Reports from the Environmental Archaeology Unit, York **94/52** 5pp

Technical Report: Fish Scales from Ferriter's Cove, County Kerry, Eire.

by

Brian Irving

Summary

Fish scales from a Meso-Neolithic shell midden deposit exposed in a cliff face in Western Ireland have produced three identifications, one to species level and two to family. The scales also produced evidence for seasonality and strongly suggest the possibility of summer site occupation. The fishes were taken from the local environment based on modern fish distributions in the area. The scales identified are all ctenoid type which are robust when compared to cycloid scales. This probably caused differential survival of scales as bones and teeth of species which have cycloid scales were identified from the same deposit.

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Introduction

The site of Ferriter's Cove is situated within an embayment on the west coast of Eire (Woodman and O'Brien 1993). The site has both Mesolithic and Neolithic occupation levels over a large area of both cliffs and sand dunes. The material examined here was excavated during the 1983-87 field seasons and was collected from Trench 2 Layer 2 which forms part of an eroding cliff face with remnant shell midden lenses. The deposits were sieved and consequently produced the fish scale fragments reported on here.

Methods.

The scales, which were in a very dry and brittle state, were placed in white spirit for 2 hours to clean them and render them flexible. They were then examined under a low power microscope and those scale fragments which showed good survival of morphological characters were placed on glass photographic transparency mounts. These were then projected to high magnification and identifications were made using the comparative fish scale collection of the EAU. Evidence for seasonality was also sought using criteria outlined by Irving (1988 and in preparation).

Analysis.

A total of four samples were fully examined. The findings are as follows.

The scales were in a very fragmentary state and some had evidence of heat damage, probably caused by cooking. The scales which had undergone burning survived better than those which had no traces of heat damage. The scales were found in association with other ichthyofaunal elements (bones and teeth) which suggest that the scales were attached to the fish when they were cooked.

FC 1983, TRENCH 2, LAYER 2,
(no sample number)
Number of scales = 214

The material was dominated by gurnard (Triglidae) scales, which were only identifiable to family level. The larger fragments were wrasse (Labridae) of which six could be refered as ballan wrasse *Labrus berggylta* (Ascanius) lateral scales. The ballan wrasse scales also provided evidence for season at death Three of them showed the same growth pattern, so the scales were probably from the same individual. They suggest that the fish died during mid to late summer. These three scales were the only ones which had areas complete to the growing edge: the most useful one is shown in

Figure 1. There were a number of other scales which closely resembled bream family (Sparidae) but could not be identified more closely than family.

FC 1983, TRENCH 2, LAYER 2, (sample label not clear ?)
Number of scale fragments = 67

This assemblage was again dominated by gurnard scales with some ballan wrasse. There is also a single scale fragment of mullet (Mugilidae).

FC 1983, TRENCH 2, LAYER 2, SS 6
Number of scale fragments = 13

Both gurnard and wrasse scales were identified but were in a very fragmentary state.

FC 1983, TRENCH 2, LAYER 2, SS 7
Number of scale fragments = 44

The material from this area was extremely fragmentary, so that no identifications could be made.

The materials and identifications are summarised in Table 1.

Discussion.

The survival of fish scales within this 'fish-rich' deposit is probably a result of the fact that they are heavy *ctenoid* types. Ctenoid scales are usually more robust than *cycloid* scales and in the case of the species identified are heavily calcified; in the gurnards they form armoured areas along the flanks. The fact that some of them have survived the rigours of cooking attests to their strength.

Other species in the assemblage, identified from bones and teeth, have cycloid scales which are much more fragile and probably would not survive the rigours of cooking followed by burial over thousands of years.

The evidence for seasonality is not suprising in that the species identified feed inshore on rocky coasts during the summer months. The three scale fragments used to identify the seasonality were all ballan wrasse. However, the rest of the fishes in the assemblage could be caught during the summer in and around rocky coasts and storm beaches.

The material has provided an opportunity to work on a range of scale types and preservation states which has produced evidence for both season at death and the range of species exploited.

Fish scales are rarely recovered from sites which are not urban or waterlogged. However the remains from Ferriter's Cove show that with care other sites can produce scales and that their subsequent analysis have the potential to provide important data.

References.

Irving, B.G. (1988) *The Salmon in Prehistory; a zooarchaeological study.* Unpublished undergraduate dissertation, Department of Classics and Archaeology, University of Lancaster.

Irving, B.G. (in preparation) Seasonality in the Atlantic salmon (*Salmo salar*); exploring the resource scheduling "myth". in *Seasonality.* proceedings of the Association for Environmental Archaeology, annual conference, 1994. Zwartsluis, The Netherlands

Wheeler, A. and Jones A.K.G. (1989) *Fishes;* Cambridge Manuals in Archaeology. Cambridge University Press.

Woodman, P.C. and O'Brien, M. (1993) Excavations at Ferriter's Cove, Co. Kerry: An Interim Statement. in, *Past Perceptions, the Stone age Archaeology of South West Ireland.* Shee-Tuohig , E and Ronayne, M. (eds). Cork University Press.

	Number of fragments
(Sparidae)	1
(Labridae)	46
Labrus berggylta (Ascanius) ballan wrasse	6
(Mugilidae)	1
(Triglidae)	103
Indeterminate fragments	181
Total	**338**

Table 1. Ferriter's Cove fish scales.

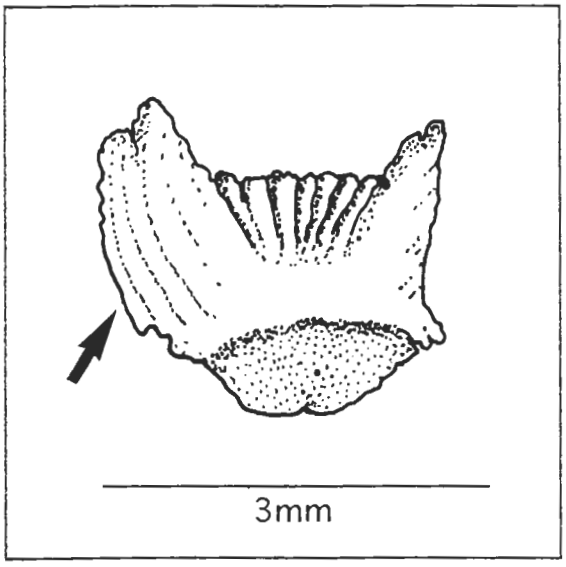

Figure 1. A scale used for season at death determination, complete fragment of growing edge arrowed.

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