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Excavations at St Ishmael deserted medieval settlement, Carmarthenshire

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Building remains emerging out of sand dunes at the deserted medieval settlement at St Ishmael on the Towy estuary, Carmarthenshire, first noted in the late nineteenth century, were recorded intermittently between 2010 and 2018. A linear arrangement of at least eight, rectangular structures with stone footings are known, lying along the foreshore over a distance of c. 300m, to the south of the medieval church dedicated to St Ishmael. The building types and form of settlement cannot be paralleled in the region. Occupation between the twelfth to fifteenth centuries is indicated by a small ceramic assemblage. Associated plant, animal and fish remains indicate domestic occupation. The fortunes of the settlement were likely to have been linked with fisheries in the estuary. These and the settlement were abandoned in the fifteenth/early sixteenth century due to coastal change and the encroachment of sand dunes. Limited activity up to the late sixteenth century is suggested by a few sherds of post-medieval pottery

INTRODUCTION

The deserted settlement on the Towy estuary foreshore (centred on SN 362 080) to the south St Ishmael's Church, Carmarthenshire, was first noted by Mr Lloyd Thomas of Tan Lan Farm in 1896 after a storm uncovered several stone buildings beneath sand dunes:

Mr. Lloyd Thomas saw walls there, which were in some places a foot or two high. They formed rooms, and showed unmistakable fireplaces. He had some forty or fifty loads of the stone carted away to his farm. . . . The ruins extended, he thought, some 200 or 300 yards along the side exposed to the sea. (Rhys 1900, 75).

G. E. Evans recorded and published on the remains in 1907. His original notes are lodged with the National Monuments Record, Aberystwyth,⁸ and include a sketch of a stone wellhead described as being sand-filled though the precise location of this structure is not known. The Royal Commission recorded the site in 1912 and in 1913 (RCAHMW 1917, 245–6). 'Experimental excavations' (undated) carried out by Professor J. W. W. Stephens recovered a silver penny of Edward I (reigned 1272–1307), a medieval sickle, the bowl of a lead spoon and a quantity of animal bone, including horse, sheep, and deer (Anon 1949). During the 1990s, Heather and Terry James of Dyfed Archaeological Trust, and others, monitored the site as further remains of the settlement were revealed (James and James 2003, fig. 1). In 2010–11 and again in 2017–18, Dyfed Archaeological Trust with funding from Cadw/Welsh Government excavated several of the stone buildings (see Meek 2015 for an interim report on the 2010–11 excavations). The 2010–11 work was part of the wider *Arfordir* project run by the four Welsh archaeological trusts aimed at

involving volunteers in recording archaeological sites affected by coastal erosion (Rees 2019, 276). Owen Harris, an *Arfordir* volunteer, carried out some of the initial recording of the site in 2007–11.

St Ishmael lies at the confluence of the rivers Tâf, Towy and Gwendraeth, on the east bank of the Towy estuary (Figs 1–3). It would have been a hub of economic and commercial activity during the medieval period: Carmarthen, one of the most important towns and ports in medieval Wales, lies 12 kilometres upstream on the lowest bridging point of the Towy; Kidwelly town, castle and port lie 4.5 kilometres to the east on the Gwendraeth estuary; Laugharne town and castle are in direct line of sight, 6.5 kilometres to the west on the Tâf estuary; St Clears town and castle lie 6 kilometres upstream from Laugharne; and Llansteffan village and castle lie just 2.5 kilometres across the Towy estuary.

The remains of the deserted settlement are emerging from beneath a *c.* 300m stretch of eroding sand dunes (from SN 3622 0804 to SN 3632 0778) on the east side of the Towy estuary between 300m and 600m south of St Ishmael's parish church (Figs 2–4). The Swansea to Carmarthen mainline railway runs through a cutting in the sand dunes 30–40m to the east of the deserted settlement. Although the rail track is at a higher level than the deserted settlement, it is possible that its construction in the 1850s disturbed lower-lying archaeological deposits associated with the settlement. At some time in the early to mid-

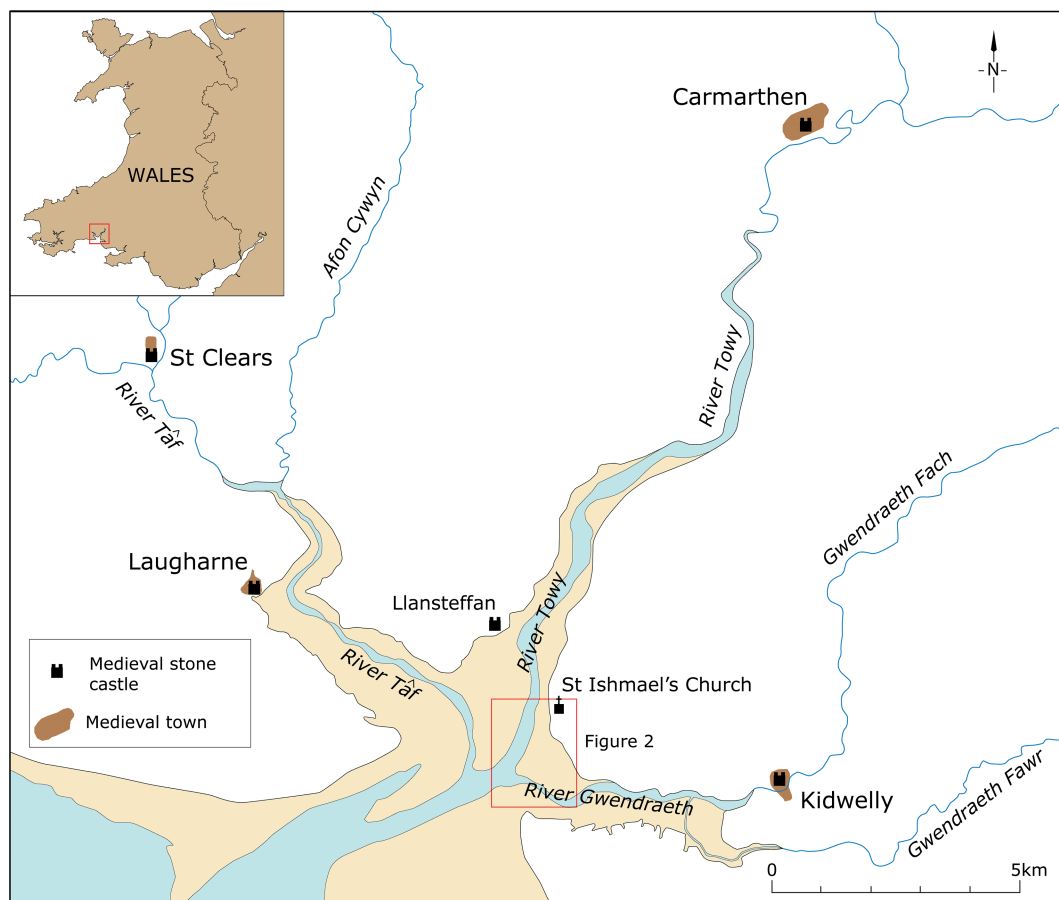


Fig. 1. Map showing St Ishmael in relation to medieval towns, major castles and rivers.

twentieth century the construction of coastal defences protected the sand dunes from erosion. These defences consisted of hundreds of tons of foundry waste deposited behind a barrier of upright iron rails (reused railway lines) and wooden planking. The defences have been breached and all that now survives is a line of upright rails *c.* 5m from the current eroding face of the sand dunes, occasional wooden planking and a spread of foundry waste on the foreshore. At low tide and mid-tide natural stony banks (known as scars) can be seen running out from the foreshore. James and James (2003, 39) interpreted the compact stones in a clay matrix of these scars as moraines deposited at the end of the last ice age. Between the scars are extensive mudflats which overlie a submerged forest/peat shelf, which in turn overlies blue clay. Sandstones and conglomerates of the Devonian and Silurian Periods form the underlying bedrock,⁹ over which at the coast edge are glacial tills and sand dunes.

During the medieval period St Ishmael lay within the foreignry of Kidwelly, part of the commote of Kidwelly, a subdivision of the lordship of Kidwelly (Rees 1953, 173–303). There is no known documentary evidence for the deserted settlement within the sand dunes and its name is unrecorded. Some earlier writers had assumed it was called ‘Hawton’ as this name is shown near the name St Ishmael on Christopher Saxton’s late sixteenth-century map of Carmarthenshire, but this place-name (also known as ‘Alkenchurch’, ‘Hawkinge Church’ etc.) has been shown to be synonymous with the village of Llansaint, about 1.5 kilometres further east (Stephens 1937; 1939a). St Ishmael’s Church is first mentioned in 1115 when it was granted to Sherborne Abbey in Dorset (Stephens 1939b, 66), although the dedication to St Ishmael may indicate a pre-Anglo-Norman foundation. The present church mainly dates from the thirteenth to fifteenth centuries (Ludlow 2000). Although the settlement is undocumented, there is a wealth of documentation for fish weirs in the Towy estuary and the adjoining Tâf and Gwendraeth estuaries, several of which lie close to the deserted settlement. James and James (2003) in their review of the documentary and other evidence demonstrated that these fish weirs had been established by at least the thirteenth century and during the medieval period were largely under the control of the lordships of Kidwelly, Llanstephan and Laugharne, and Whitland Cistercian Abbey. James and James (2003) attributed the abandonment of the weirs by the fifteenth/early sixteenth century to coastal change and besandment.

EXCAVATION AND RECORDING

The remains of up to eight buildings have been recorded (Figs 2 and 4). Buildings 1–4 were investigated in 2010–11 with additional recording undertaken in 2013–14 and in 2017–18. Buildings 5–8 were investigated in 2017–18. In early 2021 further recording was undertaken as more of the village was revealed following winter storms. In all instances only the visible building remains were examined; care was taken not to exacerbate erosion by cutting into the overlying sand dunes. Not only was the area available for investigation restricted to what was visible, but excavation was impeded by water percolating through the sand and resting on and flowing across the underlying archaeological deposits and geological clays. Most of the remains of Buildings 7 and 8 lay on the foreshore, the overlying wind-blown sand having eroded some time ago, and were buried beneath beach shingle, stones, and boulders (Fig. 5). Elsewhere, wind-blown sand lay directly on walls and floors with no intervening silts, soils or rubble.

Stone used in the buildings was mostly roughly dressed, locally sourced sandstone, readily available from outcrops along the estuary, and water-worn boulders, probably derived from the foreshore. Where it had not been washed away, clay was the bonding material, except for the west wall of Building 6 where lime had been used. Walls were well constructed, randomly coursed, and generally 0.6–0.85m wide. Most of the walls that had been exposed for some time had been reduced to just one or two masonry courses, but the east wall of Building 7 survived up to five courses high and the freshly, partially, exposed common

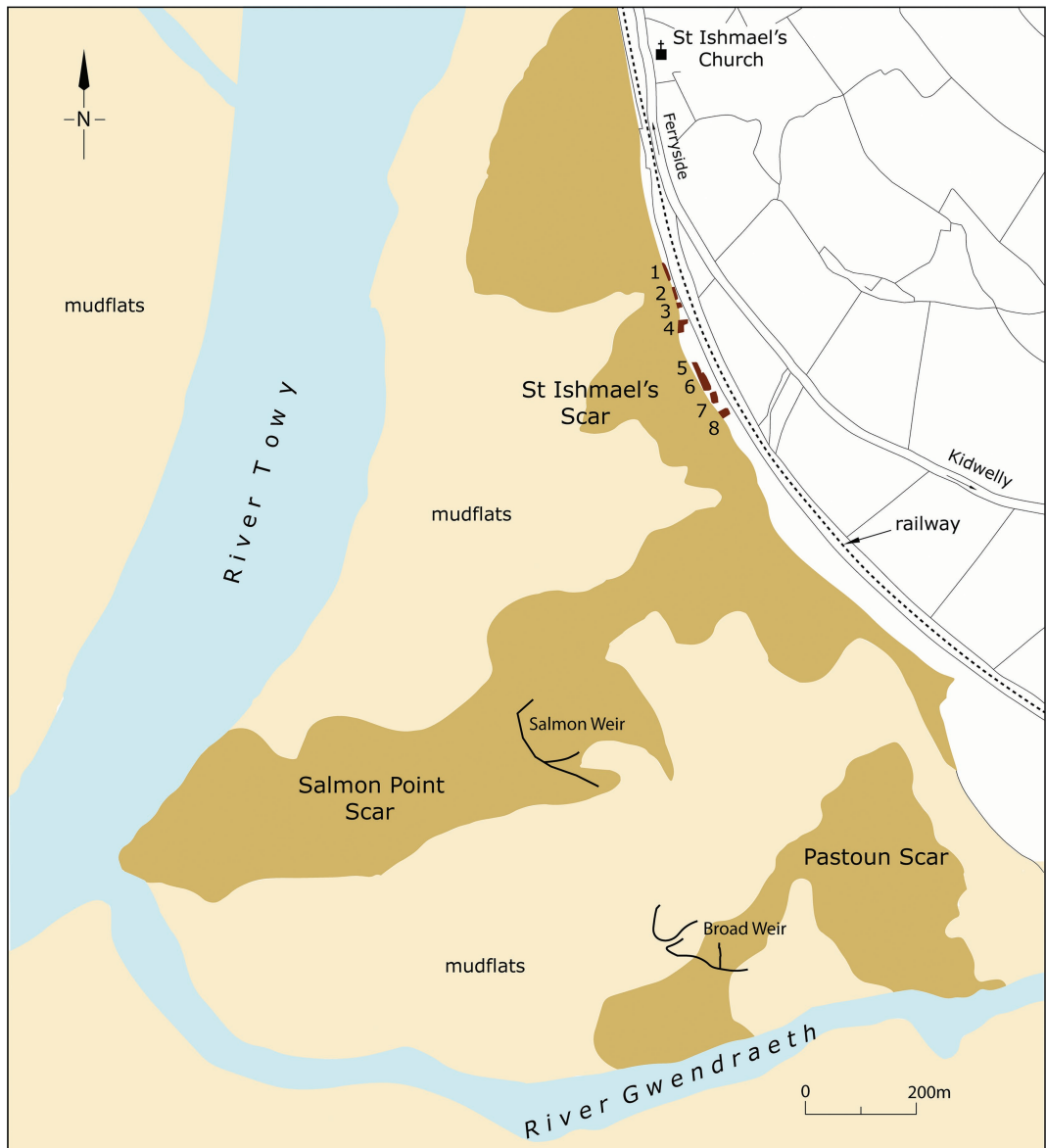


Fig. 2. Location of recorded buildings (numbered 1–8) in the St Ishmael deserted settlement. The location of the two fish weirs (Salmon Weir and Broad Weir) are from James and James (2003, figs 5, 11 and 16).

gable end of Buildings 5/6 stood up to 1.8m high. There are hints that gable ends of other buildings beginning to be exposed stand to a similar height. John Rhys's 1900 account of the site records forty or fifty loads of stone being carted away, which may account in part for the reduced nature of some of the walls.



Fig. 3. Aerial view looking north east taken in 2015. The deserted settlement lies on the foreshore just left of centre. Salmon Point Scar is in the centre of the photograph, the Towy estuary is on the left and the Gwendraeth estuary to the right. © Crown copyright, with permission of RCAHMW.

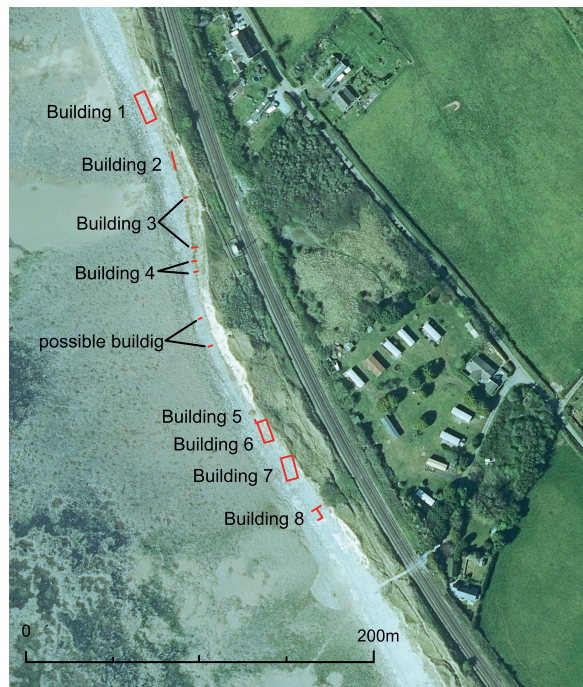


Fig. 4. Vertical aerial photograph taken in 2020 with the locations of the buildings superimposed. North to the top. *RGB Aerial Photography* – ©Bluesky International Limited.



Fig. 5. Aerial view taken from a drone showing Buildings 7 and 8 under excavation looking south east.
Photograph: Peter Francis.

Building 1 (SN 36225 08026)

This is the most northerly of the buildings so far definitely identified (Fig. 6). In 2010 three E/W aligned walls and associated features were visible, the west wall having been eroded and the east wall lying beneath the sand dune (Meek 2015, photos 1–2). By 2014 erosion had removed parts of, and revealed more of, the E/W aligned walls and by 2017 sections of the formerly buried east wall had been exposed.

The building measured 16.5m N/S. The north wall (102), south wall (104) and east wall were all substantial, *c.* 0.85m wide and up to five courses in height. An internal E/W wall (103) was less substantial, *c.* 0.65m wide, and may have butted up against the inner face of the east wall. It overlay pit (110). A *c.* 1.25m-wide doorway was located in the east wall, immediately to the north of the junction with the E/W wall (103), on the edge of the sand dunes. This doorway seemed to be blocked by a wall just emerging from the sand dunes. The building appeared to be divided into three rooms. The remains of stone slab floors (107, 108 and 111) were present in the two end rooms but were absent from the central room. A hearth (117) constructed from stone slabs lay in the central room. A radiocarbon determination of cal. AD 1437–1523 (74.1% probability) and cal. AD 1575–1625 (21.3% probability) (SUERC-32875) was obtained from a charcoal rich layer on the hearth. A sherd of pottery, probably of twelfth- to fourteenth-century or possibly later date, was found in the floor of the building.

Traces of a wall immediately to the north of Building 1 (not shown on the figures) may be the remains of another building. A rough arrangement of large stone slabs with no clear form or definition resting on the underlying natural clay midway between Buildings 1 and 2 seemed to be the remains of a yard (Meek 2015, fig. 1).

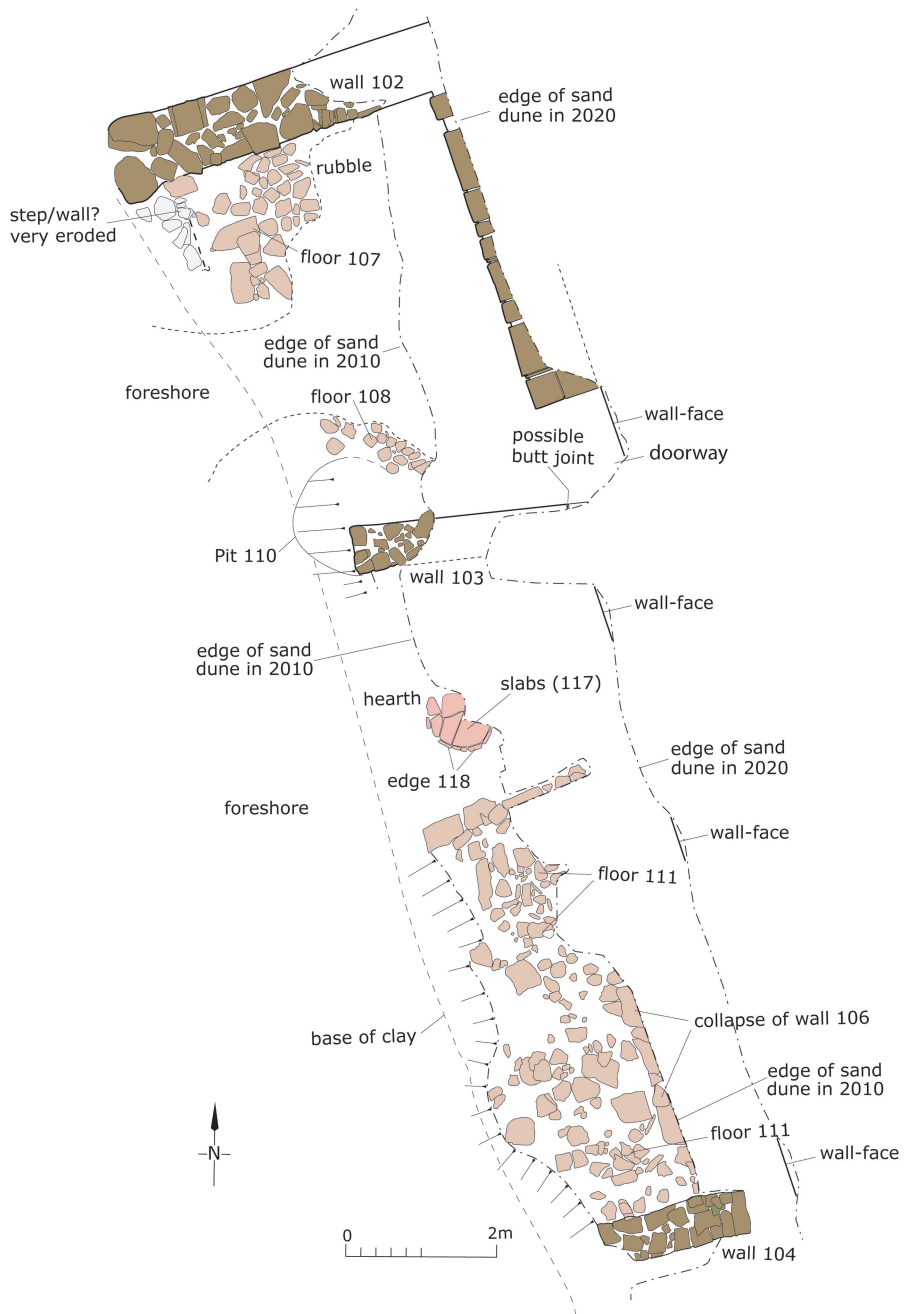


Fig. 6. Plan of Building 1.

Building 2 (SN 36238 07994)

Building 2 lay *c.* 27m to the south of Building 1. By 2011 erosion had exposed a N/S wall, including a doorway of the building and a narrow strip of land immediately to the east of the wall (Figs 7 and 8). The wall was very poorly preserved, being little more than a disjointed line of stones. When recorded in 2017 erosion had removed all the stonework that had been visible six years earlier. In 2011, two E/W walls emerging from sand to the south (not shown on the plan) may have been part of this building (Meek 2015, figs 5–8 and photos 4–5). If correct, then the structure would have been over 15m N/S and the remainder of the building still lies beneath the sand dune. However, the N/S wall and doorway may have been the remnants of the east wall of the building, the rest of it having been removed by coastal erosion.

The 0.9m-wide doorway was defined by two upright boulders, two low steps and a square paved area (248), 1.2m across. A curving kerb of upright stone slabs (214) to the east of the N/S wall may have provided a barrier to water running down the from the east into the building (assuming the N/S wall was the east wall of the building).

Layers of clay and sand lay beneath and to the north and south of the paved area and between the N/S wall and the kerb. These became progressively more clay-rich with depth. They were assigned contexts numbers 201, 215, 249, 250, 251, 252 and 257 depending on their location. Meek (2015, 92) considered that those to the east of the N/S wall lay inside the building and were beaten earth floors which had become waterlogged over time to such an extent that individual layers could not be discerned. However, these deposits may have been disturbed natural clays and silts lying outside, to the east, of the building.

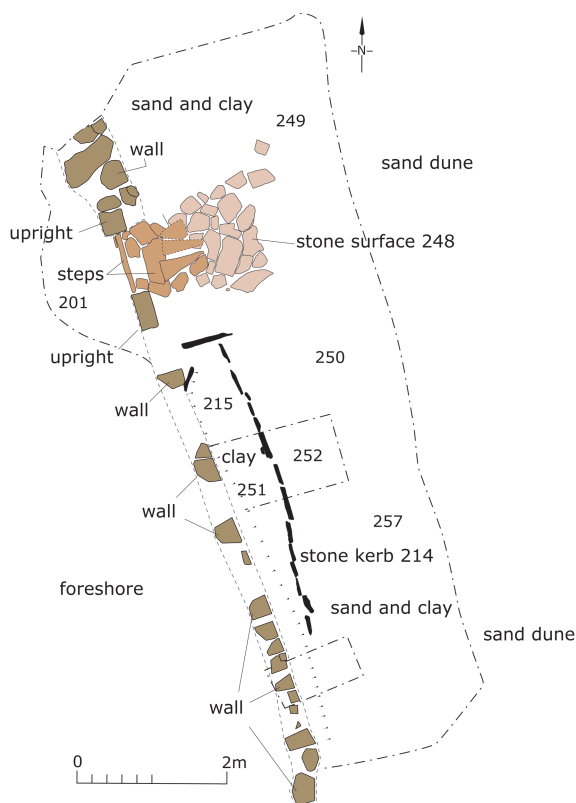


Fig. 7. Plan of Building 2.



Fig. 8. View of the doorway and floor of Building 2 looking south. Scales 0.5m intervals.

Medieval pottery from the deposits had a broad date range of date between the twelfth to the fifteenth centuries. Archaeobotanical remains were analysed from context 251

Building 3 (SN 34247 07963)

Building 3 comprised two E/W aligned walls 15.4m apart protruding out of the eroding sand dunes (see also location on Meek 2015, fig. 1). It is assumed that these are elements of a single building, but this is not certain. No dating evidence was recovered.

Building 4 (SN 36247 07934)

In 2011, this building comprised a 3m-wide room defined by walls standing up to 0.6m high to the north, south and east (see Meek 2015, photo 3). By 2017 only a small part of the east wall remained. Well-laid stones to the north of this building represented the remains of a yard or floor (see location of building and yard on Meek 2015, fig. 1). No dating evidence was recovered.

Building 5 (SN 36289 07851)

Only the south-west corner of this building was visible in 2018, the remainder lying beneath sand dunes (Fig. 9). The south gable end (common with Building 6) stood up to 1.8m high. The west wall could be traced for *c.* 5m before it disappeared under the dunes. Both walls were 0.8m wide. Building 6 butted up against the south wall of Building 5. A few charred cereal grains and waterlogged plant remains were present in deposits (504, not shown on plan) in front of the building (Hunter Dowse 2021). No dating evidence was recovered.

Building 6 (SN 36294 07839)

This building butted up to Building 5 and therefore post-dated it. A 12m length of wall with a slightly off-centre doorway flanked by two upright stones defined the west side of Building 6 (Figs 9 and 10). A large, flat stone slab formed the threshold outside (west), with paving to the north and south. The south wall of the building was emerging from the sand dunes, confirming the N/S length of the building as *c.* 12m. Both visible walls were 0.7–0.75m wide and survived up to *c.* 0.5m high. Winter storms of 2020–21 revealed part of the east wall of this building, standing up to 0.6m high, which included a splayed recess; this may have been the bottom of a window opening, or an alcove. Assuming a regular, rectangular plan, this building was *c.* 4.4m wide. The west wall of this building was the only one to have evidence of lime mortar bonding and possibly lime plaster. The south wall was clay bonded. No dating evidence was recovered.

Building 7 (SN 36308 07818)

This was the most complete building of those investigated, with the whole of the west and south walls, most of the east wall and almost all of the interior exposed (Figs 4, 11, 12 and 13). It measured 12m N/S and 4.75m E/W internally, with the walls between 0.7m and 0.8m wide and standing up to five courses high. Excavation concentrated on the interior at the southern end.

A blocked doorway lay approximately midway along the west wall and had a massive threshold slab within a paved external area. No other opening was evident in the exposed walls, although a butt joint in the east wall could have been the south side of a blocked entrance, most of which still lies under the sand dunes.

Removal of deposits of shingle, sand and collapsed walling material within the interior of the southern end of the building revealed thick clay floors. It was not possible to distinguish individual deposits apart from a distinct beaten clay and ash floor (context 2011) (Fig. 13), which contained a rich waterlogged plant assemblage (Hunter Dowse 2021). A drain constructed from two parallel rows of upright stone slabs was associated with these floors and led out through the south-west corner of the building (Fig. 11). It is assumed that the drain flowed under the walls, but this could not be proven as erosion had removed the corner of the building.

The building's walls and floors rested on and in sections cut into a substantial layer of clay (context 2008) which contained five sherds of twelfth-century proto-Ham Green cooking pots. The only other artefact from the floor deposits was a copper alloy aglet of unknown date. The clay sealed a possible earlier wall or drain (context 2010), on a slightly different alignment to that of Building 7, that ran beneath the south and east walls of the building. During excavation it was interpreted as a wall rather than a drain. It was at a lower stratigraphic level and on a different alignment to the drain described above. If it were a drain, it might have been designed to direct water percolating from the east side of the building to the west side. A line of upright stones forming a kerb to the south may have directed surface water away from the building.

A fragment of a stone mortar (Fig. 15), probably of medieval date, was found within shingle deposits overlying the building.

Building 8 (SN 36323 07791)

This building, lying on the foreshore, had been badly damaged by erosion and only the eastern end of it survived (Fig. 14). Walls, where they existed, survived as a single course; there were no surviving floor deposits. What did remain indicated that Building 8 was *c.* 4.5m wide and was probably aligned roughly E/W, whereas all other recorded buildings were aligned N/S. A stone wall, which ran off from the north east corner of the building, may have been part of an annex or yard.



Fig. 9. Plan of Building 6. Building 5 is attached to the north end of Building 6.

A large, ill-defined pit or ditch (2036) lay to the south of this possible annex wall. Charcoal, ash, cockle and mussel shells and sherds of medieval pottery were present in the layers of this pit/ditch.



Fig. 10. View of the Building 6 entrance and threshold looking east. Scales 0.5m intervals.

Possible building (SN 36257 07896)

Stone footings midway between Buildings 4 and 5 may be the last remnants of an eroded building, or of a building beginning to emerge from beneath the sand (not shown on plan).

Other features

A ditch (244), pit (225) and flat-based linear pit (219) sealed by a soil (217/230) lay immediately to the south of Building 2, and further south a ditch (238, fill = 237), and a flat-based gully (240) with shallow pit (235) between them was recorded (Meek 2015, figs 9 and 10). Medieval pottery was found in ditch (238) and gully (240) and peat from the lower fill of pit (235) returned a radiocarbon determination of 3487–3105 cal. BC (SUERC-43617). This peat was almost certainly collected from foreshore deposits for use as a fuel.

Several stratified layers (context 2003 uppermost through to 2007 at the base) lay to the north of Building 5. It is likely that they were the fills of a pit or ditch, but this is not certain as it was only possible to examine them in a small box section. Medieval pottery from these layers comprised two proto-Ham Green sherds, one Saintonge Ware sherd and one Redcliffe Ware sherd.

RADIOCARBON DATES

The following radiocarbon dates have been provided by SUERC (Scottish Universities Environmental Research Council). The calibrated ranges have been determined from the University of Oxford Radiocarbon Accelerator Unit calibration programme (OxCal v4.4).¹⁰

SUERC-32875

Context: charcoal-rich layer on the hearth in Building 1

Sample: Prunus sp. charcoal fragment

Conventional radiocarbon age: 400±30 BP

Calibrated range at 2 sigma (95.4% probability): cal. AD

1437–1523 (74.1%), 1575–1625 (21.3%)

SUERC-43617

Context: peat from lower fill of pit 235

Sample: peat

Conventional radiocarbon age: 4562±27 BP

Calibrated range at 2 sigma (95.4% probability):

3487–3472 (2.2%), 3374–3320 (47.9%), 3237–3175 (36.9%), 3162–3105 (18.4%) cal. BC

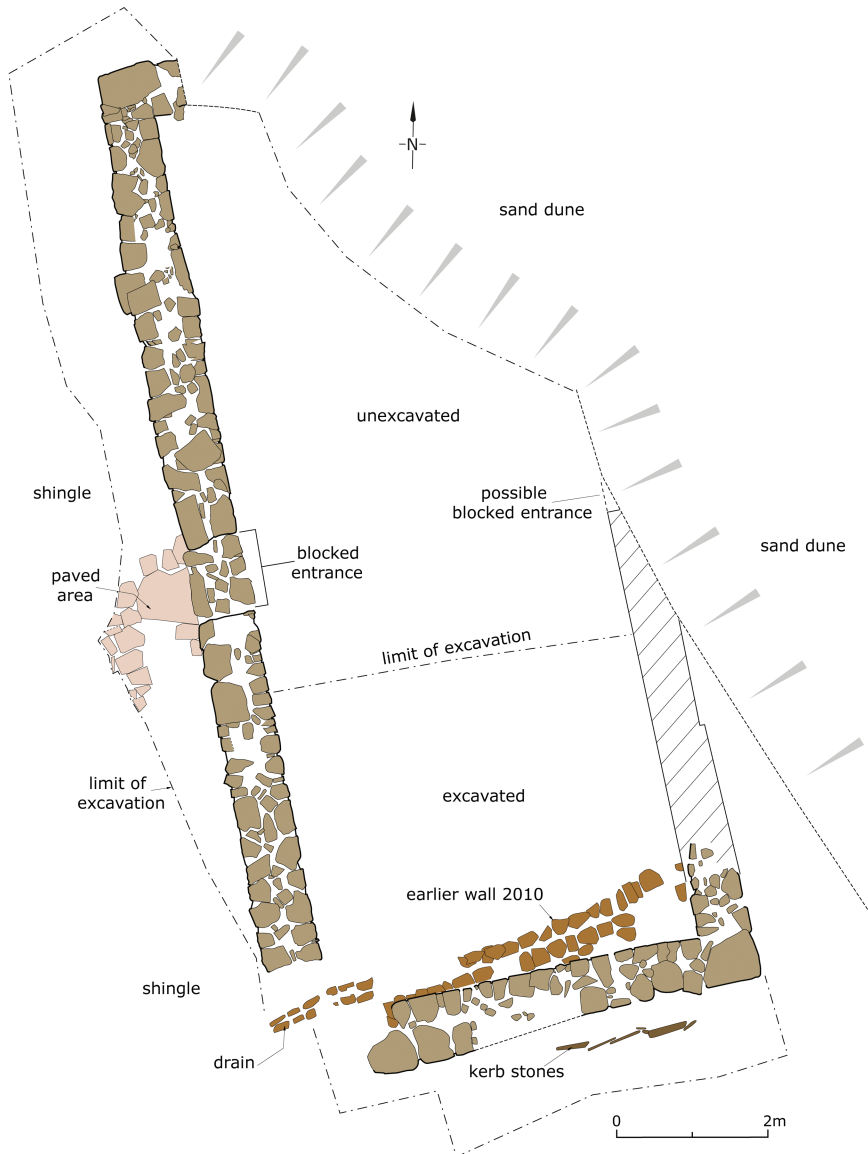


Fig. 11. Plan of Building 7.



Fig. 12. View of Building 7 after clearance of shingle looking north west. Scale 0.5m intervals.



Fig. 13. The excavated south end of Building 7 showing the partly removed beaten clay and ash floor 2011. Looking west. Scale 0.5m intervals.



Fig. 14. Plan of Building 8.

MEDIEVAL POTTERY

By Alice Forward, Paul Courtney and Dee Brennan

Alice Forward's 2013(a) report on pottery from the 2010 and 2011 excavations and on the surface collections made by Owen Harris in 2007–11 incorporated an assessment by the late Paul Courtney (2011). This summary includes Dee Brennan's 2019 report on the assemblage recovered in the 2017–18 excavations. The assemblage from the surface collecting and the 2010 and 2011 excavations has been reported on previously (Forward 2015).

Most of the material is medieval in date, with a possible Roman sherd as well as a few post-medieval sherds. In general, both the excavated and surface retrieved assemblages are highly abraded and fragmented. The sherds are small and there are no apparent joins across contexts indicating that the pottery represents general settlement discard and waste disposal. A quantification of the different fabric types represented and their general date ranges are given in Table 1.

Table 1. Total number of pottery sherds by fabric

Fabric	Date range	Total
Possible Oxfordshire colour coat	3rd to 4th century AD	1
Proto-Ham Green	11–13th century	35
Vale Ware/Ham Green	11–14th century	10
Ham Green Jug	12–13th century	15
North Devon Jar		5
Dyfed Gravel Tempered Unglazed	12–14th century	17
North Devon Glazed Jug	13–15th century	1
Dyfed Gravel Tempered Glazed	13–14th century	2
Bristol Redcliffe Ware	13–15th century	4
Bath A	11–13th century	2
Llanstephan Ware	13–14th century	10
French Saintonge	13–15th century	4
Malvernian oxidised	15–16th century	2
Cornish	13–14th century	2
Worcester Jug	12–14th century	1
Worcester Jar	13th century	2
Minety Ware	11–13th century	1
Somerset post-medieval	16–17th century	1

Building 1

A single sherd of Dyfed Gravel Tempered Ware or North Devon Ware probably dating to the twelfth to fourteenth centuries, but possibly later, was found in the floor of this building.

Building 2

The ceramics from the floor surfaces within Building 2 are consistent with the material from elsewhere on the site. Of note are one sherd of proto-Ham Green ware and another from a Minety tripod pitcher. The presence of Minety Ware within the building in association with proto-Ham Green is a pattern seen from sites along the South Wales coast and would suggest a twelfth-century date for the earliest activity at the site.

Building 7

Five sherds of proto-Ham Green Ware cooking pots came from deposit 2008, a silty-clay, which pre-dated Building 7.

Building 8

One sherd of proto-Ham Green Ware cooking pot and a one sherd of Dyfed Gravel Tempered Ware or North Devon Ware came from pit 2036 associated with Building 8.

Other features

The ceramic material excavated from buried topsoil and pits and gullies outside the buildings all dates from the twelfth to the fifteenth centuries.

Surface collection finds

The material retrieved from surface collection is more varied with regards to the range of fabrics. Later thirteenth-century to late fourteenth-century local ceramics — Dyfed Gravel Tempered Ware jars and Llanstephan Ware jug sherds — are better represented here than in the excavated assemblage. There are several fabrics of note within the group. There are four sherds of Saintonge ware, typically found on castle and port sites in south-west Wales but not usually from small settlement assemblages. Two sherds are likely to be from Cornwall which can be paralleled with the small group of Cornish sherds found during the Carmarthen Greyfriars excavations (O'Mahoney 1995, 20). There are some slightly later sherds within this group, including three sherds of Bristol Redcliffe Ware dating from the late thirteenth century to the fifteenth century.

Conclusions

The range of ceramic material from across the area indicates that settlement was primarily medieval in date, (twelfth- to the fifteenth-century). The few sherds dating to the post-medieval period do, however, indicate that there was at least minimal activity in the area until the late sixteenth century.

The range of early fabrics is typical for settlement in the region established in the first half of the twelfth century with imported wares dominating the assemblage. Proto-Ham Green jars, Ham Green jugs (both Somerset) and Minety Ware (Wiltshire) are typically associated with early settlement in South Wales as seen from excavations at Cosmeston (Forward 2013b), Kenfig (Forward 2012) and Greyfriars, Carmarthen (O'Mahoney 1995).

STONE MORTAR

By Ken Murphy

Approximately half of a stone mortar was found in the beach shingle covering Building 7 (Fig. 15). It is sub-rectangular in shape, with a maximum width of 213mm and a maximum depth of 60mm. Externally it is roughly shaped having a flat base with a prominent lug on one corner and a less prominent lug on the other surviving corner. The 140mm diameter circular bowl is up to 35mm deep with vertical sides and a flat base. Concentric wear grooves are visible on the flat base of the bowl. Part of what may have been a pouring runnel survives on the edge of the fracture line. Made from a fine-grain sandstone. It is difficult to date out

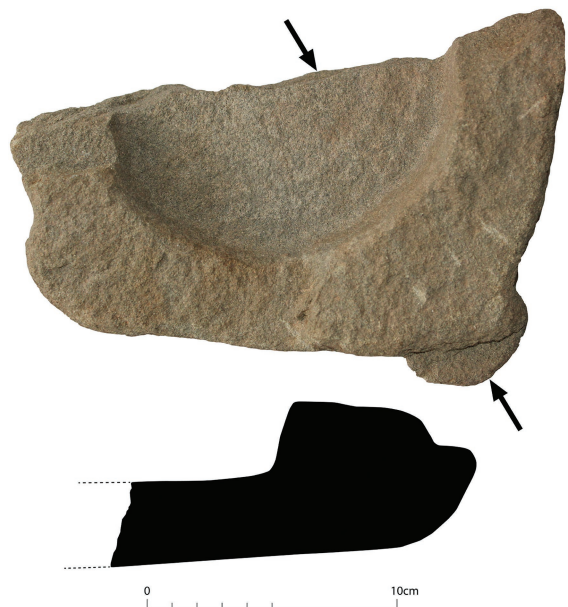


Fig. 15. Stone mortar.

of context, but is probably an example of a four-lugged medieval mortar (cf. examples in Knight 1975; Dunning 1961), albeit a very shallow one.

ARCHAEOBOTANICAL EVIDENCE

By Astrid E. Caseldine and Catherine J. Griffiths, with a contribution from K. Hunter Dowse

A summary of the archaeobotanical evidence from the 2010–11 excavations has been previously published (Caseldine and Griffiths 2015). This is largely reproduced below with a summary of analysis of the material from the 2017–18 excavations (Hunter Dowse 2021).

The plant assemblages from Building 2 and features to the south probably date to the late twelfth century to the fifteenth century, whilst the assemblages from the hearth in Building 1 probably date to the fifteenth century to the early sixteenth century, although they might be as late as the late sixteenth century to the early seventeenth century. The evidence suggests that the main cereal crops used at the settlement were oats, bread wheat and barley and that peas and beans were also grown. From the presence of weed seeds and chaff, unprocessed or only partially processed grain was being brought to the settlement and, not surprisingly given the climate, probably being dried prior to storage. The cereals might have been grown separately or as a mixed crop. Commonly used mixtures in the medieval period were barley and oats (drage, dredge), wheat and rye (maslin, mancorn) and a cereal, often oats, with a legume (bullimong) (Pretty 1990; Hammond 1995). Although oat is still significant, bread wheat dominates in the assemblage from ditch fill (237) of ditch 238 to the south of Building 2, whereas oat dominates the assemblage from floor layer 251 in Building 2. The assemblages from the hearth, probably dating to the fifteenth century to the early sixteenth century, perhaps indicate that by this time barley had become more important, although the assemblages are small. However, it is evident that throughout the life of the settlement a variety of crops were grown.

The cereals would have been used to make bread, oatcakes and porridge and toasted bread was sometimes added to broth. In times of famine cereal usually used for fodder would also have been used for human consumption and after poor harvests bread might have been made from bean flour and residues from sieving wheat (Hammond 1995). Ale could have been made from any of the cereals but particularly barley. From the evidence the diet of the inhabitants of St Ishmael would also have included fresh vegetables, including peas, beans and possibly cabbages, which might have been used in stews, as well as crab apple and hazelnuts.

There is archaeobotanical evidence from a number of other medieval sites in Wales and comparison of the assemblages from St Ishmael with, in particular, sites in south-west Wales such as Laugharne Castle (Caseldine and Griffiths 2005), Dryslwyn Castle (Huntley and Daniell 2007) and Wiston (Caseldine 1995), suggests they are in keeping. The assemblages are largely twelfth-century and thirteenth-century in date and, as in other parts of Wales, in general are dominated by oat, although barley, wheat and rye also occur to a greater or lesser extent. Documentary evidence also indicates that oat provided both a staple diet and winter fodder for animals in medieval Wales (Owen 1991). It should be noted that St Ishmael is one of only a few archaeobotanical assemblages recovered from a rural medieval site in south-west Wales, though there are several early medieval cereal assemblages, mainly from corn-drying kilns (Rackham 2020; Comeau and Burrow 2021).

There is relatively little fifteenth-century and sixteenth-century archaeobotanical evidence from Wales, although assemblages dating to this period were recovered from New Radnor in the Welsh Marches (Caseldine and Barrow 1998). The cereal assemblages were similar with oat, barley and bread wheat

present. Oat was particularly frequent and rye, the latter not recorded at St Ishmael although present in earlier assemblages from south-west Wales, was also present. Oat was also the dominant cereal recorded from a fifteenth-century corn-drying kiln at Collfryn (Jones and Milles 1989). Rather closer to St Ishmael, charred oat, wheat and barley were recorded from a cesspit containing sixteenth-century pottery in the Tudor Merchant's House in Tenby (Nye 1989), as well as a range of other material, (mineralised and non-mineralised), including cereal bran, figs, grapes, coriander and fennel, providing a detailed picture of diet at this time, but perhaps more varied than would be found on a rural settlement such as St Ishmael.

Overall, the botanical evidence from the settlement indicates the main crops grown in the area were oats, wheat and barley, along with peas and beans. Animal feed might have been supplemented with gorse and straw and bracken used for animal bedding. As well as wood, collected from scrub and carr woodland, and cereal waste, peat was also probably used as fuel. Together with animal bone, the crop evidence indicates the settlement was involved in agriculture. The results are also consistent with those from an earlier excavation during which part of a sickle of medieval date was recovered as well as animal remains which included roe deer, horse, Shetland pony, oxen and sheep, all of which also suggested a small agricultural settlement (Anon 1949). However, the occurrence of fish bone at the site is in line with the archaeological evidence for fish weirs in the area (James and James 2003) and suggests the inhabitants were also engaged in fishing as well as farming. The presence of plants indicative of disturbed ground gives some indication of the local environmental conditions at the settlement.

The charred and waterlogged assemblages identified in the analysis of samples from the 2017–18 excavation (Hunter Dowse 2021) have similarities to the earlier work from the site — with oats, wheat, barley, peas and broad bean occurring, albeit in smaller quantities, along with cereal weeds and plants of damp or wet ground. There is also the possibility of rye being present. As suggested by Caseldine and Griffiths, the cereals and legumes could have been grown as individual crops or mixed as maslins to compensate for poor growing seasons or the local microclimate. The cereals and legumes could have made up elements of food for both livestock and human inhabitants, depending on the varying availability of food in the settlement. Flax and hemp seeds from the floor of Building 7 suggest textile production may have occurred at the site. Hemp pollen has been identified from several medieval sites in Wales (Caseldine 1990), as well as possible hemp seeds, with flax, from Rhuddlan, Denbighshire (Williams 1985). The weed assemblage from the site suggests a mixture of crop weeds with plants from damp ground and standing water close by. These damp conditions may have allowed either water, or dew retting, of the plants close to the settlement, in order to produce useable fibres for textiles, rope etc. There is also a suggestion of other potential leafy vegetables and oil producing plants being available to the inhabitants.

The lack of any significant cereal chaff from these samples is an interesting difference from the earlier assemblages excavated from the site. This may suggest that cereal processing was taking place in a discrete area of the settlement, and/or that the waste chaff and straw from the cereals, brassicas, hemp and flax could also have been fed directly to livestock, thereby vastly reducing the likelihood of it being preserved in the archaeological record.

Charcoal

Charcoal identified from the hearth in Building 1 comprised blackthorn (*Prunus spinosa*), cherry (*Prunus* sp.), willow (*Salix* spp.), birch (*Betula* spp.) and oak (*Quercus* sp.). Although only a small assemblage, the evidence suggests that wood for the fire was being collected from scrub woodland, comprising blackthorn, cherry and possibly birch, as well as wetter carr woodland including willow and birch. Oak was also present and may have been a more important component of the woodland than the evidence suggests. However, whatever the frequency of oak woodland in the surrounding area, it seems that scrub and carr woodland may have been preferentially exploited for fuel.

FAUNAL REMAINS

By J. Browning, with additional material by M. Grzybowska

The faunal evidence from the 2011 excavation (Browning 2015) is summarised here, together with a summary of the results of the 2017–18 excavations (Grzybowska 2021). Cockle and mussel shells were noted during the excavation of the pit or ditch (2036) associated with Building 8, but not analysed.

While the identified assemblage is not large enough to permit more than a glimpse of the diet and activities of the settlement's inhabitants, the limited evidence indicates that the resources of both land and sea were exploited. Cattle, sheep/goat, pig, cat, thornback ray and a gadid (cod family) vertebra were identified amongst the hand-recovered assemblage. The majority of the sieved faunal material was highly fragmented and consequently, identifications are rather tentative.

Cattle were the most common of the terrestrial animals, with both mature and juvenile animals present. Sheep/goat and pig were less well represented. A single cat bone may denote a domestic animal, possibly attracted by the promise of fish and retained to keep the vermin at bay. Small mammals were represented by cranial fragments belonging to mice, although these were not identified to specific species. Significantly, they occur only in the floor layers from Building 2 and may be explained as the remains of commensal animals, exploiting the food opportunities provided by the human inhabitants. The amphibian remains were largely limb bones of frog (*Rana* sp.), which had become incorporated within ditch fill 237 and suggest a moist environment in which the animals may have become trapped.

Rays (Rajidae), flatfish, such as plaice (Pleuronectidae) and herring (Clupeidae) were present in the samples and could have been caught in shallow coastal waters, while eel (*Anguilla Anguilla*) would have been found in the mouth of a river or estuary or close to the shore. Eel, and possibly smelt, were represented by vertebrae only and are examples of estuarine fish. The habitat of the Gadidae (cod family) ranges from close to the shoreline to deep open waters. The smaller members of the family such as whiting (*Merlangius merlangus*) tend to be located in shallow waters, with the smallest fish, measuring only a few centimetres, found close inshore (Wheeler 1978, 153). Therefore, the assemblage may tentatively suggest that fishing was taking place close to shore. It may also be significant that there were few remains belonging to large fish in the assemblage, as it may have been the smaller, younger fish in the shallows that were captured.

Both vertebrae and bones from the head were noted, including some tooth-bearing fragments not identified to taxon. This certainly suggests that the fish were caught and processed locally, as might be expected in a coastal village. Chewed bones constitute direct evidence of consumption and indicate that cess may be a component of some of the archaeological deposits. Colour and texture changes to some bones indicate that they have been exposed to high temperatures. Since no manner of cooking would require such extreme heat, these calcined fragments probably represent material swept into the hearths along with other waste and later redeposited.

Results of the analysis of animal bones from the 2017–18 excavation (Grzybowska 2021) supported those obtained by Browning, above, with sheep/goat the most common species identified, followed by cattle, pig and horse. Evidence of burning was identified on a small proportion of bones and some fully calcined bone fragments were present, suggesting possible redeposition of hearth deposits. A proportion of bones displayed carnivore gnawing marks, providing evidence of a canid/felid on site.

DISCUSSION

By Ken Murphy

Dating

The small pottery assemblage from the deserted settlement indicates occupation from the first half of the twelfth century to at least the fifteenth century, with activity possibly continuing until the late sixteenth century. A pottery sherd from a floor in Building 1 dates from the twelfth to the fourteenth century (possibly later), with a radiocarbon determination from charcoal from a hearth of cal. AD 1437–1523 (74.1% probability) and cal. AD 1575–1625 (21.3% probability) providing a *terminus ante quem* for the building's use. Proto-Ham Green Ware sherds from beneath Building 7 suggest a twelfth-century *terminus post quem* for that structure, with an underlying drain or wall hinting at an earlier structure. Thus, although the life of the settlement can be broadly dated from the first half of the twelfth century through to the fifteenth century and possibly beyond, individual buildings cannot be precisely dated.

Settlement morphology

The surviving remains are of a N/S linear settlement with buildings in a single line, unevenly spaced out along the coast edge over *c.* 300m, with the northernmost building 300m to the south of St Ishmael's church. The settlement's medieval morphology is unknown; several possibilities can be suggested. It is possible that the settlement consisted only of buildings strung along the foreshore in a single line and was never much larger than the surviving remains, or it could have been a longer single line, extending north to the church and further to the south. The surviving remains, however, demonstrate that not all the buildings would have opened directly onto the foreshore: Building 1 had an east-facing doorway, 6 had a west-facing doorway with a possible east-facing window, 7 had a west-facing and a possible east-facing doorway (both blocked) and the doorway in Building 2 could have been east-facing or west-facing depending on how the remains are interpreted. Given this evidence, it is perhaps more likely that the remains were not just of buildings facing the foreshore, but were part of a more complex settlement and what survives may have been the east side of a N/S street, the west side having been removed by coastal erosion, or the west side of a street, with the remains of the east side possibly surviving beneath sand dunes and the railway line. Alternatively, a completely different morphology may have existed consisting of buildings now lost to the sea and possibly surviving under sand dunes.

Building construction, layout and function

A freshly exposed gable end of Building 5/6 standing up to 1.8m high and the east wall of Building 7 confirm that the structures were predominantly stone-built and the remains were not dwarf walls for timber framing or clom (a local term for earth or mud walls). However, there are surviving examples of houses in Carmarthenshire that have stone walls extending up to or above window height with clom above (Wiliam 2010, 103–15) and a similar construction, but some with fully stone gables, cannot be ruled out at St Ishmael, although, having said that, with a clom superstructure one would expect to find wider stone walls than those recorded. This physical evidence for predominantly stone walls is supported by Rhys's 1900 account of forty or fifty cart-loads of stone taken from the buildings. This account may record just one episode of what was regular robbing of stone from the buildings. Of the surviving walls, clay was used as a bonding material, except for the west wall of Building 6 where lime was used. The roofing material is unknown but, as no stone or slate tiles were found during the excavation, thatch was probably used. Floors were a combination of stone slabs and clay/beaten earth.

All the buildings were rectangular, but length and width measurements were only obtained for Buildings 6 and 7. Building 6 was 12m × 4.4m and Building 7 12m × 4.75m. Building 1 was 16.5m long, Building 3 was probably 15.4m long and Building 8 *c.* 4.5m wide. Building 8 was probably aligned E/W; all the others were approximately N/S. The dimensions of Buildings 2, 4 and 5 were not obtained.

Rhys (1900, 75) records rooms and fireplaces; during the current work only Building 1 was recorded with these features. This building had the appearance of a domestic structure, having three bays with a central hearth in the middle room, indicating a single storey structure and conforms to Peter Smith's statement (1988, 14) that all regional houses were single storey until recent times. Smith (*ibid.* 20) also refers to early, but houses with chimneys, having three units — a central hall and two secondary rooms. Although no hearths, apart from the one in Building 1, were identified, the ash layer/floor in Building 7 could be evidence of a central hearth, but without exposing the full plan of the building it is possible to argue that there could have been a chimney in the still buried north wall or in the northern section of the east wall. Unlike Building 1, the apparently single-cell Buildings 6 and 7, with 6 having a central west-facing doorway and 7 opposing east- and west-facing doorways (both blocked), are less obviously domestic. There are, however, two caveats to these two buildings having had a non-domestic function such as warehouses or industrial premises: first, only parts of them were excavated and further investigations may reveal internal divisions and hearths; second, comparable sites are unknown regionally and thus a relatively large, single-cell stone-built structure may have been common, if not normal, for a medieval rural dwelling in south-west Wales. The drain leading out of Building 7 is worth comment; it may have served to drain groundwater out of the building, but it could have served to remove animal waste from a byre located in the south end of the structure.

The pottery assemblage, botanical remains and faunal remains are evidence that the buildings at St Ishmael were essentially domestic structures and that the inhabitants were consuming a range of cereals, fruit and vegetables, meats, including beef, lamb and pork and fish and shellfish.

There are no extant lower status houses of medieval date in the region, peasant houses of the period would have been 'short lived, craftless buildings' (Smith 1988, 20). No excavation on sites with remains similar to those at St Ishmael has taken place, and the few excavations on lower status domestic sites, summarised below, provide little in the way of comparative data. St Ishmael lies on the boundary between an area to the west and north that traditionally used earth or mud (clom) as a building material and that to the east where stone was used (Wiliam 2010, 83–143). In the western area, in the late twelfth/early thirteenth century at Newport in Pembrokeshire (Murphy 1994) settlers in the newly founded town used clom for their houses and at Ty'r Gate, near St Clears in Carmarthenshire, crop processing and other activities were taking place at an eleventh- to fourteenth-century settlement and that the absence of structural remains led the excavator to conclude that centuries of agriculture had erased all traces of clom-built dwellings and other structures that may have once existed (Murphy 2020, 135–6, fig. 8.8). Evidence in the region for low status, stone-built houses contemporary with those at St Ishmael is even rarer than for clom-built examples, with just one, poorly dated example known — three stone-built structures were excavated at Llwynypod, Llandybie, Carmarthenshire, the largest was 12m × 6.5m with an open hearth at the south end and a byre at the north end (Murphy 2020, 132–4, fig. 8.7). The only dating evidence was a single sherd of medieval pottery resting on an external yard surface. Evidence for timber buildings is also rare. A small rectangular structure dating to the second half of the thirteenth century/early fourteenth century and evidenced by wattle walling, stake-holes and small postholes was found beneath the choir of the Franciscan Friary at Carmarthen (James 1997, 110–14). It was burnt down, possible as part of site clearance prior to the construction of the friary. From this very brief review of the evidence, it is clear that archaeological excavation has demonstrated that there was not a single medieval building tradition in the region, with stone, clom and timber all used, although it has to be stressed that the sample is very

small. It would seem, however, that the St Ishmael buildings were of better quality than other excavated examples, indicating that the inhabitants were engaged in activities that provided a greater income than that generated by subsistence agriculture alone.

The economy

The inhabitants of the settlement were engaged in agriculture and fishing, with perhaps some craft activities, as evidenced by the excavated material. Analyses of the faunal remains showed that fish caught were those found in shallow waters, such as estuaries, and that fish were processed and eaten at the site. Cockles and mussels would have been collected on the foreshore. Heather and Terry James (2003) reviewed the physical, cartographic, documentary and oral evidence for the numerous fish weirs (fisheries) in the Towy, Tâf and Gwendraeth estuaries and concluded that the St Ishmael deserted settlement was strongly linked with these fisheries.

Through diligent documentary research coupled with extensive fieldwork James and James (2003) were able to locate many of the fish weirs documented in the medieval period. This summary is based on their published work. Three medieval lordships bordering the estuaries — Laugharne, Llanstephan and Kidwelly — and Whitland Abbey controlled the fish weirs, which provided a valuable income. The first identified written record dates to around 1170–80 when Geoffrey de Marmion, lord of Llanstephan, granted to the Slebech Commandary of the Knights of St John of Jerusalem a boat at the ferry for free transport across the Towy and a fishery in the Tâf, amongst other things (*ibid.* 29). A later document, of 1388–89, records that by then Whitland Abbey had a half share in the ferry (*ibid.* 32). There are numerous references in later medieval documents to weirs under the control of the lordship of Llanstephan on the west side of the Towy estuary, but our main interest is of those recorded on the east side close to the deserted settlement.

Documents for the Duchy of Lancaster's lordship of Kidwelly record weirs on the east side of the estuary, 1283 being the earliest identified record. James and James (*ibid.* 30) argue that large stone-built weirs, like those that can still be seen in the Towy estuary, required considerable capital investment and were constructed in the thirteenth century and earlier by the subjects of the lord of Kidwelly as part of their feudal obligations. The whole of St Ishmael parish lay within the foreignry of the lordship of Kidwelly; land where Welsh customary law and tenure continued after the Norman conquest, and subjects would have been obliged to provide labour services to the lord. However, during the fourteenth century and perhaps earlier, these labour services were commuted to payments. For instance, a 1488–89 account records that the tenants of St Ishmael formerly owed 41 days labour for the carriage of osiers to the 'Weir of Towy' and 84 days for the repair of the weir, but these had been commuted to 20d and 7s respectively. Documents also record leaseholders subletting weirs and of decay, abandonment and the subsequent rebuilding of weirs. The reasons for abandonment were occasionally recorded; sometimes it was due to the lack of a tenant — in 1433–34 no rent was returned for a weir between Salmon Weir and the sea 'for want of a tenant' (*ibid.* 31) — and in 1504 (*ibid.* 30) Broad Weir (see Fig. 2 for location) and another weir had fallen out of use due to shifting sands. By 1609 Broad Weir was again in use.

In addition to a half share in the ferry over the Towy, Whitland Abbey possessed a weir — 'Korred yr Abbot' or 'Monksweir' — a chapel dedicated to St Leonard and 20 acres of land granted to the Abbey in 1270 (Williams 1990, 68). The location of all of these is uncertain, but it is assumed that the ferry across the Towy to Llansteffan was at or near the modern village of Ferryside, its traditional location, 2 kilometres north of St Ishmael's church. James and James (2003, 32) suggested that Whitland Abbey's weir was on St Ishmael's Scar, or a little further north. They further suggested that the quality of the buildings in the deserted settlement must be the work of a temporal or spiritual lord (*ibid.* 37). They associated the

settlement with Whitland Abbey, with the inhabitants servicing the abbot's fish weir. However, apart from the chapel, 20 acres of land, the half share of the ferry and the weir no other Whitland Abbey holdings are recorded at St Ishmael (Williams 1990, 68); it is therefore more likely that settlement was a possession of the lord of Kidwelly.

By the late fifteenth/early sixteenth century no income, or a very small sum, was recorded for many weirs and some were described as being 'utterly destroyed and decayed'. James and James (2003, 37) concluded that most had become ruinous. Principally they ascribed this to coastal change, but they considered that economic factors also played a part.

The botanical remains and faunal remains other than fish show a mixed economy, not just one based on servicing the fish weirs. Oats wheat and barley were consumed along with peas and beans. The presence of weed seeds and chaff indicates unprocessed or partially processed grain was being brought to the settlement, pointing to a farming community, not solely a food consuming community. Hazelnuts and apples also formed an element of the diet. Sheep/goat, cattle and pig were consumed on the site, presumably having been raised nearby. Scrubby woodland and peat, possibly from the foreshore, were exploited for domestic fuel and flax/hemp seeds from the floors of Building 7 could be evidence for textile or rope manufacture.

Coastal trade is evidenced by pottery from Somerset, Wiltshire, Devon, Cornwall and France. Although the deserted settlement lies in an estuary, it is still in a relatively exposed position in comparison with Carmarthen, Kidwelly, Laugharne and St Clears, all medieval ports, and it is therefore unlikely that it acted as an entrepôt for these towns and their hinterlands. However, it is possible to envisage boats sheltering in the Towy estuary whilst they waited for a high tide to take them the 12 kilometres upstream to Carmarthen. One such place to shelter may have been between Salmon Scar and St Ishmael's Scar (Fig. 2), immediately in front of the deserted settlement. Wharfs and jetties may have run out from the settlement to allow boats to be serviced whilst they waited, and it is conceivable that some of the buildings acted as storehouses as well having a domestic function.

Abandonment

It has been suggested (Anon 1900, 24) that the settlement may have been abandoned because of the great storm of 1606–07 which is known to have had a widespread impact upon the coast of South Wales (Horburgh and Horrit 2006; Skellern *et al.* 2007). Meek (2015, 106) interpreted the ceramics as evidence that abandonment may have occurred at an earlier date than 1606–07; this is supported by James and James (2003) analysis of the documentary evidence showing fish weirs being abandoned by the late fifteenth/early sixteenth century. Certainly, one would expect to find debris in and around the buildings if abandonment had been caused by a single storm event, but the excavation showed that the floors of the buildings were directly overlain by wind-blown sand, pointing to besandment as the main cause of abandonment.

The deserted settlement at St Ishmael seems likely, therefore, to have been the victim of coastal change taking place in the late medieval period along the coast of South Wales and elsewhere around Britain (Brown 2015). James (1991, fig. 2) and James and James (2003, figs 2 and 3) have described the substantial changes wrought to the Carmarthen Bay coast since the medieval period. The Towy, Tâf and Gwendraeth estuaries were formerly much more exposed, but over several centuries sand dunes, salt marsh and estuarine sand banks and bars have developed creating a more sheltered, but nevertheless still exposed environment. Further east along the South Wales coast extensive documentary evidence from the fourteenth century onwards records the impact of encroaching sand on the small borough of Kenfig (Griffiths 1971, 354), leading to it being abandoned in the fifteenth/sixteenth century (Wessex Archaeology 2012, 24).

Higgins (1933) described sand incursions at numerous locations on the South Wales coast. Since his pioneering work archaeological excavation has revealed a very complex picture of sand accumulation and erosion over several millennia. For instance, at Stackpole Warren, Pembrokeshire, from *c.* 1000 BC sand built up around a Bronze Age standing stone covering and preserving earlier archaeological remains (Benson *et al.* 1990), whilst a few kilometres away at Brownslade, sand did not begin to accumulate until the late Iron Age and had stabilised by the time an early medieval cemetery was established around *c.* AD 500 (Groom *et al.* 2011). A more complex picture emerged at St Patrick's Chapel, also in Pembrokeshire, where sand continued to accumulate gradually during the use of a cemetery founded in the eighth century AD, covering burials and eventually the remains of a twelfth-century stone chapel (Murphy *et al.* 2016). Sand continues to be blown onto this site at the same time as sea removes its exposed, beach-edge face. On occasions sand movements can rapidly cover land and buildings, as famously happened when the royal palace at Rhosyr, Anglesey, was buried during a sandstorm in AD 1322 (Jones 2002, 10).

Whilst it is conceivable that St Ishmael settlement was abandoned due a single catastrophic sandstorm similar to the one documented at Rhosyr, a more likely scenario is one of episodic but nevertheless relentless sand incursion coupled with coastal change resulting in the estuarine fish weirs being unable to function and dwellings becoming uninhabitable. One can imagine slow decline as the inhabitants left, unable to maintain their increasingly sand-engulfed houses, leading to insufficient labour to maintain the fish weirs, resulting in a spiral of decay, decline and abandonment. Post-abandonment the buildings were quarried for stone. There is one documented account of this, in 1896, but this may have been a common activity as shifting sands revealed the long abandoned buildings.

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NOTES

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6. Worcestershire Archaeology, Worcestershire Archive & Archaeology Service, The Hive, Sawmill Walk, The Butts, Worcester WR1 3PD.
7. Formerly headmaster at Monkton House School, Cardiff and vicar in Cwmbran and vicar of St John's Maindee, Newport.

8. St Ishmael deserted medieval settlement is recorded under record number 15229 on the National Monuments Record.
9. British Geological Survey, Geology of Britain Viewer, available at <<https://www.bgs.ac.uk/map-viewers/geology-of-britain-viewer/>>, accessed 11.05.2022.
10. OxCal 4.4, available at <<https://c14.arch.ox.ac.uk/oxcal/OxCal.html>>, accessed 30.05.2022.

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- *Cover image:* Llwyn Celyn, Cwmyoy, Monmouthshire: a hall-house of 1420, barely changed since the hall was floored over in *c.* 1690, and restored by the Landmark Trust. *Photograph:* Dafydd Wiliam.