ARK Report 4881

367.

THE HOLOCENE VEGETATION OF THE ISLES OF SCILLY

ROB SCAIFE

In spite of their small area, there exists a substantial number of pollen data from the islands. These are largely soil pollen analyses carried out in response to the extensive archaeological interest of the Scillies. The highly equable character and the diverse flora today are well known (Lousley 1971). The fact, however, that today these islands are devoid of indigenous woodland has posed questions as to the character of the natural vegetation and to the effects of prehistoric occupation in ther Islands.

Early macrofossil records attest to the presence of woodland. Lousley (in correspondence) noted the records of oak trunks in submerged forest situations around the coastline and there are numerous old records of stumps (mostly Quercus) having been dug out of the ground of St Mary's, St Martins and Trescoe. In the latter Augustus Smith recovered these prior to his tree planting activities.

Dimbleby (1977) provided the first pollen evidence that the Scillies had been dominated by deciduous woodland. Although no means of dating were possible, his soil profile from Inisidgen (SU919128) showed conclusively that Quercus and Corylus were present in open canopy woodland with Gramineae and Pteridium ground flora. That forest

clearance took place is also seen in this profile. The truncated lower soil levels continiuing the evidence of deciduous woodland are overlain by a zone of dominant Gramineae and Pteridium prior to burial by blown sand.

Clear evidence of post-forest clearance agriculture comes from 3 soil profiles which provide very localised data from adjacent to the archaeological sites of Halangy Down Iron Age settlement (Excavated by P. Ashbee 1965-70), Nornour in the Eastern Isles (Butcher 1970,1971,1972,1974) and Bar Point, St Mary's (Evans 1984). At the former, DimblebY (Dimbleby et al 1981) points to the striking absence of tree pollen in the soil profile of the ciff section immediately adjacent to the Iron Age settlement and the nearby Bronze Age Bants Carn passage and entrance grave. Pollen taxa present in the spectra were characterised largely by types indicative of pastoral and arable agriculture and perhaps evidence of sea weed manuring. At Nornour, pollen analysis by Greig (Keeley and Greig 1978 ; Dimbleby et al. 1981) was carried out on a soil profile buried by blown sand adjacent to a later prehistoric and Romano British site (SU9441481). Although not radiocarbon dated the lower section of the profile was thought to broadly corresepond with the period of occupation. As in Dimbleby's analysis of Halangy, evidence of cereal cultivation and pastoralism was present. Balaam (in Evans 1984) has studied the soil profiles underlying some Iron Age (c190+-70bc) field boundaries and lynchets excavated at Bar Point (SV916128). In each case his pollen assemblages are again indicative of an open lanscape with some evidence of cereal cultivation. Although in relatively close proximity to Dimbleby's earlier section at Inisidgen, similar high arboreal pollen values were not found although one section produced

small quantities of Quercus, Alnus and Corylus at its base.

Analyses of peat accumulations might be expected to provide both a longer record of vegetation and enviromental change and enable some correlation of the individual soil profiles noted above. Pollen diagrams from the two remaining relatiely extensive peat areas of Higher Moors nature reserve (SU923109) and Lower Moors (SU913106) have been constructed (Scaife 1980a,1980b,1984; Scaife in Dimbleby et al. 1981). Radiocarbon dating of Higher Moors peats shows that their growth was initiated during the mid-Atlantic period at 6330+-100 (HAR-3695). This sequence therefore provides data on the Flandrian climax vegetation of the area and of subsequent effects of prehistoric deforestation. Lower Moors has not yet been dated but is seen to be a younger deposits developing from an originally shallow pool or lagoon during the later prehistoric perood. Both mires have been extensively cut for fuel in the past and are currently being rapidly degraded through water extraction earlier land drainage and scrub regeneration. The ecological character of these areas it seems fdrom earlier botanical records has changed substantially with areas of more acid bog now almost non-existent.

HIGHER MOORS

Porth Hellick nature reserve is a topogenous mire extending from Porth Hellick Bay (SU925107) inland to Holy Vale (SU921115). A maximum thickness of 76cm of black highly humified detritus and monocotyledonous peat rests sharply on clean white (bleached) sand of low organic content. Five pollen assemblage zones have been recognised (HM:1-5). The base of HM:1 at 76cm yielded a C-14 assay of

6330+-100bp (HAR-3695) and a pollen spectrum dominated by Quercus, Ulmus, Betula and Corylus. This represents thw character of the Atlantic forest at least in this area of St Mary's. A decline (68cm) in AP and increase in herb taxa occurs. This includes evidence of cereal cultivation. C-14 dating haa proved to be problematic in dating these organics (Scaife 1984). The overall changes in the sequence appear to show this phase of forest clearance (perhaps Neolithic) was followed by a period of regeneration (late-Neolithic/early Bronze Age). A major phase of forest clearance is present (cm) and this is likely of middle Bronze Age date correlating with the widespread archaeological evidence. It is this phase of openess whithin which the open ground evidenced in soil pollen analyses (above) may be placed.

LOWER MOORS

Also known as Old Town Marshes, is a relatively extensive area of peat lying behind and protected from marine inundation by blown sand at Porthloo (SU909112) and Porth Mellon (SU909108) to the NW and to thw Southbehind Old Town Bay (SU912102). Extensively drained and cut (easily visible), a maximimum of 50cm of highly humified peat was found in areas next to old peat cuts. These areas frequently have magnificent stands of Osmunda regalis (Royal Fern). Four pollen zones (LM:1-4) have been recognised (Scaife 1984). The basal zone (LM:1) illustrates the presence of shallow freshwater as earlier postulated by Lousley (Lousley 1971,13). This community became progressively drier through hydroseral succession. Agricultural activity is present to the base of the profile and although C-14 dating has not yet been undertaken, the presence of cultigens and Betula, Quercus and Corylus type seems compatible with HM:3 of Higher Moors (Late-Neolithic/early

Bronze Age). Above LM:2 is the start of the major phase of openness seen in HM:4 during the Bronze Age.

CONCLUSION

A Flandrian Climax forest comprising Quercus, Betula, Corylus and Fraxinus was present (Higher Moors and perhaps Inisidgen). Th earliest evidence of agriculture (cereal) is seen at Higher Moors. It is thought that this was Neolithic and which was followed by some late Neolithic or early Bronze Age woodland regeneration. During the Bronze Age and likely assiciated with the widespread archaeological activity, is the almost total cearance of remaining woodland and the establishment of arable and, pastoral and plagioclimax communities. It is this openess which is evidenced in the soil pollen profiles associated with the Iron Age and Romano British settlements. To clarify some of the dating and environmental problems, further work is being carried out on the peat and soil profiles underlying dayed archaeological structures. It is hoped to obtain (through diving) some of the submerged peats variously noted around the Islands which may yield data on the character of early Flandrian environments.

REFERENCES

Butcher, S.A. 1970 ''Excavations at Nornour, Isles of Scilly'. 1969-70'. *Cornish Archaeology* 9,69-76.

Butcher, S.A. 1971 ''Excavations at Nornour, Isles of Scilly'. 1971'. *Cornish Archaeology* 10,94.

Butcher, S.A. 1972 'Excavations at Nornour, Isles of Scilly'. 1972'. *Cornish Archaeology* 11,58-9.

Butcher, S.A. 1974 'Nornour'. *Isles of Scilly Museum Publication* No.7

Dimbleby, G.W. 1977 'A buried soil at Inisidgen, St. Mary's, Isles of Scilly'. *Cornish Studies* 4/5,5-10.

Dimbleby, G.W., Greig, J.R.A. and Scaife, R.G. 1981 'Vegetational history of the Isles of Scilly'. In Brothwell, D. and Dimbleby, G.W. (eds.) *'Environmental aspects of coasts and Islands'.*
Symposia of the Association for environmental archaeology No.1 B.A.R. (International Series) 94,127-143.

Lousley, J.E. 1971 *'Flora of the Isles of Scilly'.*
David and Charles, Newton Abbot.

Scaife, R.G. 1980 'The vegetational history of the Isles of Scilly. I:pollen analysis of Higher Moors, St Mary's'.Ancient Monuments Laboratory Report No 3407.

Scaife, R.G. 1983 'A history of Flandrian vegetation in the Isles of Scilly. Palynological investigations of Higher Moors and Lower Moors peat mires, St. Mary's'. In 'The Isles of Scilly and their early environment'. *Cornish Studies* 11,33-47.