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Archaeological investigations at Godrevy, Gwithian 2019: implications from geophysical survey and auger coring

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In 2019 Cornwall Archaeological Unit was commissioned by the National Trust to organise geophysical and auger surveys at Godrevy, in west Cornwall. The surveys produced a significant and complementary set of results which have shed light on the occupation of the headland prior to the current farm and field system, which is itself of medieval origin. The geophysical survey of approximately 25 hectares within the fields around the farmhouse revealed that the area had been enclosed by at least one earlier north–south aligned field system, which appeared to be coaxial in nature. Auger coring was predominantly undertaken to the south of the farmhouse in the fields and dunes. Little in the way of environmental evidence was found within the fields; however, the results from the towans were significant as they suggested that, by contrast with previous coring sampling, the dunes in this area had formed since the medieval period.

As part of the assessment stage, three radiocarbon determinations were obtained on snail shells from an existing core. These produced two dates which fell in the Early to Middle Iron Age and a third in the medieval period, adding further detail to the existing dated sequence of sand blows. The determinations cannot be directly related to the field system detected by the geophysical survey but they are associated with significant changes to the landscape.

In July 2019 Cornwall Archaeological Unit was commissioned by the National Trust to organise a programme of archaeological recording at Godrevy Farm, Gwithian (centred at SW 58555 42885) in advance of a possible realignment of the coast road and relocation of car parking spaces. The recording was undertaken to assess the archaeological potential of the area and was largely non-invasive. It comprised building recording of the historic farm complex (Motley and Thomas 2020), geophysical survey of the fields surrounding the farm buildings to identify buried archaeological features (Davies 2019) and auger coring (Allen 2020) to recover evidence of buried soils and deposits, especially to the south where dune formation had the potential to seal very significant palaeoenvironmental and geoarchaeological remains (Fig 1).

This short paper describes the results from the geophysical survey, which identified an extensive field system, the assessment of the coring samples, and radiocarbon dating of shell samples, which have produced a significant and complementary set of results.

Location and background

Godrevy Farm is located on a north-coast headland in western Cornwall, approximately 5.5 km to the north west of Camborne (Fig 1). The underlying geology is composed of the Mylor slate formations. The current farming settlement is of medieval origin, first recorded in 1297 (Padel 1988, 88). On its north-west side the farm is sheltered by a low north–south ridge, beyond which is the more exposed Godrevy Point (Fig 2). In the fields around the farmhouse, the soils are fertile and were in cultivation at the time of the surveys. Further to the south, the land becomes sandier and as the ground slopes to the west and south there are large dunes, Godrevy Towans, which reach several metres in height. The eastern edge of the survey area is marked by a steep slope up to slightly more elevated ground.

The sandy, calcareous quality of the soils and the surrounding dunes means that it is one of the most important areas in Cornwall for the survival of palaeoenvironmental remains, including snails, animal bone and potential evidence for past manuring (for example, Walker 2018; Straker and Walker 2018; Dev 2018). This range of organic remains does not normally survive the acidic conditions which prevail inland beyond the dunes and across most of the rest of the county, and are therefore of huge significance.

In addition to the excellent preservation of palaeoenvironmental material, the Gwithian area is exceptionally rich in archaeological sites, ranging from dense concentrations of Mesolithic artefact scatters (Roberts 1987; Thomas 2005; Jones *et al* 2018; 2019) to major Bronze Age, post-Roman and early medieval settlement sites (for example, Thomas 1958; Fowler 1962; Nowakowski *et al* 2007). In particular, highly significant evidence for prehistoric to earlier medieval enclosure and traces of cultivation have been revealed beneath the sands, which have included spade and ard marks as well as ploughsoils and lynchets (Fowler and Thomas 1962; Megaw 1976; Nowakowski *et al* 2007).

There are a number of important sites in the immediate vicinity of the project area which may be relevant to the current study (Fig 2). On higher ground immediately to the south east is Crane Godrevy, a Romano-British 'round' reused as a medieval and post-medieval settlement, excavated in the 1950s and 1960s (Thomas 1969). On the low cliff 175m south west of Godrevy Farm there is a small Roman-period settlement site excavated in 1956–1962, known as Porth Godrevy (Fowler 1962); this may be associated with a few small fields identified on Godrevy headland (Fowler 1962, 21; Thomas 1964, 43–4, fig 14). Immediately south east of the Porth Godrevy site, Fowler refers to 'ruinous 17th–18th century farm remains, predecessors of the present Godrevy Farm' (Fowler 1962, 19); Nigel Thomas includes a sketch of this site in his assessment of the area (1995, fig 10) but there has been no further work on it, and its date and character are uncertain.

The whole of the headland north west of Godrevy Farm was recorded in a detailed measured survey in 2002–3 (Craze 2003). Among other things, this included a medieval field system of about 5.5 ha on Godrevy Green, consisting of a number of fields defined by banks and lynchets, some of them quite substantial, suggesting prolonged cultivation. Groups of strips within the fields, marked by very low banks, are a good indication that the fields were farmed by a hamlet rather than by a single farmstead, although it is uncertain whether this settlement was on the same site as the present Godrevy Farm or elsewhere (such as the clifftop site next to Porth Godrevy). Part of this area was enclosed again in the nineteenth century, the walls and Cornish hedges sometimes cutting across the earlier boundaries and in other cases reusing them (Craze 2003).

The current field pattern in the project area is associated with Godrevy Farm, an eighteenth- to nineteenth-century farmstead. The fields are largely unchanged since the 1840 tithe map and although post-medieval in its current form, the layout is likely to be medieval in origin, resulting from the enclosure of former strip fields (as seen to the north west of Godrevy Farm). It has been suggested that these may have formed very long north–south strips (Fowler and Thomas 1962, 81–2, fig 21; Thomas 1995, 71, fig 10), but perhaps it is more likely that much shorter north–south strips were contained within a series of east–west 'cropping units' formed respectively by Areas 1 to 3, Areas 6–7, Areas 11–12, and Areas 8–10 (Fig 3).

Other than these elements, the archaeological potential of the project area was essentially unknown, and it fell outside the parts of the Gwithian–Godrevy landscape which had been investigated by Charles Thomas's campaigns of fieldwork throughout the 1950s and 1960s.

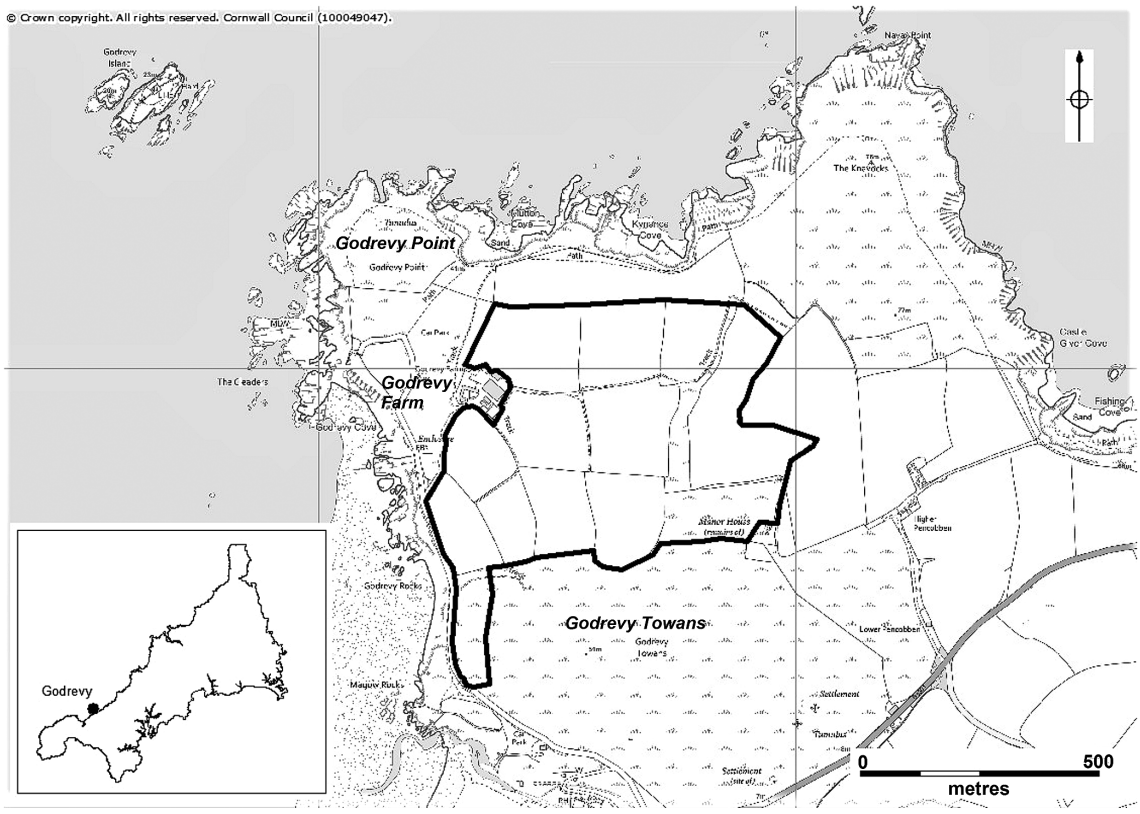

Fig 1 Location of the Godrevy geophysical survey and auger coring project.

Inspection of recent lidar data and aerial photographic mapping undertaken by the National Mapping Project revealed that, by contrast with adjacent areas of the Godrevy headland (especially to the east and west), there was a distinct paucity of archaeological features, and cultivation across most of the project area since the 1950s may well have reduced any earthworks to the point where they were no longer visible on the ground. In particular, study of the lidar data revealed areas of deep, closely set parallel furrows in several of the fields, consistent with modern deep ploughing. This meant that the combination of geophysical survey and auger coring provided the best opportunity to investigate an important part of the Gwithian landscape.

The archaeological investigations

Geophysical survey

A magnetometer survey of approximately 25 ha was undertaken in the ploughed fields around Godrevy Farm (Davies 2019). The survey identified a large number of anomalies, which very probably relate to pre-medieval episodes of settlement and enclosure (Fig 3).

A few features relate to the present field layout. Areas 1 and 6 both have evidence for removed double-ditched boundaries running north–south. A ditched feature running west-south-west to east-north-east through Areas 9 and 10 appears not to extend beyond Area 10, suggesting perhaps that the area covered by Areas 8, 9 and 10 had previously been divided into two rather than three fields. The survey also shows two lines of strong magnetic disturbance which are thought to be service

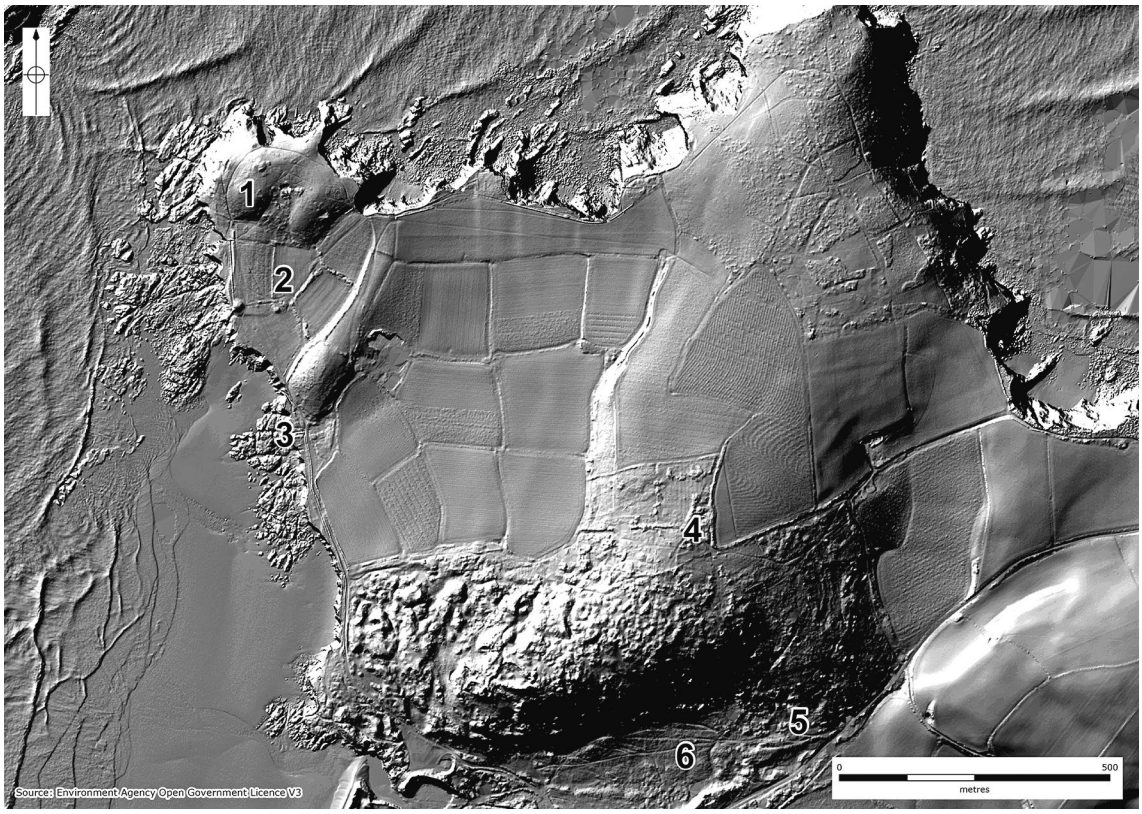

*Fig 2 Lidar showing the Godrevy area. (**1**: Godrevy Point, Bronze Age barrow. **2**: Godrevy Green, medieval strip fields and enclosures. **3**: Porth Godrevy, Roman-period settlement. **4**: Crane Godrevy, round and medieval settlement. **5**: Gwithian, Bronze Age settlement. **6**: Gwithian, early medieval settlement.)*

trenches running to Godrevy Farm (one east–west, the other south–north).

The majority of anomalies are linear ditched features associated with a field system underlying, and on a different axis from, the current field system, which has largely remained unchanged since the 1840 tithe map and is itself of medieval origin. These appear to be mostly part of a single field system with a predominantly north-north-east to south-south-west alignment. However, the field system is not uniform in character across its extent. Strip-like fields, 30–50m wide, are prominent across the central area; an east–west boundary may divide these into shorter bundles. South west of these there are traces of simpler, rectangular fields, although they have a similar alignment to the strip-like fields. A boundary running through Areas 6 and 12 roughly parallel to the alignment of the fields to the west has a number of east–west ditches attached to its east side; this boundary can also be seen on the lidar survey, suggesting that it survives as a slight earthwork. It appears to end on the southern side of a group of more irregular enclosures to the north east (Areas 2 and 3); a prominent north–south feature on the east side of Area 3 can similarly also be seen on the lidar survey (Fig 2). Also in the northern part of the field system, there appear to be well-defined east–west fields across Area 1, but the survey report suggests that these anomalies may instead be caused by geological features such as localised variations in the underlying superficial deposits or possible striations in the slate and siltstone bedrock (Davies 2019). Interpretation of the lidar data suggests

Fig 3 Geophysical survey results, showing the field system which pre-dates the present-day layout. (Source: Davies 2019.)

the field system may extend further to the north, beyond the project area (Fiona Fleming, pers comm), although alternatively this may reflect medieval or later enclosure of the coastal strip. There is also an indication of time depth, as some of the linear anomalies seem to fit into neither the current field system, nor within the overall pattern of the fields identified by the geophysical survey.

Beyond the fact that they are earlier than the current field system, the geophysical survey could not demonstrate the age of the linear features. As the field system has a single predominant axis, it may be related to coaxial field systems which in the south-west region have been dated to the middle centuries of the second millennium cal BC (for example, Fleming 1988; Vervust *et al* 2020), although it is equally possible that they could date to any time from the earlier Bronze Age to the Roman period (below). Alternatively, the strip-like character of some of the fields suggests the possibility of a medieval date.

In addition to the field system, the geophysical survey identified a number of anomalies in the northern part of the survey (Areas 1, 2 and 3), where features circular or sub-oval in plan and approximately 5m–6m in diameter, were detected. These are of potential archaeological interest and may represent shallow backfilled pits. Some may be associated with the field system and it is possible that some of the larger sub-circular anomalies could represent hollow-set Middle Bronze Age roundhouses, which have been found to be associated with this kind of signature (for example, Jones 1998–9; Gossip 2013). It is, however, equally feasible that they are of natural origin (Davies 2019). In the south-east corner of Area 2 there is a possible ring-ditch that may be associated with a structure which may itself be related to the field system. At the southern end of Area 12 there appear to be a small rectangular enclosure and curving boundaries suggestive of a focus of settlement to the south of the survey area.

Geoarchaeological and palaeoenvironmental overview

The sand dunes at Gwithian–Godrevy are a well-known and well-studied archaeological resource,

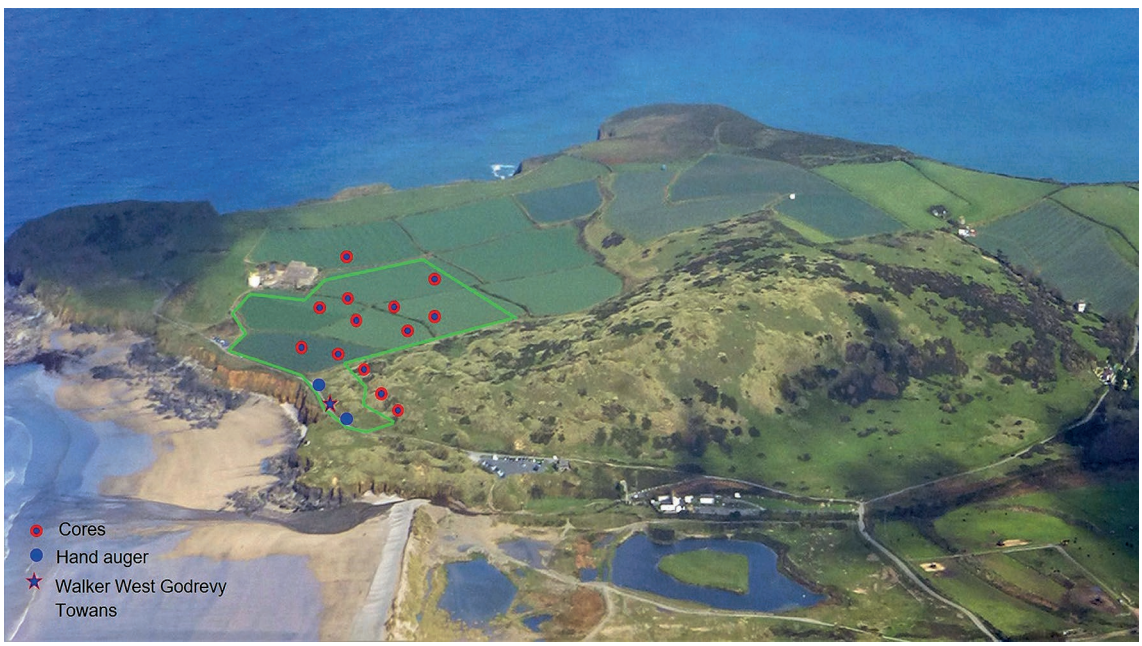

Fig 4 Aerial photograph of Godrevy Point and Towans showing the study area and approximate location of the auger points. (Photograph by kind permission of T Walker, modified from Walker 2018, fig 5: © Walker 2018.)

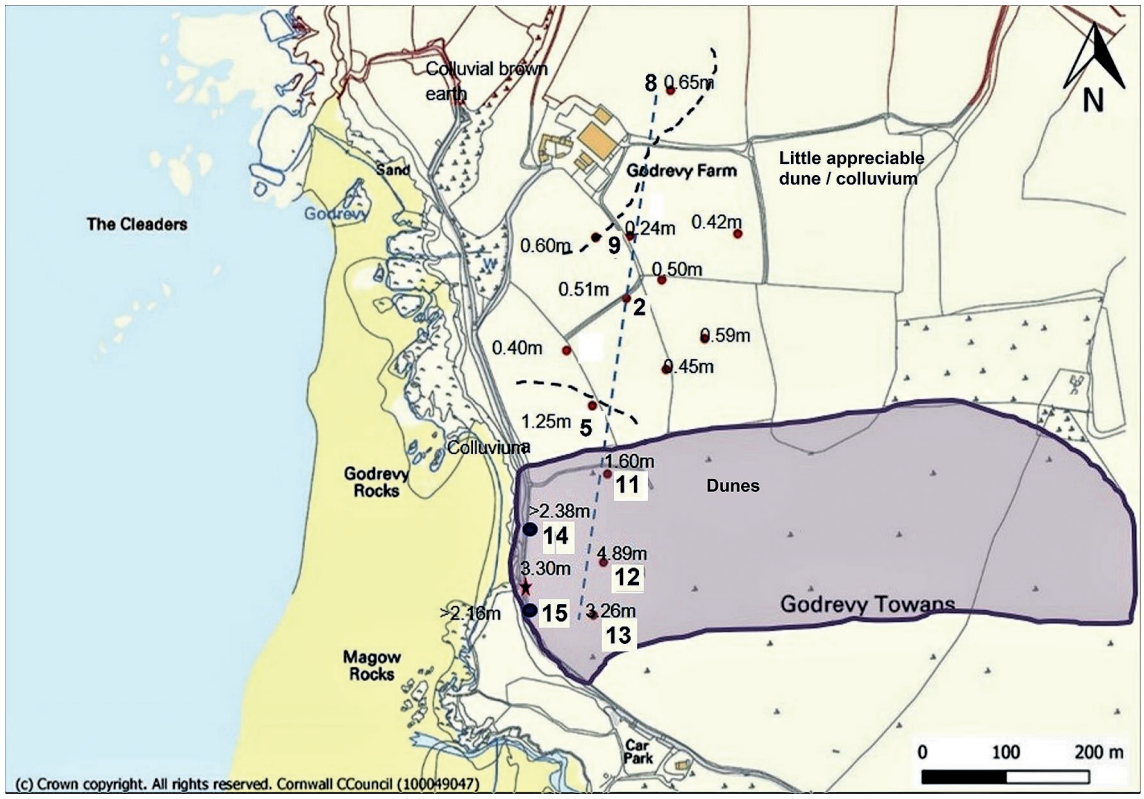

Fig 5 Location of the mechanical cores (red dots) and approximate location of the hand augers (blue dots) and Walker's West Godrevy Towans study (star). The area of Godrevy Towans is shaded.

with remains from the Late Neolithic to the later medieval period variously encapsulated within them, much of which was studied and reported upon by the late Charles Thomas (papers in Jones and Quinnell 2018). However, the farmland of Godrevy Farm had seen little previous examination.

A series of 13 power-driven mechanical cores and two hand auger points were bored from the high land around Godrevy Farm in the north across the dunes to the south-western edge of Godrevy Towans (Figs 4 and 5). The boreholes would enable the mapping of the extent of any obvious dune beyond the towans, define any colluvial deposits and characterise the geoarchaeological potential between Godrevy Farm and the dunes. Machine coring and recovery of large diameter cores also provided the opportunity to obtain material for palaeoenvironmental enquiry and samples for radiocarbon dating (Allen 2020). This work also sought to shed light on any land use change between the underlying prehistoric field system and the superimposed medieval field system.

Most of the coring was done using a tracked terrier percussion rig (Fig 6), which enabled the recovery of sediment cores to 5.9m depth, supplemented by hand coring to 2.5m. The 15 recorded profiles have enabled the deposits to be identified, modelled and profiled. Off the dunes, the soils and sediments in the fields of Godrevy Farm were surprisingly sand free, especially in view of the proximity to the towans. Behind Godrevy Point the topography of Godrevy Farm was high ground with gently undulating cliffs to the west with the land falling away to the south. Generally, only shallow rendzina soils and brown earths (about 0.2–0.4m thick) were present; however, north east of Godrevy Farm (core 8) a shallow colluvium (a colluvial brown earth) only 0.65m thick existed and at the location cored there was a hint of possible buried soil. Deeper and localised colluvium was

Fig 6 The percussion coring rig at T1/1 (Photograph: © M J Allen 2019).

also present on the north-western end of the towans ridge (for example, core 5; Figs 5 and 7). Both of these locations are relatively discrete areas and both foot-slope locations where buried archaeology may occur, which may not be reflected in any surface morphology or surface artefacts. The brown earths and colluvium were almost sand free.

The dunes of the towans tower above the landscape to north and south and are in excess of 9m thick, burying archaeology from the Neolithic to medieval periods and including stacked stratified sequences of up to six separate clear stabilisation horizons (for example, Thomas 1958; Walker 2018) and buried settlement, occupation and fields. The sands have been shown to contain an important 4500 years-long stratified palaeoenvironmental (land snail) record (Walker 2018). Coring in the interior of the towans was undertaken in a gap between two high upstanding dunes, where up to 5.6m of stratified sand was cored (cores 11, 12 and 13). These were almost devoid of any visibly recognisable stasis horizons, stabilisations, or buried soils, whereas those on the western end of the dune (cores 14 and 15) recorded several stabilisation horizons and essentially replicated sequences studied previously by Walker (2017; 2018). Notably, the dune sand is known to exist south of the towans in the Red River valley, but this survey clearly showed that it does not extend to the north.

Palaeoenvironmental and dating evidence

The opportunity was taken to sample selected cores from the interior of the dunes for palaeoenvironmental data, and this included testing for pollen but also looking at land snails; these have been studied previously from numerous locations by at least four previous analysts. Pollen had rarely previously been examined from these deposits and is not always readily preserved in sandy contexts. Larger than normal samples were processed by the analyst but despite this, pollen numbers were low, preservation poor, and little could be inferred. Land snails, on the other hand, are known to be well-preserved in the towans and in places there are extraordinarily high numbers of shells. Important sequences have been published from the dunes since 1975 (for example, Spencer 1975; Milles 1991; Davies 2006; Walker 2018). Only one of our cores (core 12) contained a possible weak stasis or buried surface at 3.5m and at 4.3m depth, but land snail preservation through this was, disappointingly, only poor to moderate. Although land snails principally provide information about the environment and vegetation structure, some have chronological implications, based on their arrival in Britain. Fragments of several of these species were found throughout the 4.85m of sequence assessed in core 12. One was a Roman-period introduction – the 'Roman' snail (*Cornu (Helix) asperum*) – suggesting our sequence

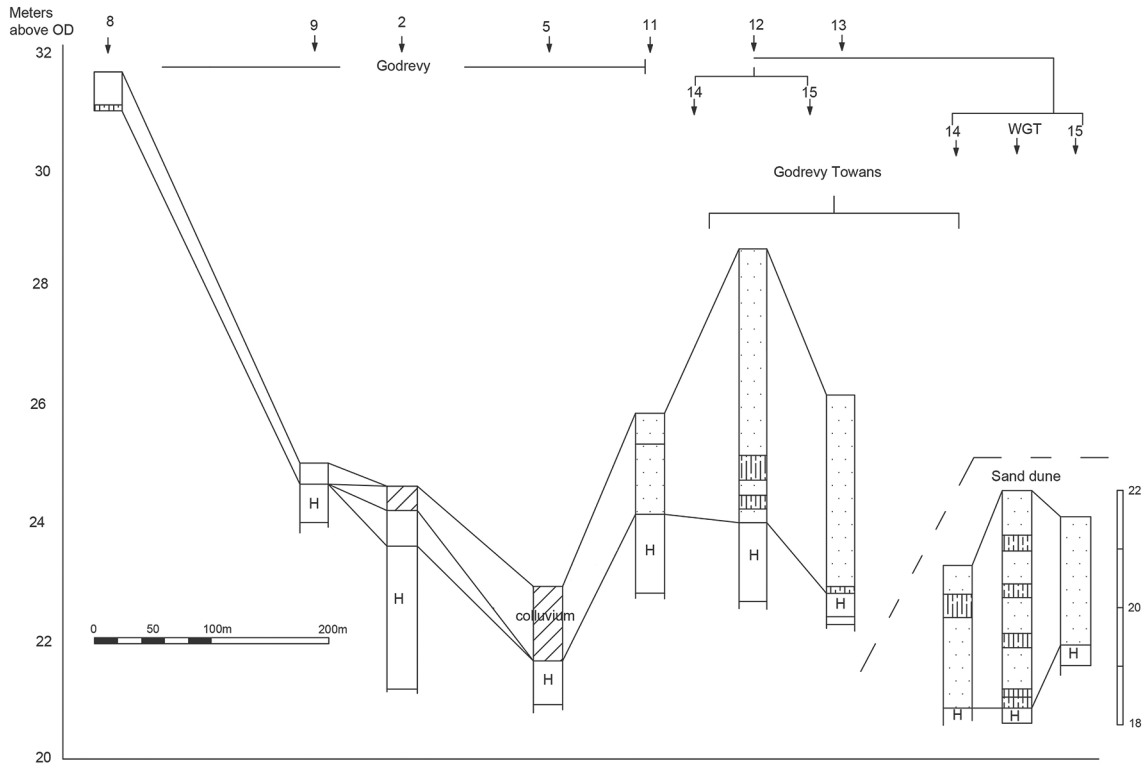

Fig 7 North–south profile from Godrevy Farm to Godrevy Towans. H = head.

as probably post-Roman; however the others, occurring consistently and in relatively moderate numbers, were medieval introductions (*Cernuella virgata* and *Candidula* spp.). On this basis it looks like the entire 5m sequence in this part of the dune is medieval or later in date. Detailed costly analysis would add little to what we already know, especially as a lack of archaeological finds and organic material meant that more detailed dating of the sequence would be a challenge. Although this work did not provide new palaeoenvironmental data, it did indicate the spatial variability and complexity of the dune system.

Failing to provide good new long palaeoenvironmental sequences, we turned to increasing the chronological resolution of Dr Tom Walker's sequence at West Godrevy Towans (shown as WGT on Fig 7 and indicated by a star on Fig 5). Radiocarbon dating on the long spiral land snail shells *Cochlicella acuta* found in the upper part of his sequences added three new late prehistoric Iron Age to medieval dates (below) on a shell historically thought to be a medieval introduction to Britain, but proved by Tom Walker (2018) to have been around since at least the Neolithic period (below).

Radiocarbon dating

Three new radiocarbon determinations were obtained on long spiral land snail shells *Cochlicella acuta*, which were extracted from Tom Walker's West Godrevy Towans sequence of 31 contiguous samples covering 3.5m, which was already accompanied by five radiocarbon dates (Table 1). The new dates were taken from the upper part of the sequence. In order to attempt to examine chronology of clear fluctuations in the mollusc palaeo-fauna (*C. acuta*), shells of *C. acuta* were provided by Tom Walker from the peaks in the stabilisation at 68–75cm and in the blown sand at 110–123cm. Additionally, there was a millennium of blown sand between 255 and 190cm with increases in *H. itala, C. acuta and P.*

Table 1 Radiocarbon dates from West Godrevy Towans (new dates, this project, in bold).

Depth (cm)	*Stratigraphy/ environment*	*Material*	*Calibrated results*	*Result BP*	δC^{13}	*Lab number*
68–75	**Stabilisation *C. acuta* peak**	***C. acuta* shell**	**cal AD 1130–1160**	**933±26**	**–7.0**	**SUERC-93891**
110–123	**Blown sand *C. acuta* peak**	***C. acuta* shell**	**480–360 cal BC**	**2331±26**	**–7.6**	**SUERC-93892**
170–180	Stabilisation *C. acuta* peak	*C. acuta* shell	cal AD 90–230	1833±26		OxA-28969
210–223	**Blown sand**	***C. acuta* shell**	**490-370 cal BC**	**2346±26**	**–7.1**	**SUERC-93893**
225–265	Stabilisation *C. acuta* peak	*C. acuta* shell	910-810 cal BC	2718±27		OxA-28968
288–300	Stabilisation *C. acuta* peak	*C. acuta* shell	1500–1420 cal BC	3957±27		OxA-28967
310–332	Neolithic ols	*C. acuta* shell	2570–2350 cal BC	3957±27		OxA-28966
332	Neolithic ols	*Prunus* charcoal	2570–2310 cal BC	3590±40		Beta-280906

muscorum from 223cm. This point was also dated via a specimen of *C. actuta* provided by Dr Walker.

It was hoped that the increased chronological resolution would, combined with re-examination of the palaeo-fauna, enable us to tease out subtle but vitally significant changes in the land use record. The results of the three new radiocarbon assays are given in Table 1. The radiocarbon dating probability distributions have been calculated using OxCal (v4.3).

Consideration of the new radiocarbon results

The results from the stabilisation at 68–75cm (933 ±26 BP, cal AD 1130–1160; SUERC-93891) and the lower sample from the blown sand at 210–226cm (2346 ±26 BP, 490–370 cal BC; SUERC-93893), fit well with the stratigraphic location of the dates obtained previously. These date a notable change in the mollusc fauna (and numbers) within the blown sand phase during the Early to Middle Iron Age and again during a phase of local dune stabilisation in the medieval period. These two results may date important changes not just in shell numbers but also possibly in the local and wider palaeoenvironment, land use and fieldscapes. However, when the molluscs are examined using relative abundance (that is to say, proportional representation) rather than absolute numbers, these horizons seem palaeoecologically less significant.

The radiocarbon date within the blown sand at 110–123cm of 2331 ±26 BP, 480–360 cal BC (SUERC-93892) is clearly anomalous and much too early to fit the existing dated sequence. Although this could indicate a single intrusive shell (or shells), it is more probable that some, or all, of the blown sand from 83cm to 160cm was reworked and represents aeolian deflation of pre-existing dunes formed in the Iron Age. Tom Walker comments that this may also account for the very high number of molluscs within the blown sand, but with no evidence of buried soil at this level.

Discussion

A major aim of the Godrevy survey project was to better characterise the buried archaeological potential through a combination of geophysical survey and coring. The results from these two mostly non-invasive techniques have revealed a previously unknown buried landscape of fields and have shed further light on past human impacts upon it.

Although exceptionally well-preserved field systems and evidence for agricultural practices and settlements of Bronze Age date have long been known in the wider Gwithian area (Thomas 1958; Nowakowski *et al* 2007), past excavations have only given a small window into the character and layout of these early fields. By contrast, the geophysical survey has made a major contribution to studies in the Gwithian–Godrevy area by, for the first time, revealing the much more extensive early field system which covered most of the project area.

The field system clearly pre-dates the upstanding field pattern which is of medieval derivation, but typological layout alone was not enough to be confident of its origin. The strip-like character of parts of the field system could point to a medieval date. The widths of the strips would be within what can be expected for Cornish medieval strip fields (for example, Johnson and Rose 1994, 106–11; Herring 2006a; 2006b), and the geophysical survey

identified some possible ridge and furrow in the eastern part of Area 12 (Davies 2019, fig 4). If the underlying fields are at least partly medieval and the overlying fields are also medieval (in origin), then this would be very interesting, suggesting two separate phases of medieval fields with different layouts. A major disruption and reorganisation of this sort would perhaps not be out of the question in this landscape, although it may be noted that the coring did not find evidence for an episode of sand blow affecting these fields.

However, given that the fields do not appear to be related to the current system and were not on the tithe map it seems most probable that they are pre-medieval and are likely to be multi-phased. Those in the southern part of the survey area (Areas 6, 7 8, 9, 10, 11, 12 and 13) share an axis and can be considered to be coaxial, a term widely adopted to describe systems where a cardinal alignment structures the field layout (Johnston 2013, 314). That is to say, they are characterised by uniformly conjoined, rectangular, field plots following a dominant axis. It is of course true that coaxial and axial field systems in the south-west region and elsewhere in southern Britain have been dated to the middle centuries of the second millennium cal BC, the Middle to later Bronze Age (Pryor 2001, 408–13; Yates 2007; Bradley 2007, 196; Vervust *et al* 2020), with the most famous example of coaxial fields being the extensive 'reaves' found on Dartmoor (Fleming 1988), as can be seen around Corndon Tor, where 'strip-like' reaves are found (Newman 2011, fig 3.15). However, even on Dartmoor, precise dating for the origins and use of coaxial fields is lacking (Johnston 2020, 314–23). In Cornwall coaxial fields are less common than other forms of prehistoric field system but have been identified on, for example, East Moor, Altarnun (Brisbane and Clews 1979; Johnson and Rose 1994, 62–5). However, the chronologies of most Cornish field systems are relative and imprecise, and the only direct dating is from the coaxial field system at Bosigran, Zennor, in West Penwith, which has been dated by Optically Stimulated Luminescence (OSL) to 1690 ±180 cal BC (CERSA 285) with a *terminus ante quem* of 1120 ±230 cal BC (CERSA 286) (Vervust *et al* 2020).

Elsewhere in Britain, however, some coaxial field systems have been found to post-date the Middle Bronze Age (for example, Higham 1986, 204; Williamson 1987). In Cornwall, excavated ditched field boundaries, as opposed to stone walls, are more typically found to be of Iron Age or Roman date (for example, Johns 2008; Jones 2019, chapter 12). The excavations of the Bronze Age settlement at Gwithian also revealed banks, walls and fences as opposed to ditches (Thomas 1978; Nowakowski *et al* 2007). Given that pre-Norman adjacent settlements at Gwithian and Godrevy have been found to be very wide ranging in date (Fowler 1962; Nowakowski *et al* 2007) and the potential for some anomalies within the field system to be Bronze Age roundhouses or later structures, it is possible that the newly identified fields at Godrevy could date to anywhere from the earlier Bronze Age to the Roman period. Only excavation and targeted sampling of the ditches will enable material to be securely dated or material recovered suitable for OSL dating (*cf* Vervust *et al* 2020).

Returning to an original aim of looking for differences in land use between coaxial and post-Roman – medieval field systems, was there anything we could tease out from examining either our data, or by re-examining published data with this in mind, and with the new radiocarbon dating? Land snails have potential for defining differences between broken soil, arable land and short grazed, trampled and longer grassland, which might indicate different farming practices used in the respective field systems. However, differentiating between arable, pasture and short-sward grassland is notoriously difficult, and whether this is actually possible is debatable. Nevertheless, previous palaeoenvironmental research has never attempted to address this. Although any palaeoenvironmental interrogation of the land snail data, and of the windblown sand facies has yet to be done, preliminary examination in assessment does suggest that there are subtle but potentially significant changes in the open country molluscan assemblages between the Iron Age and Roman – earlier medieval periods which might relate to changing farming regimes, and provide a more nuanced land use history for the later prehistoric and medieval Godrevy–Gwithian landscape and be a new chapter in understanding its fascinating archaeological history.

In conclusion, a Bronze Age origin for the underlying field system may therefore be suspected; however, given that it could alternatively be Iron Age or even possibly medieval in date, this could not be proven without targeted investigation and dating of the boundary ditches. Although

not directly linked with the geophysical survey results, the three new radiocarbon determinations reveal impacts in the landscape in the Iron Age and medieval periods, and detailed analysis of the land snail assemblage might reveal much more detail of changing land use over time.

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The corresponding author is Andy M Jones.

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