

Tarbat (TR98) The Fish Bone

By Matilda Holmes. March 2012

Introduction

The fish bone assemblage comprises a few small samples from phase 1 to 3 features, and a considerable assemblage from the midden and other phase 4 features (Table 1). Although the earlier sample is small, its contrast with that of the later phase makes it worthy of consideration.

Method

Bones were identified using the author's reference collection, and other resources as required, they were recorded using the York system (Harland *et al* 2003), where only the most diagnostic elements are identified. Condition of the assemblage was recorded (following Lyman 1994, 355), as was evidence for other taphonomic factors such as butchery, gnawing, burning and working. Measurements were taken where the bone was complete enough (Morales and Rosenlund 1979). Information on the ecology of species was taken from Fishbase (Froese and Pauly 2000).

Both hand-collected and samples (sieved to 1mm) were recorded.

Taphonomy and Condition

The bones were generally in good condition (Table 2), with a small number able to be refitted from smaller fragments. A high proportion of phase 1 to 3 bones were burnt (63%), suggesting they were subject to different processing than those of the later phase, of which only a few fragments (2%) were burnt. 5 bones from phase 4 had been gnawed.

Butchery and Fragmentation

Butchery marks were only observed on phase 4 bones. Very few vertebrae included the lateral or dorsal spines, even in the sieved samples there were very few spinous processes, (25% of the total number of ribs, rays and spinous processes and vertebrae) which suggests that these were removed at an earlier stage in processing. While this could be a matter of taphonomy, occasional butchery marks were observed on cod vertebrae largely in the axial direction on the lateral aspect of vertebrae (Figure 1), but also, more rarely, as transverse chops and cuts. A similar cut mark was observed on a haddock caudal vertebra, in a transverse direction. Although not obvious from the bagged assemblage, the site record notes a number of articulated vertebrae which would have been deposited intact, as part of a butchery process.

Other butchery included a cod vomer had a knife cut to the dorsal aspect and an articular from a gadidae spp. with holes pierced in it (Figure 2), possibly resulting from hanging the fish or removing a fishing hook – the size of the hole is consistent with hooks recovered on site (C. Spall pers. com.)

When the skull elements present were compared with those from sites of known function (Barrett *et al* 1999, 372 Figure 378), they are consistent with the results from sites where fish were being cured and exported (Figure 3; Table 3). And this, combined with the location of butchery marks and presence of filleted vertebrae, suggests that the cod assemblage from phase 4 was consistent with the waste left over following preservation previously recorded at Robert's Haven, Caithness and St Boniface, Orkney (Barrett *et al* 1999, 371; Barrett *et al*

2008, 852). The haddock assemblage included greater numbers of cleithra, which are more commonly recorded on sites where whole fish were consumed. However, this is also a phenomenon that has been observed on other sites and related to the unusually robust cleithrum of the haddock, creating a bias in favour of preservation of this element (Barrett *et al* 1999, 373). Haddock, too, may be the result of preservation or curing waste, particularly given the low numbers of supracleithra.

Phases 1 to 3: Early Christian Monastery (6-11th century)

This assemblage, although small included freshwater or marine char, oceanic cod and horse mackerel and (Table 4). Char are present in deep glacial lochs in Scotland, and could have been caught in the highland lochs Morie or Glass c.26 miles away by land, or loch Ness, c.30 miles away by sea (National Library of Scotland 2012). However, all three species are available in coastal waters or further out at sea. The increase of cod in the 8th to 9th century is consistent with the increase in cod fishing in the Viking age period (9th to 11th centuries) (Barrett *et al* 2000, 151; Barrett *et al* 2004, 624).

Phase 4: Medieval Lay Settlement (13-15th century)

The increase in fish bone evidence from this phase comes exclusively from marine fish (Table 4). The majority of the assemblage derives from large numbers of cod and haddock, but includes various demersal species living on or near the ocean floor i.e. flatfish (plaice, halibut and possibly dab), conger eel, halibut, haddock and saithe all of which could be caught from close to the shoreline. Other species are benthopelagic and can be caught at all depths such as herring, cod, and pollack. All these fish occupy littoral zones, and can be found within the range of the continental shelf, so could be caught from the shore or with a small boat keeping close to the coast. Herring, cod, conger eel, halibut, haddock and saithe may be caught further out to sea.

The increase in gadid family species (i.e. cod, saithe, pollack and haddock) has been observed in assemblages from northern Scotland in the medieval period (Barrett *et al* 1999, 356), which is consistent with the findings from Tarbat. This reflects the intensification of the fish trade in both Scotland and Europe at that time (Barrett *et al* 1999; Barrett 2008).

A small number of measurements were available for cod and haddock bones, which were used to estimate the total length of fish (using equations in Jones 1991). The results for cod (Figure 4) were compared with those given for a number of medieval northern Scottish sites (Barrett *et al* 1999, 361 Figure 364), those from Tarbat lying within the range for larger fish. No such comparanda were available for haddock, but they were similarly in the larger range of samples given by Jones (1991, 155 Figure 157). The life cycle of cod suggest that larger fish are more likely to live in deeper waters, and the size of cod from Tarbat are consistent with those suggested by Barrett *et al* (1999, 363) to be large enough to have required deep sea fishing.

Summary

Although not a vast sample size, the fish bone assemblage from Tarbat has allowed some comments to be made regarding the nature of fish exploitation from the 6th to 15th centuries, of which relatively little is known in this area of the British Isles. The earliest phases were typified by a very small number of fish bones, suggesting that nearby lochs may have been fished, or, more likely, that the closer, more easily accessible marine resources were taken advantage of. The evidence from isotope studies on the human bone at the site suggest that only negligible amounts of marine resources were eaten by the inhabitants of the site in this

phase. This is consistent with the low numbers of fish bones recovered on the site, the members of the monastery possibly focusing their attentions towards more land-based food sources.

Following a hiatus between the 11th and 13th centuries, there was evidence for an intensification of the utilisation of marine stocks to have taken place in the intervening period. This is not surprising, as the phenomenon has been recognised on English sites from c.AD 1000 and those from further north in both Scotland and Europe as occurring on Viking age sites from c.AD 900. The diversity of species suggests that both coastal and deep-sea waters were exploited, requiring some considerable expenditure of time and skill. Furthermore, the implications from metrical analysis suggest that larger fish were targeted, requiring the use of deep-sea fishing methods.

The combination of butchery marks and anatomical representation further implies that the deposits of cod and haddock resulted from a preservation process, where fish were beheaded and vertebrae removed on site, and then smoked or salted with the cleithra and/ or supracleithra intact, to be traded further afield or supplied to another location.

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