstone Wall. In general, the herringbone pattern, which originates from Roman building traditions, appears to be a characteristic feature of Carolingian architecture. Examples of the use of anchor stones can also be found in the Carolingian south (e.g. in the monastery of Müstair in Switzerland, eighth century AD).[1] The older research opinion that the Fieldstone Wall of the Danevirke is no older than the eleventh or twelfth century AD due to the *opus spicatum* has now been finally refuted.

[1] Goll J. 2025, Stiftung Pro Kloster St. Johann, Müstair, Switzerland. E-mail to the authors, 2 June.

Figure 7: The illustration shows an attempt to reconstruct the Palisade Rampart (built in the late 730s) based on archaeological findings. Since the post holes with stone wedges were preserved, but the wooden palisade itself was not, we can only speculate about its exact height, construction and appearance. During the excavation, the sediments in the ditch in front of the wall showed clear signs of water influence and also indicate standing water; however, it is questionable whether this water was permanent. (Illustration by Anselm Zielonka, SciComLab)

How the technical knowledge and craftsmanship reached the north is unknown. There is evidence, however, that at the court of Charlemagne, there was an exchange of knowledge among craftsmen 'from all countries on this side of the sea' (Papajanni and Ley 2016: 12; own translation from German). In addition, the Royal Frankish Annals describe envoys of the Danish King Siegfried (father of Godfrey), who visited Charlamagne in AD 782 at the Paderborn Palace/Palatinate, built in AD 776. It is plausible that the inspiration for the construction of the Fieldstone Wall was based on direct contacts and that travelling groups of craftsmen passed on the necessary know-how.

The wall of Godfrey

It is certain that the Danevirke was renovated, enlarged and reinforced in the late AD 730s in a massive wooden construction project (Figure 7). The background to this expansion may have been the expansionist ambitions of Charles Martel, grandfather of Charlemagne, who between AD 718 and 739 directed his efforts against the Frisians and Saxons. In AD 734, the Frisians were defeated and their main territory captured – also in the AD 730s, Charlemagne launched a campaign against the Saxons. Further north, this is likely to have led to unease and uncertainty, triggering the major expansion of the Danevirke. Who was responsible for this expansion is not known.

The situation was different during the following phase of expansion – the building of the Fieldstone Wall. It is impossible to determine exactly when the wall was built. However, archaeological evidence shows that it was erected with reference to the older wooden structure. As explained above, the time span was at least several decades. From AD 772 onwards, Charlemagne's expansion into Saxon territory (Saxon Wars) once again brought him dangerously close to the area of the Danes. It is known from written sources that Charlemagne handed over the Saxon settlement area north of the River Elbe to his Slavic allies, the Abodrites, in AD 804. The conflicts between the Franks and Saxons in the last third of the eighth century AD must have been a real threat of invasion for the Danes. As a result, their king Godfrey fought a preventive war against the Abodrites in AD 808 and, according to the Royal Frankish Annals quoted at the beginning, decided 'that the borders of his realm [...] were to be fortified with a rampart'.

The Fieldstone Wall must be regarded as a specifically planned defensive structure and prestige project, the construction of which required considerable resources in terms of labour and materials over a long period of time. In view of the highly specialised craftsmanship required, which was not available locally, and the scale of this significant structure, its construction can only be attributed to a powerful ruler, as Godfrey is characterised in the sources. The Royal Frankish Annals describe on several occasions a Danish royal power that potentially possessed significant military strength (Andersen 2017: 238–243). In the eyes of the Carolingians, Godfrey was a serious opponent whom they believed capable of undertaking an ambitious and resource-intensive expansion of

Figure 8: The illustration shows an attempt to reconstruct the Fieldstone Wall (built around 800) based on archaeological findings. The wall was built in front of the older heather Turf Rampart (around 500) and over its direct predecessor, the Palisade Rampart (late 730s). Its post holes with stone wedges remained preserved under the Fieldstone Wall and formed its central axis. After its completion, the wall proved to be sensitive to weather conditions and was therefore covered with wooden cladding on the front. Since the wall crown has not yet been found completely preserved in any excavation, its exact appearance can only be speculated upon. What is certain, however, is that there must have been a covering to protect the clay-stone construction. (Illustration by Anselm Zielonka, SciComLab)

the Danevirke. The uniqueness and monumentality of the Fieldstone Wall fit in with the picture painted by the Royal Frankish Annals of Godfrey and the historical background. The archaeological evidence of the Fieldstone Wall, its stratigraphic connection to the older palisade, and possible Frankish construction design in no way contradict a construction period around AD 800. It is difficult to image that the Royal Frankish Annals refer to other phases in the construction of the Danevirke but have left no traces in the archaeological record. For this reason, only the Fieldstone Wall can be considered the 'Wall of Godfrey' ('Godfredsvold' in Danish or 'Göttrikswall' in German) (Figure 8).

Conclusion

Our fieldwork demonstrated five phases for the Main Rampart. Phases 1/2 and 3 (Earthen Ramparts and Turf Rampart) relate to the fifth/sixth century initial construction of the Danevirke, Phase 4 to an early eighth-century Palisade Rampart, and Phase 5 comprises the Fieldstone Wall, with a concluding medieval Phase 6 (Brick Wall). However, the relationship between Phase 4 and Phase 5 had been unclear. We now postulate two major structures in the eighth century AD that were built several decades apart. Our findings here show that the Palisade Rampart (Phase 4) dated to around AD 740. Meanwhile, the Fieldstone Wall (Phase 5 was built around AD 800) and with some confidence can be called the 'Wall of Godfrey'.

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