

6. DISCUSSION

6.1 The Calanais Fields in their local context

Very little is understood about the organisation and practice of agriculture during the later prehistoric period in the Hebrides. Evidence of prehistoric agricultural landscapes and for farming techniques is ephemeral and, arguably, ambiguous. The results of the Calanais Fields Project are therefore of some importance. The excavations are also significant in demonstrating that substantial and well-preserved prehistoric features can survive, unseen, beneath blanket peat, indicating that archaeological research in such areas, although superficially appearing to be uninviting, does in fact have the potential to reveal aspects of the islands' prehistory which are missing at the more visible monuments and, so far, in the more intensively explored machair.

The Calanais Fields Project has identified a fragment of what is in all likelihood a more extensive buried prehistoric agricultural landscape preserved beneath peat, and features found include structures, walls, clearance heaps and clearance cairns.

The excavation was concentrated upon Trench 15, where significant archaeological features were uncovered, in particular a sub-rectangular structure associated with a field wall and an area of cobbling. Several phases of activity were identified, including modifications to this building. The activities undertaken here appear to be associated with farming, as indicated by the environmental evidence and the lack of domestic features and artefacts. The presence of vestigial remains of cultivation furrows demonstrates the practice of arable agriculture, and this is supported by the presence of cereals in the pollen diagrams. Additionally, the field wall and cobbled surface indicate the division of land for different purposes, which may include the stocking of animals; high phosphate concentrations to the west of Feature 15004 support this idea. Similarly, the appearance of *Plantago lanceolata* (ribwort plantain), *Rumex* (docks) and *Trifolium* (clover) are indicators of pastoral activity. This reflects stock-keeping in the locality, as soil pollen is assumed to predominantly derive from very local sources (Andersen 1986) and high phosphate concentrations to the west of Wall 15004 support this idea. This pastoral activity is thought to be more widespread

across the Calanais area due to similarities with other local pollen diagrams (eg Tob nan Leobag, Bohncke 1988).

The primary layer of cobbles within peat at the west end of the trench appears to correspond archaeologically to the beginning of peat growth in this area. This episode is also evident in the pollen records, where the boundary between the palaeosol and early blanket peat, dated to 390–170 cal BC (OxA-10091), correlates well with pollen zone PAZ-2b. A rapid rise in pasture and open ground species along with cereal-type pollen and associated weed species mark the early indicators of agricultural activity mirrored in Phase 2 of Trench 15 and pollen zone CaN-3c at Tob nan Leobag (Bohncke 1988: 456). Blanket peat initiation is correlated, with bog and heath species becoming more prominent (a peak in *Sphagnum* and rise in *Calluna vulgaris*), indicating wetter and more waterlogged conditions. A decline in cereals however, is not evident and farming would appear to have continued at the beginning of true blanket peat development, where inevitably the ground would have become more saturated and harder to farm. It was perhaps at this stage that the secondary cobbled surface was created to the west of the field wall in Trench 15 (C15004) in order to consolidate a poorly draining agricultural soil and combat the development of blanket peat. The evidence from thin-section soil micromorphological analysis that gravel or till was added to increase the drainage capability of the increasingly paludified soil at this part of the site is an indication of adaptation to increasing pedological marginality for agriculture.

Very few artefacts were found within Trench 15, apart from several pieces of flint and quartz, which unfortunately do not help in either dating the features or determining their function. The scarcity of finds from the palaeosol across all of the trenches suggests that domestic refuse was not regularly used as a means of middening the fields, although it does not preclude the use of other forms of fertiliser. However, thin-section soil micromorphology did not record any manuring strategies such as addition of animal dung, bone or burnt material as fertiliser. This is in contrast with similar studies from the Northern Isles, where the technique has been used to illustrate land management strategies of Late Bronze Age date, including the addition of domestic wastes, ash and burnt turfs (Simpson et al 1998a; Simpson

et al 1998b). This is supported by the phosphate concentrations, as these do not produce consistently high concentrations across the site.

Radiocarbon-dated samples from the lowest level of peat growth, at the interface between the palaeosol and the first identified natural peat growth, indicate that peat growth began here in the first millennium BC and did not occur at the same time across the project area. Peat inception began earlier at the base of the slope in Trench 14, at 750–380 cal BC, while further upslope in Trench 15, where the principal archaeological features were located, peat inception dated to 390–170 cal BC. These dates provide a *terminus ante quem* for the activity at Calanais Fields and suggest that the structures excavated in Trench 15 are at least likely to be earlier than the Early Iron Age, and may be Late Bronze Age in date.

The excavation, therefore, indicates that the area around the Calanais Standing Stones was used for agricultural activity in prehistory, which may have extended over a much wider area to incorporate the features found at Tob nan Leobag (Cowie 1979; Cowie 1980), and indeed Bronze Age activity is also known at the Calanais Standing Stones (Ashmore 2016), with ploughing and ard marks noted during the second millennium BC. At the stone circle, peat growth is recorded as starting 920–400 cal BC (Phase 15) (Ashmore 2016: 981); although the earlier part of this range extends earlier than peat initiation at Calanais Fields, it does overlap with the date for peat initiation from Trench 14.

Cultivation appeared then, to have been taking place close to the standing stones in the second and first millennia BC which, along with the cultivation evidence from Calanais Fields, suggests that the stone circle was not separated from the agricultural/domestic sphere at this time but sat within it, with agriculture coexisting alongside further ritual alterations and additions to the monument in the second millennium. In the first millennium BC, the monument sees no further alteration, although it would have continued to be visible to the local population, and ploughing is recorded alongside evidence for cereal cultivation in the immediate locality.

Trench 3 proved to be more enigmatic. A later bothy of likely post-medieval date lay on top of a series of deposits containing artefacts. The

assemblage is mixed but overall a Neolithic or Bronze Age date for at least parts of the pottery and lithic assemblages can be suggested. The finds assemblage from Trench 3 also produced the only examples of pumice found from the site and one of only two pieces of pitchstone. These deposits may represent a working area, lying in the lee of a bedrock outcrop to provide shelter. The presence of pitchstone is a valuable addition to the distribution of this material, as it has not previously been found on Lewis.

Although there is evidence for Neolithic occupation in the vicinity, as evidenced by the finds from Trench 3 and by the activity at Calanais Standing Stones, any palynological evidence of Neolithic agricultural activity has been masked by pollen deterioration and soil reworking. Re-occupation, or long sequences of use, of field systems may result in masking of early activity and boundary construction. Mid-second millennium BC partial realignment of the Belderg field system contemporary with, and just 7km distant from, the Céide Fields in North Mayo, illustrates the often complex occupation histories of agricultural sites. A longer occupation sequence than is indicated by the *terminus ante quem* provided by the radiocarbon dates for construction at Calanais Fields is suggested by the presence of Neolithic and Bronze Age artefacts and the proximity to, and possible association with, the boundaries at Tob nan Leobag, where an occupation and agricultural sequence beginning in the Neolithic has been interpreted (Bohncke & Cowie nd). Later Bronze Age activity outwith Calanais Fields is also known at the stone circle (chambered tomb, ard marks, stone and turf structure) and at Tob nan Leobag.

Initial peat formation (itself perhaps accelerated by climatic change) in the early first millennium BC necessitated certain responses with respect to agricultural activities and techniques. The practice of cereal growth was abandoned simultaneously across the Calanais Fields area c 200 cal BC even though peat growth is asynchronous (as seen in the dates of Trenches 14 and 15), suggesting that climatic conditions may have been a driving force behind the cessation of cereal production. This abandonment does coincide with the regional shift to wetness noted in the Talla Moss humification

records (Chambers et al 1997). There may have been a change at this time in the organisation of land holding, perhaps with a corresponding acceptance of the marginality of the land leading to an emphasis on pastoralism. It is interesting that at around the same period there are changes seen in the settlement record of the Outer Hebrides, with the construction of large circular structures, known as Complex Atlantic Roundhouses (CARs; see Armit 1996 for a general summary). The impetus behind the construction of these buildings has never been satisfactorily established, and the results at Calanais may support an admittedly environmentally deterministic hypothesis that worsening climatic conditions and the spread of blanket peat resulted in stresses being placed upon the farming system, which may have led to the abandonment of cereal production in certain areas; the construction of CARs may have been a response to these conditions.

The gradual burial of the soil by blanket bog brings into question the issue of anthropogenic influences and impacts upon pedological and vegetational successions. Whether human activity in prehistory has caused or retarded blanket mire spread has been much debated (eg Moore 1988; Moore 1993; O'Connell 1990). The coincidence of abandonment of agricultural activity with the spread of blanket bog is often a further factor to be considered, with the ultimate question being whether blanket bog spread caused land abandonment, or vice versa. In western Ireland, O'Connell (1990: 68) has suggested that long-term prevention of tree/shrub regeneration may have been a more important factor than primary woodland clearance in blanket bog spread.

A period then ensued of blanket bog development with little or no arable activity, although it is possible that animal stocking continued. Although blanket peat spread continued (and is still ongoing), climatic amelioration in the final centuries of the first millennium AD allowed the resumption of agriculture, and by this time a new cultivar, oat, was grown which was adapted to the poorer soil conditions. At *c* AD 900, the pollen (CLF-15) records a renewal of agricultural activity and by *c* AD 1000 cereal cultivation resumes, perhaps with the development of a medieval township at Calanais.

6.2 The Calanais Fields in their wider context

Other evidence for later prehistoric agricultural landscapes in the Hebrides is limited, making the Calanais Fields evidence significant. Such insubstantial features as have been recognised include the sub-peat wall at Sheshader near Stornoway, Isle of Lewis (Newell 1988): a short length of field wall built upon a thin layer of peat was associated with palynological indicators of pastoral and arable agriculture (including cereal-type pollen), and construction was dated to *c* 2900 BP (*ibid.*). At Loch Portain, North Uist, there is another example of a sub-peat stone bank, dated to the earlier part of the first millennium cal BC, which was interpreted as a clearance feature, though apparently not associated with arable or intensive pastoral agriculture (Mills et al 1994). Another sub-peat stone enclosure feature occurs on North Uist at the multi-period site at Bharpa Carinish (Crone 1993). Here, some two millennia after the abandonment of a Neolithic settlement, peat samples taken from directly underneath field banks forming an enclosure were dated to the Late Bronze Age, and later Iron Age modification of the banks was also apparent. Again, palynological analysis furnished no evidence for arable or intensive pastoral agriculture (*ibid.*). Ard marks and spade-dug furrows were recorded at Kilellan Farm, Islay in Trench L2: Phase 3.2 (Ritchie 2005: 37–38), and this layer was dated to the Late Bronze Age/Early Iron Age. Earlier examples of plough marks, dating to the Early Bronze Age, have been recorded at the Udal, North Uist (Ballin Smith 2018: 41), at Rosinish, Benbecula (Shepherd 1976), at Sligeanach, South Uist (Parker Pearson 2012: 219–21) and at Cladh Hallan, South Uist (Parker Pearson et al 2004: 51).

Among the earliest discovered field systems of Atlantic Europe are those of western Ireland, in particular the concentration of sites in North Mayo. The best-known and most extensively investigated is the relatively large, co-axially organised Céide Fields, which was abandoned and partially buried by blanket peat by 4500 cal BP (Caulfield 1978; Caulfield 1983; Caulfield et al 1998; Molloy & O'Connell 1995). Other early field systems include the less substantial system at Scord of Brouster, Shetland, where the construction of associated houses is dated to the mid-third millennium cal

BC (Whittle et al 1986); and the field boundaries on Arran, where one boundary was discovered to have a *terminus ante quem* of the late Neolithic/Early Bronze Age (Barber 1997: 80–3). Early Bronze Age cultivation is recorded at Rosinish, Benbecula, where an agricultural and domestic landscape was buried by machair (Shepherd & Tuckwell 1977: 108). Here, however, the agricultural evidence consists of ard marks, and the only possible field boundary uncovered is not of stone (*ibid.*). These systems on the Atlantic fringe are the earliest so far discovered in north-west Europe, preceding the more widely distributed fields which appear in the later Bronze and Iron Ages (Johnston 2000: 47). There seems to be a distinct period of field system construction in the mid-second millennium BC, encompassing such examples as the Dartmoor Reaves (see Fleming 1978; Fleming 1988) as well as field systems from more geographically distant regions of the European Atlantic fringe, such as Scandinavia and the Netherlands (Johnston 2000: 50). The Calanais Fields may well be a late manifestation or continuation of this phenomenon.

Johnston (2000) provides a significant reevaluation of the study of the field systems of the Atlantic fringe, moving away from previous attempts to classify field systems based on their form and morphology (eg Bowen 1961; Feacham 1973; Fowler 1981) towards a social analysis of the pan-regional phenomenon of increasing land enclosure in later prehistoric Atlantic Europe. Arguing that differentiation of so-called intentionally and unintentionally created boundary systems (eg ‘co-axial systems’ versus ‘cairnfields’) is too simplistic and largely unhelpful to the study of field systems, he postulates that field development signifies the changing relationships between people and the land (Johnston 2000: 48–9). The implication is that the phenomenon of field system construction has significance extending beyond the development and

intensification of prehistoric agricultural regimes.

To approach this pan-regional trend of land enclosure in the Late Bronze Age by suggesting it implies an Atlantic ‘identity’, where boundaries were an important aspect of the lives of the people who inhabited these landscapes (Johnston 2000: 48), may invite the question of the importance of long-distance contacts to the geographical spread of this trend. However, Johnston goes on to argue that the range and variety of field and boundary systems display regional or local peculiarities and traditions rather than relating to a unified tradition (*ibid.*: 53). In addition, there is no clear link between the early fields of the west and the north of the Atlantic European region, and fields appear in areas which were not associated with the Atlantic Bronze Age traditions until later in the sequence (*ibid.*, see also Bradley 1997: 30).

It is important to note that reoccupation, or long sequences of use, of field systems may result in the masking of early activity. Mid-second millennium BC partial realignment of the Belderg field system contemporary with, and just 7km distant from, the Céide Fields in North Mayo, illustrates the often complex occupation sequences of agricultural sites, and the later prehistoric drystone roundhouses in the Hebrides may mask, or in some instances represent the final development of, a much longer pre-existing occupational sequence, as few have absolute dating evidence for construction and original use (eg Harding & Armit 1990; Gilmour & Cook 1998; Gilmour 2000: 157). A longer occupation sequence at Calanais Fields is suggested by the palynological indications of cereal cultivation, the vestigial earlier structural remains, the presence of Neolithic and Bronze Age artefacts, and the proximity to the boundary structures at Tob nan Leobag, where a sequence beginning in the Neolithic has been interpreted (Bohncke & Cowie *nd.*).