

A sub-peat dyke on Shurton Hill, Mainland, Shetland

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One of the largest gaps in our knowledge of prehistoric Scotland relates to the appearance of the settled and farmed landscape. That agriculture took place on a wide scale is well attested to but its nature and locale are topics which have been poorly studied as yet. In such a study a major obstacle occurs in the apparent non-survival of most artificial alterations to the landscape in lowland contexts while in the highland areas investigations are difficult to carry out due to the moorland vegetation and peat accumulation. It is however the areas of peat which should engage greater attention for, if the difficulties and frustrations of such environments can be overcome, then, as in Ireland (Herity 1971), it is possible that evidence for past landscape appearance might be obtained. The investigations at the Moss of Achnacree in Benderloch (Ritchie *et al* 1974) have proved to be very worth while and ongoing work at Blackhall, Glenshee in Perthshire is also showing that considerable evidence of agricultural activity lies under the peat cover. That such evidence occurs widely under thin peat can be seen from an examination of the field systems recorded by the former Archaeological Division of the Ordnance Survey.

Where peat cutting is taking place it is well worth examining the face and the cutover ground for signs of early interference with the pre-peat land surface. This is especially the case in the upland areas for until the middle of the first millennium BC it is most likely that these areas were not heathy wastes as today but provided zones of agricultural activity. Few occurrences of features below deep peat accumulation, which makes them of potentially considerable age, have been investigated so that where they have been noted, excavation and scientific examination of the site is bound to add to our sparse knowledge of prehistoric landscape appearance.

In *Agricultural History Review* for 1960 R B K Stevenson wrote 'Some confirmation for the early date of Shetland fields may be got at the top of a hill near Lerwick (Hill of Shurton), where at the base of a deep blanket peat there are the stumps of a dyke that had almost gone before the peat covered it' (Stevenson 1960, 2). The whole of this hill is covered with blanket peat to varying depths but on the NE side (HU 441403) peat cutting and natural erosion have exposed the bedrock and created a gully up to 14 m in width. In this gully there is an aligned mass of tumbled stones which curves slightly downhill. The site lies at 170 m OD.

CONSTRUCTION OF THE DYKE

The dyke is built of irregularly shaped blocks and slabs. These were derived from the stone pavement of the heavily weathered granite bedrock which is now revealed at the surface due to the stripping away of the peat and the subsequent erosion of the original soil cover. The slabs in the dyke vary in size from 1.28 m by 0.53 m to 0.43 m by 0.26 m. The dimensions of the dyke are difficult to determine for as Stevenson noted it seemed to have been allowed to fall into disrepair before the peat overwhelmed it.

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There has recently been peat cutting on the W side of the hilltop and this has made it possible to pick up a continuation of the dyke. Here it was even more ruined with only some of the larger stones still *in situ*; it is possible that the peat cutter has removed others but there are none to be seen lying in the vicinity.

Some of the stone slabs of which the dyke is constructed are set vertically into the ground and at right angles to the length of the dyke; others lie horizontally on top of these vertically set stones. At a distance of 1.25 m from the E edge of the gully on the NE side of the hill an investigation of the dyke's form was made. The upper free-lying stones were removed and a vertical component was revealed. The overlying peat was stripped so as to provide a cross section of the

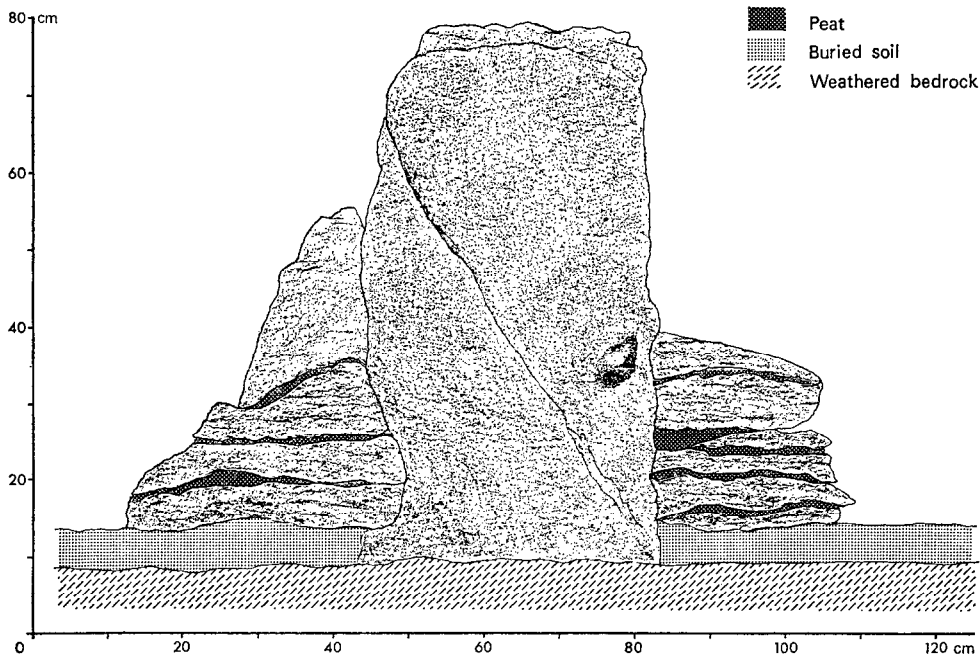


FIG 1 A drawing of the cross section of the dyke

dyke. This showed a vertical slab set down on top of the weathered bedrock and braced by smaller blocks which had apparently been placed on to the existing soil surface (fig 1). It is intended to carry out further excavation to see whether this is totally representative of the dyke's constructional form. At the moment however it appears that the dyke was of an elaborate nature, perhaps of a series of upright stones, erected at intervals and at right angles to the eventual direction of the dyke and then perhaps with slabs laid horizontally on them to provide a sort of lid or capping. The space between the uprights appears not to have had a deliberate filling. With a height of over 0.60 m above the ground the dyke must have been an impressive structure.

THE ENVIRONMENT OF THE DYKE

Before considering the purpose of the dyke some attention must be given to the physical environment in which it was set. Some components of the dyke were set directly upon the mineral soil and the sealing action of these stones means that the pollen content of that soil should reveal

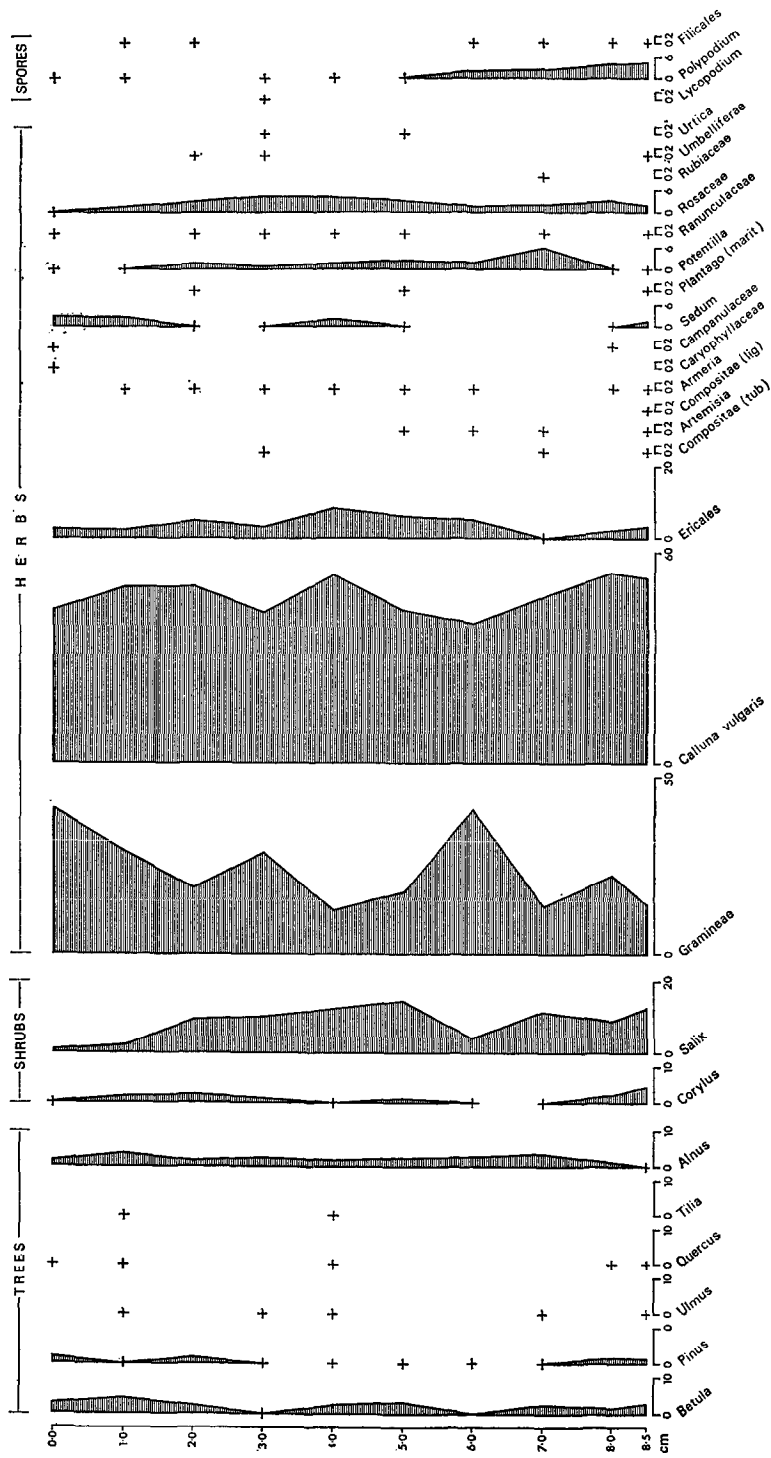


FIG 2 Pollen diagram of the fossil soil preserved under the side-supporting stones of the dyke

the vegetation complex of the area at the time of the dyke's construction. Beneath the side stones was a depth of 8.5 cm of mineral soil and this was analysed for its pollen content. Fig 2 shows the results obtained. We are dealing with a virtually treeless environment and a plant assemblage dominated by *Calluna vulgaris* (ling) and *Gramineae* (grasses). There is also a range of other herbaceous plants but all in very restricted amounts. The whole assemblage is consistent with what might be expected from a heathland in which grasses are an important component. Whether it is possible to consider the stratified sampling results as having any great value is questionable due to the probability of movement through the soil of pollen after its deposition. The problem of soil disturbance during the building of the wall, especially in the letting in of the main upright slabs, must also be remembered. On the whole however the pollen profiles show no great vertical variation except interestingly in the decline of *Salix* (willow) and of the spores of *Polypodium* (polypody).

THE PURPOSE OF THE DYKE

In one sense the dyke on Shurton Hill and the only other sub-peat features examined, the banks on the Moss of Achnacree, are similar in that they were both constructed in an area of heathland. At Achnacree the banks are considered to be the result of agricultural activity (Barrett *et al* 1976). At Shurton the existence of this one dyke makes equally feasible either a territorial boundary or an as yet undiscovered field system. There are superficial remains of the dyke over a distance of 31 m near the hilltop where the peat has been cut. Other slab alignments which protrude in places through the peat of the hillsides suggests that the dyke has a length of at least 400 m, running from near the edge of Sandy Loch in the E to a point over halfway between the hilltop and the Loch of Wick to the W. Furthermore during field survey on the N slope of the hilltop a series of stones with a totally different alignment from that of the dyke and also assembled in a different manner was discovered emerging from the peat. Close to this construction and a little higher up the hill, there is what might be the foundation of another structure, perhaps an enclosure. There does appear therefore to be more than just the main dyke and one is led irresistibly to ponder a similarity in purpose here with the reaves of Dartmoor described by A Fleming and J Collis (1973). That the dyke was an important divider of pastoral territories seems most likely at present.

At some stage this dyke was overwhelmed by peat. The lowest 25 cm of mineral soil and organic material were analysed for pollen content. The resultant diagram (fig 3) shows two very interesting features. The first is associated with the pollen content. The lower part of the pollen profiles, as might be expected, is similar to the profile for the soil under the dyke but at a depth of 1.85 m from the present surface of the peat there is a sudden, dramatic and permanent decline in the content of grass pollen. At the same time there is an upsurge in the *Cyperaceae* (sedge) pollen. Also notable is the confirmation in this diagram of the decline, noted in the pollen diagram of the buried soil, of *Polypodium*, a plant which virtually disappears when exposed to the pasturing activities of animals.

The second important feature is that between 1.90 m and 1.80 m there is a strong concentration of charcoal. The upper part of the mineral soil and the lowest layer of the peat reveal the effects of burning. Do we have here evidence of the deliberate use of fire, over a period of time, in an attempt to maintain pasture in a similar manner to that for which muir burning is undertaken today? This latter involves of course the use of a controlled and quick, hot burn. Did the dyke builders or their successors overdo the burning and thus destroy the heather-grass balance in the heathland? Do we have on Shurton Hill an instance of vegetation change induced, not as on

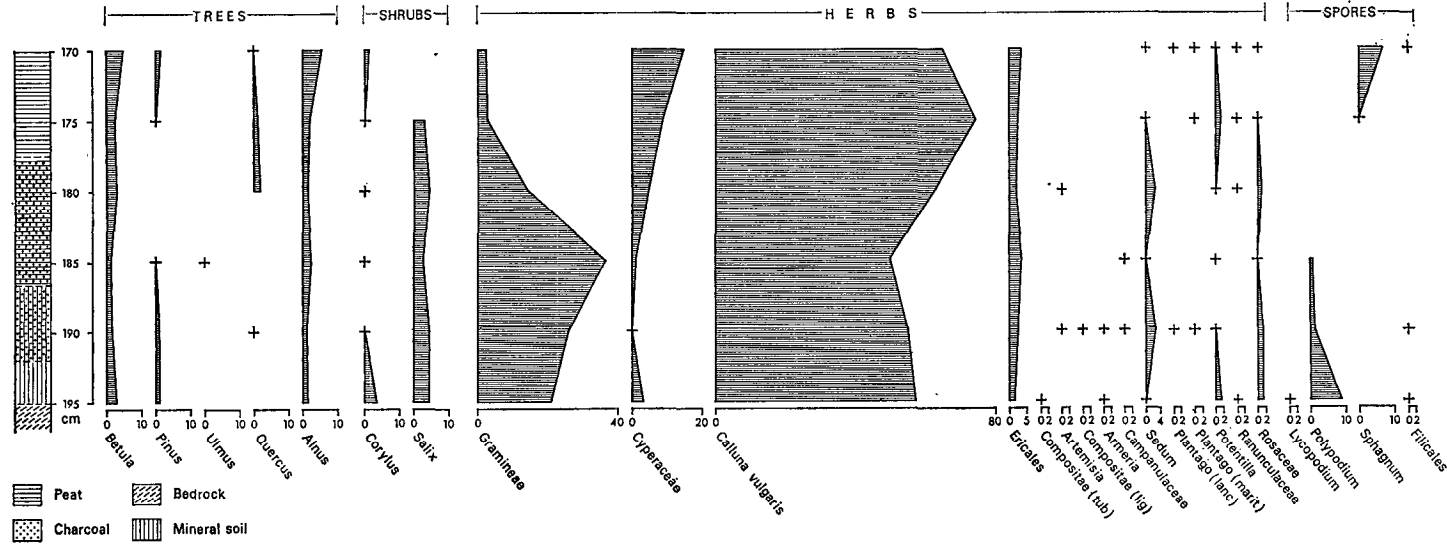


FIG 3 Pollen diagram of the mineral soil and the lowest part of the overlying peat

some of the areas now occupied by heaths in England or probably also at Achnacree, by injudicious cultivation accompanied by climatic deterioration, but by continued and uncontrolled burning? Is it possible that the growth of the peat while climatically induced was encouraged by the destruction of plants and soil nutrients by fire which was either accidental, or more likely, judging by the length of time over which it occurred, deliberate. The existing evidence is highly suggestive and will repay further investigation.

Finally it might be asked with what sort of time period we are dealing here. In Ireland the sub-peat boundaries in Co. Mayo belong to the period preceding 2000 bc (Caulfield 1976), for at that time the peat started to grow. At Achnacree the land surface below the bank was dated at 1359 bc. Radiocarbon analysis of the soil from beneath the dyke at Shurton gives 2800 bc (UB 2122). What is needed now is further dating from the proximity of the wall; a date for the origin of peat accumulation and another which would show the speed of peat growth will be of considerable interest in determining human activity and its possible involvement in environmental deterioration in the higher area of Shetland. What is quite clear however is that pre-historic activity in both lowland and upland Shetland has very early origins.

ACKNOWLEDGMENT

Thanks are due to Mr T Henderson of the Shetland Museum for his assistance in locating the dyke and for continuing help during the work.

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