To fish or not to fish? Evidence for the possible avoidance of fish consumption during the Iron Age around the North Sea

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Introduction

Accounts of the Late Iron Age economy of the areas around the southern part of the North Sea typically do not refer to fishing as an important contribution to subsistence (e.g. Bloemers and Van Dorp 1991; Green 1992; Van Heeringen 1992; Cunliffe 1995; Champion and Collis 1996). In the case of freshwater fishing, most texts seem to assume implicitly (by referring to older periods and common sense) that some food procurement did occur in inland waters, but how important this activity was remains unclear. The evaluation of marine resource exploitation is even more problematic for the Late Iron Age. We do not really know to what extent people were fishing in the sea, and, when they did, whether this fishing was practised in the estuaries, along the coast, or in open waters. In any case, the evidence is very scarce, but whether this is proof for a lack of interest in marine and freshwater resources needs to be more fully evaluated.

If some Late Iron Age peoples in north-west Europe did not incorporate aquatic resources as a significant part of their subsistence strategies, it remains unclear why this would have been the case. Was this because of ecological conditions, different economic options, a lack of economic specialisation, a lack of technology, or other reasons? The following paper reviews the Iron Age zooarchaeological record for three countries bordering the North Sea (England, Belgium, and the Netherlands) in order to evaluate more fully the possible nature and extent of fish exploitation.

England: the absence of evidence

The pre-Roman Iron Age in Britain is generally seen as a period characterised by a hierarchical society, where the control of agricultural production, surplus, storage, and distribution are central to its understanding (e.g. Cunliffe 1995). International links were also of manifest importance during this period (particularly for the Mid to Late Iron Age) and the scene is also set for the beginnings of Roman influence. Archaeological evidence indicates a high level of continuity in settlement and land use and, by implication, in social and economic organisation, between the Late Iron Age and Romano-British periods, as well as contemporary regional variations. Zooarchaeological research for these periods has traditionally focused upon economic systems, particularly in terms of intensification or extensification of agricultural production, but in recent years, a growing interest in using bioarchaeological evidence to explore broader social systems (for example ritualistic and religious practices) has led to a number of zoo-archaeological studies that have a direct bearing on the issues to be explored in this paper.

Several authors reporting on Iron Age vertebrate assemblages from the south of England have noted the rarity or often complete absence of evidence for the exploitation of fish at the sites in question (e.g. Gregory 1978; Grant 1984; Hill 1995). Although this may be heavily influenced by the often poor preservation of vertebrate remains from the shallow deposits associated with rural settlements (e.g. through acid soils and the comminution of fragile remains by scavengers), or by the fact that many assemblages of this date have not been systematically sampled and sieved, this pattern may in fact still represent a real phenomenon.

There are wide regional variations in the number of Iron Age animal bone assemblages available for study. This results from a variety of factors, such as the effect of the underlying geology on preservation, differences

in recovery techniques, site visibility, disparate scales of urban and rural development affecting the focus of rescue excavations, and differing regional research agendas to name but a few. The vast majority of published assemblages are from southern England and the Midlands, with far fewer collections having been excavated and published from northern England. A previous survey of zooarchaeological work found that only 20 Iron Age vertebrate assemblages were available for northern England (the vast majority of those being small evaluation or assessment reports) compared to a total of 79 from the Midlands (Albarella and Dobney, unpublished data). Iron Age animal bone assemblages are also much less well represented than Roman ones. For example, 94 Roman assemblages have been published from the north of England and 174 from the Midlands (*ibid.*). A comparable survey of archaeo-zoological assemblages for the south of England has unfortunately not yet been completed, but this paper includes as much of the available information as possible (e.g. Hambleton 1999).

In terms of broad topographic location, few Iron Age animal bone assemblages (or Roman ones for that matter) in England are from coastal settlements, which significantly limits our understanding of the possible scale and scope of marine exploitation during these periods, unless trade in marine fish from the coast to more inland locations regularly occurred (as it certainly did during medieval and later times). Thus a more realistic and balanced view of the role of fish and fishing in the Iron Age of England may perhaps only be addressed by reference to freshwater and estuarine resources. Although the many and varied potential biasing factors in the datasets should be borne in mind whenever such broad synthetic overviews are attempted, some interesting results have nonetheless been forthcoming.

A total of 117 published vertebrate reports from sites of broad Iron Age date throughout England were surveyed to assess the evidence for fish exploitation and consumption (see Appendix for details and references). Initial analysis showed that those sites where fish remains had been recorded were clearly in the minority (Fig. 1), with over 90% of the 117 sites yielding no remains at all. If we compare the frequency of Roman assemblages containing fish bones (from the Midlands and the north of England, where we have directly comparable datasets) to Iron Age ones (Fig. 2), it is clear that more Roman assemblages contain fish bones (7% of sites for the Midlands, 9% for the North) than Iron Age ones (2% for the Midlands, 0% for the North).

What is also very apparent is that at the 11 Iron Age sites where fish remains have been identified (see Appendix), the fish bone collections are both extremely small in terms of numbers of fragments (most less than six) and restricted in the variety of taxa identified, except one: the Late Iron Age nucleated settlement at Skeleton Green, Puckeridge–Braughing, Hertfordshire (Partridge 1981; see also Bryant this volume). At this site, six taxa and 46 identifiable fragments of fish were found, forming an unusual and distinctive collection, which does not follow the general patterns of the other Iron Age assemblages where fish remains are present; the possible significance of this is further discussed below.

Apart from differential preservation of fish remains, one of the most obvious possible explanations to account for this potentially interesting phenomenon is the lack of systematic sieving and recovery at many sites. Fish bone assemblages tend to be comprised of species whose individual skeletal elements are small. In fact, many of these remains would be completely overlooked during excavation (as indeed would small birds and mammals) if representative sediment samples were not sieved through a <5mm mesh. As Wilson (1993, 172) remarked in his analysis of the animal bones from Mingies Ditch, Oxfordshire, 'the absence of small species on other local Iron Age sites may result from a virtual absence of soil sieving'.

Whilst this argument must be a significant factor affecting the frequency of fish remains in many of the assemblages included in this survey, it surely cannot wholly account for their consistent absence. At least 22 (18%) of the assemblages included here were originally subjected to varying degrees and types of sampling, sieving, and systematic recovery during excavation (see Appendix). There appears, however, to be no correlation between those that were sieved and those that produced fish bone: only two of the 22 sieved assemblages contained fish bones, while a far larger number produced varying quantities of other small bones also often missed when sieving is not undertaken.

Thus, Mid–Late Iron Age deposits from Balksbury camp produced numerous small mammal and amphibian remains, but fish bones were lacking. Numerous small mammal taxa were recovered from Maiden Castle and Little Sombourne, sites again characterised by an absence of fish remains. Charcoal, seeds, snails, and a range of small mammals, amphibians and birds were present in wet-sieved samples from Micheldever Wood, but no fish bones were reported. Many small mammal bones were recorded from an Iron Age pit at Ructstalls Hill, where it was deemed notable that no bird or fish bones were recovered (Gregory 1978). Finally, at Winklebury, targetted sampling and subsequent sieving of sediment samples produced many small mammal bones, but once again no fish remains.

Bones from small taxa other than fish were also recovered at a number of sites where sieving was not apparently undertaken. For example, the bones of birds, small mammals, and amphibians have been recovered in moderate quantities from Iron Age deposits at Gussage All Saints, Danebury, Uley, and Winnall Down. At the religious site at Uley, it was notable that although no fish were recovered from prehistoric deposits, they were relatively plentiful in Roman contexts.

It is therefore clear that the remains of numerous

small vertebrate taxa other than fish were present in a variety of Iron Age animal bone assemblages, from both sieved and unsieved deposits. In this light – and given the diversity of geographical locations represented by the sites in the survey – it is difficult to argue that recovery and preservation are the principal and sole reasons why fish remains are largely absent from English Iron Age assemblages. Another explanation must be sought.

As previously noted, a single Iron Age site in the survey had a modest fish bone assemblage, which includes a broad range of taxa. The lower deposits of a Late Iron Age well at Skeleton Green yielded a total of 46 fish bones, including the remains of species such as eel (*Anguilla anguilla*), roach (*Rutilus rutilus*), chub (*Leuciscus cephalus*), and cyprinids (Cyprinidae sp.), all of which could have been caught in nearby rivers. However, the presence of estuarine species – plaice (*Pleuronectes platessa*) and flounder (*Platichtys flesus*) – at an inland site suggests a link with fisheries, perhaps in the Thames estuary, whilst the single marine species, Spanish mackerel (*Scombrus japonicus*), caught today off the coast of southern Europe, indicates foreign trade (Wheeler 1981). Pre-Roman import of culinary luxuries from the Mediterranean region is implicit in the ceramic containers found at Skeleton Green and other major Late Iron Age centres (Fitzpatrick and Timby 2002), but is more commonly associated with the Roman period (Dobney 2001). Finds have included the remains of Mediterranean fish species such as red mullet (*Mullus surmuletus*; Stallibrass 1997), Spanish mackerel (Murphy *et al.* 2000), and even Nile catfish (*Clarias* sp.; Jones 1996), which would have been imported as cured/dried specimens, or in sealed jars of oil as *salsamenta* (Van Neer and Lentacker 1994).

At Romano-British urban centres such as York (A. Jones 1988), Lincoln (Dobney *et al.* 1996), and London (Bateman and Locker 1982), concentrated deposits of small marine fish bones have been interpreted as remains from the preparation of fish sauce such as *garum*, *allec,* or *liquamen.* Direct evidence for the import of fish sauce into early Roman Britain is at present ambiguous. Possible finds from York (Kenward *et al.* 1986, O'Connor 1988) have not yet been studied sufficiently. Another potential example comes from Winchester Palace, Southwark, where the remains of six heads of Spanish mackerel were found in a first century AD amphora (Yule 1989; Locker 1994), on which the inscription described the contents as *liquamen*, and the property of one Lucius Tettius Africanus from Antipolis (modern-day Antibes). However, the heads are more likely to be the residue of imported pickled/ preserved fish present in a re-used container (Van Neer and Lentacker 1994), just like the examples cited above. There is also evidence for local fish sauce production in the later Roman period, since the species identified from some so-called 'fish sauce contexts', namely clupeids (Clupeidae sp.) and sand eels (Ammodytidae sp.), are

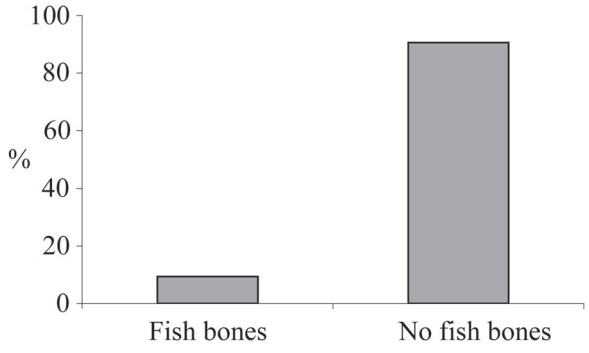

Fig. 1. Frequency of English Iron Age sites, with and without fish bones, surveyed for this study (n = 117).

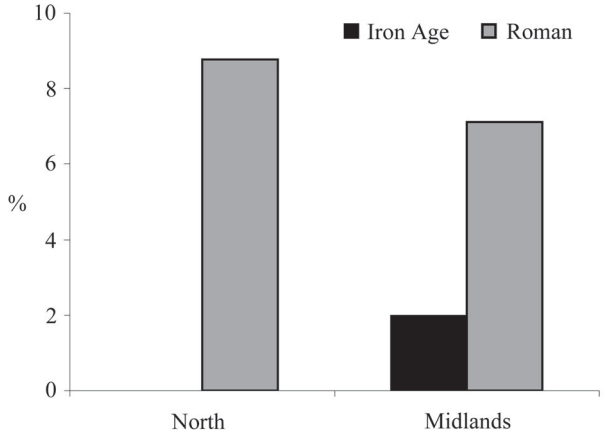

Fig 2. Percentage of sites with fish bones from Northern England (total Iron Age = 20, total Roman = 94) and the Midlands (total Iron Age = 79, total Roman = 174) (source: Albarella and Dobney unpublished data).

commonly available in the North Sea. This local British production appears to have developed to cater for a growing and characteristically 'Roman' culinary taste, and was not the continuation of an earlier Iron Age tradition (Dobney 2001, 38).

Along with other exceptional features of the site, including the unusually high incidence of pig and domestic fowl (Albarella this volume; Bryant this volume), the Spanish mackerel bones from Late Iron Age deposits at Skeleton Green evidently indicate pre-conquest Roman/Mediterranean contact, and the probable adoption of aspects of high-status Roman culinary tastes. This conclusion helps to explain the somewhat anomalous status of the fish bone assemblage compared to the vast majority of Iron Age sites.

The other Iron Age sites with fish bone finds exhibit no obvious patterns, although given the small sample size, this was not particularly to be expected. Only two

were associated with significant expanses of water: Rookery Hill, Bishopstone, overlooks the English Channel and the estuary of the River Ouse, whilst Wardy Hill, Coveney, occupies a prominent spur on the north side of the Isle of Ely, dominating a former marsh embayment. Four are hillforts (Aylesbury, Balksbury, Danebury, Maiden Castle); one an extensive open settlement (Dragonby); and the rest smaller, enclosed and/or open settlements (Bishopstone, Gussage All Saints, Wardy Hill, Wavendon Gate, and Winnall Down). The hillforts and Winnall Down were occupied primarily in the Early and Middle Iron Age, whereas Dragonby and Wavendon Gate – like Skeleton Green – were Later Iron Age foundations. The other three sites span both the earlier and later parts of the period. None of these other sites have yielded continental imports on anything like the scale of Skeleton Green.

With regard to the Roman period, it is noteworthy that where there is evidence for the increasing development of mainly freshwater fisheries, with some utilisation of estuarine and inshore marine species, this seems to be associated more with high-status settlements. In contrast, the pattern of fish consumption at indigenous Romano-British settlements, not heavily influenced by Roman traditions, was very similar to that of their Iron Age counterparts (Dobney 2001).

Belgium: a lost heritage

The Iron Age zooarchaeological record for Belgium is very poor (Ervynck 1994), the result of hostile preservation conditions at many sites, particularly within the area of sandy soils (i.e. inland Flanders and the Campine area). Decalcified loess soils, occurring in areas such as Brabant, also form environments that are not conducive for bone survival. In contrast, one often finds Roman and medieval sites in these same regions that do contain significant numbers of animal remains. This pattern cannot be explained by differences in chronology alone, but must be related to the fact that Roman and medieval sites often have deeper and more elaborate structures than their Iron Age predecessors; equally, on sites of these periods, fragments of limestone and mortar are present in most archaeological deposits, neutralising percolating, acid rainwater. The Iron Age sites have no stone buildings and often no deep refuse pits, and are typically devoid of animal bones. As in England, inadequate recovery techniques have also been a characteristic of excavations on protohistoric sites in Belgium (*ibid.*); sieving was seldom practised and hand-collection performed in a non-systematic manner. Consequently, fish bones may have been consistently overlooked on many earlier excavations.

Despite the poverty of the zooarchaeological record for Belgium, it is generally assumed that people fished inland waters during the Late Iron Age. They certainly did so at earlier periods. This is proven by finds from four locations: a special activity site of the Early Neolithic *Swifterbant* culture excavated in northern Flanders (Van Neer *et al.* 2001); a Neolithic site at Oudenaarde, on the River Schelde (Van Neer, unpublished data); a number of prehistoric caves in the Ardennes (Van Neer 1999); and a *Linearbandkeramik* site at Liège (Desse 1983). In contrast, the remains of freshwater fish are mostly absent from the often rich archaeozoological record of Belgian Gallo-Roman sites. However, exceptions are found at the Veemarkt site in Tongeren, and at Namur, where in both cases a large number of very small freshwater fish have been found, assemblages of which the possible culinary meaning remains obscure (Vanderhoeven *et al.* 1993; Van Neer and Ervynck 1994; 2004).

During a large ritual banquet held at the temple of Mithras at Tienen, a few freshwater fishes were consumed (Lentacker *et al.* 2004); they were also prepared for a meal at one of the rich town houses in Tongeren (Van Neer and Ervynck, unpublished data). In general, these few examples from clearly 'Romanised' contexts seem to be no more than exceptions to the rule. Of course, the consumption patterns found at Gallo-Roman sites were basically part of an autochthonous (Iron Age) tradition, only slightly changed by southern European, Roman influence. Thus, if preservation conditions are not responsible for the pattern found, the consumption of freshwater fish appears not to have been a very important part of the food economy of the indigenous people living in northern Gaul.

With regard to the exploitation of the sea, the Belgian archaeological record also provides little information, simply because all protohistoric coastal settlements have vanished due to rising sea level during the Holocene (see Thoen 1987, 104–5). The Late Iron Age coastline is situated some 5 km from the present day coast and the only Iron Age economic activity that can be traced along the coast is salt production (*ibid.*, 50–3; De Ceunynck and Termote 1987), but there is no indication for fish having been exploited at these sites. At inland Iron Age sites, marine fish are completely absent (Ervynck *et al.* 2004), a pattern that could be linked to poor preservation and inadequate recovery methods, but could also reflect the absence of a trade in food products between the coast and inland sites.

One Late Iron Age site in the Benelux area which does possess evidence for the import of marine fish is the *oppidum* on the Titelberg in Luxembourg, where the remains of albacore tuna (*Thunnus alalunga*) have been found in a context dating to the first century BC (Desse-Berset 1993). This cannot, however, be seen as evidence of a specific focus on marine products within Iron Age society, but more likely reflects a trade in culinary luxuries, associated with Roman or Mediterranean cultural influence on the Iron Age elite in northern Gaul. In this respect, the Titelberg can be directly compared to the important Late Iron Age trading settlement at Skeleton Green, discussed above.

Marine fish are also almost completely absent from inland Gallo-Roman sites. The exceptions are a single find of a flatfish bone from Nevele (Ervynck *et al.* 1997); some more flatfish remains excavated at Tournai (Lentacker *et al.* forthcoming); and the common presence of salted products imported from southern Europe (*garum* and *salsamenta*) (Van Neer and Ervynck 2004), and of the remains of a local variety of fish sauce produced along the North Sea coast (Van Neer and Lentacker 1994). The local manufacture of fish sauce only appears to begin during the second century AD (Van Neer and Ervynck 2004) and thus cannot be regarded as the continuation of a previously established Iron Age tradition. The limited archaeological evidence does not indicate that Iron Age salt factories produced fish sauce and, to date, no Gallo-Roman North Sea fish sauce production sites have been found.

It must not however be forgotten that, as with the protohistoric coast, the Roman beach and dune belt have disappeared into the sea (Thoen 1987, 104–5), hampering all investigations of economic activities in coastal settlements. At the present day coastal sites of De Panne, Raversijde, Bredene, Wenduine, Blankenberge, and Zeebrugge, traces of Roman activity have been found, with some of these sites being described as salt production centres (Thoen 1987), but animal remains from these sites are, unfortunately, rare. At De Panne, a single fish bone (identified as from a ray, Rajidae sp.) was found (*ibid.*, 67), whilst amongst the finds from Bredene, only one skeletal element of a gadid (Gadidae sp.) was recognised (Peters 1987). It remains possible that intensive fishing was practised off the Flemish coast during Roman times but so far archaeological evidence is lacking.

The previous remarks also hold for marine fish, but the situation may perhaps be slightly different for molluscs. Fragments of mussel (*Mytilus edulis*) and oyster (*Ostrea edulis*) shells have been found at a number of inland Gallo-Roman sites (e.g. Vanderhoeven *et al.* 1992; Van Impe *et al.* forthcoming), which may indicate a link between the gathering of shellfish and inland trade. This does not however prove that a similar pattern existed in the preceding period. The interest in molluscs may have been another 'Roman' addition to the consumption pattern at Gallo-Roman sites, not an indigenous trait.

The Netherlands: subsistence along the coast

In contrast to Belgium, a certain number of Iron Age coastal sites where animal remains are preserved have been found in the Netherlands. They show that marine fish were caught, at least by line fishing but possibly in open waters, and consumed as part of the subsistence strategy of some Late Iron Age groups. For example, bones of cod (*Gadus morhua*) have been found in the Iron Age occupation phase at Velsen-Hoogovens (Therkorn 1984), at Leiden-Stevenshofjespolder (IJzereef *et al.* 1992), and at Midden-Delfland-Foppenpolder (Van Dijk 1992). Bones of haddock (*Melanogrammus aeglefinus*) have also been found, but only in the Late Iron Age to Roman occupation phase at Velsen-Hoogovens (Therkorn 1984).

Strangely enough, no flatfish remains – plaice, dab (*Limanda limanda*), and flounder – have yet been found (e.g. IJzereef *et al.* 1992), although these species can easily be fished in coastal waters. The absence of herring bones (*Clupea harengus*) is perhaps explained by the lack of floating net technology, which was apparently not introduced until around – or shortly before – AD 1000 in Flanders and northern England (Jones 1981; Ervynck *et al.* 2004). In general, the absence of evidence for the capture of smaller species, such as whiting (*Merlangius merlangus*) or herring, is difficult to evaluate, since once again, systematic sampling and recovery methods were not generally employed at the sites discussed (IJzereef *et al.* 1992).

The evidence from coastal Iron Age sites in the Netherlands can be better assessed through comparison with the fish remains from Neolithic sites. Indeed, a number of Dutch sites of this period show a remarkable variety of marine taxa. At Hoogwoud-Mienakker, for example, thin-lipped grey mullet (*Liza ramada*), turbot (*Scophthalmus maximus*), plaice, flounder, thornback ray (*Raja clavata*), cod, whiting, haddock, grey gurnard (*Eutrigla gurnardus*), and bass (*Dicentrarchus labrax*) were all found (Beerenhout 1991). The particularly abundant remains of mature haddock imply that fishing was also practised in deeper waters (Beerenhout 1994a; Lauwerier 2001), although we should bear in mind that the ecological characteristics of the original North Sea haddock population were different, or at least more variable, compared to the situation today (Beerenhout 1994a; De Vries 2001), so it is possible that, in prehistoric times, haddock occurred closer to the coast.

Other Neolithic sites with large numbers of marine fish bones (albeit with a lower species variety), are Winkel-Zeewijk (De Vries 2001), Aartswoud-Braakweg (Gehasse 2001), Kolhorn-Waardpolder (Brinkhuizen 1979), and Voorschoten-De Donk (Deckers 1991). Clearly, the exploitation of marine waters had already begun long before the Iron Age; indeed, it appears that the Neolithic population of the Netherlands explored open waters more than the Iron Age inhabitants.

In Roman times, marine fishing appears to have continued. The harbour site of Velsen yielded a wide range of species, including haddock (Brinkhuizen 1989; Beerenhout 1994b), and marine fish have also been found at Assendelver-Polders 'site F' (IJzereef *et al.* 1992), Castricum-Oosterbuurt (Lauwerier and Laarman 1999), Schagen-Witte, Paal III (Zeiler 1996), 's Gravenhage-Scheveningseweg (Carmiggelt *et al.* 1998), and Valkenburg-Marktveld (Gehasse 1997). All these sites are located close to the coast and thus cannot be taken as evidence of large-scale trade in North Sea products.

There is no evidence that the marine fish caught by the inhabitants of the Iron Age coastal sites was traded inland. There are, however, plentiful remains of freshwater fish from inland settlements, which prove that the catch in inland waters was rewarding. Due no doubt partly to its large, firmly-built bony skeletal elements, sturgeon (*Acipenser sturio*) is attested at several sites (IJzereef *et al.* 1992), but there is also evidence for the consumption of eel and cyprinids, for example, at Kesteren-De Woerd (Zeiler 2001). This pattern continued into the Gallo-Roman period, for example at sites such as Assendelver-Polders, 's Gravenhage, Valkenburg, and Velsen, as previously mentioned. Additional examples of Roman sites with freshwater fish remains are Nijmegen (Lauwerier 1988), Houten (Laarman 1996), and Leiden-Roomburg (Robeerst 2000). This apparent consumption of freshwater fish at sites in the Netherlands appears to contrast strikingly with the picture for Belgium.

Taphonomy and recovery, ecology or ideology?

On the basis of the evidence outlined above, a number of possible conclusions can be drawn. Firstly, during the Iron Age the exploitation of marine fish may have been an important economic activity for coastal settlements. This is suggested by the data from the Netherlands, but owing to the limitations of the archaeological and zooarchaeological record cannot be readily corroborated or contradicted by data from Belgium or England. In the case of freshwater fish, information is again lacking for Belgium, but is available for England and the Netherlands. In England, it seems that Iron Age interest in freshwater fish was extremely low, and that this has little to do with the vagaries of preservation and/or sampling and recovery, whereas in the Netherlands, there is plentiful evidence for their consumption at inland settlements.

In Roman times, freshwater fish consumption appears to have increased in inland England, and to have remained significant in the Netherlands. Roman sites in Belgium display no evidence, however, for exploitation of freshwater resources, apart for some puzzling contexts which contained only very small freshwater fishes, and the remains of two rich, 'Romanised' banquets. This implies that, in Belgium, fish consumption was equally negligible during the Iron Age. Where fish consumption seems to increase in Roman times, it appears to be in 'Romanised' contexts.

The overall conclusion must be that fishing and the eating of fish (both freshwater and marine) played little or no part in the lives of Iron Age peoples from England and the southern Low Countries (Belgium), in contrast to the Netherlands, where a more significant role for aquatic resources is implied. In fact, this division between the northern and the southern halves of the Low Countries may well be mirrored in the British Isles. Although an overview of the archaeozoological record for Scotland was beyond the scope of this paper, a relatively recent review of the north-eastern Scottish mainland, Orkney, and Shetland (Barrett *et al.* 1999) indicates that marine fisheries have always been important, from Neolithic times onward. It should, however, be noted that all the sites discussed in that review are located along the coasts.

The main challenge is now to explain the patterns highlighted. They certainly cannot be attributed to particular differences in ecological conditions between, on the one hand, Belgium and England, and, on the other hand, the Netherlands. There is little doubt that fish would have been plentiful in the rivers, estuaries, and shallow inshore coastal waters of all these areas during the Iron Age and Roman periods. However, Grant (1984, 513) notes in her discussion of the virtual absence of fish remains from the site of Danebury, 'the availability of a resource does not necessarily imply that the resource was exploited.' An example of this, from a very different part of the world, can be found in the case of the Tasman Aborigines, who at the time of European contact, were reported to have viewed the consumption of fish as abhorrent, despite the fact that they were surrounded by plentiful supplies, and even exploited a variety of other marine resources such as crustaceans (Simoons 1994, 253).

Food avoidances of all kinds are still widespread throughout the world today and must also have occurred in the past. Fish eating is – and always has been – one of the more common taboos, although the reasons why this should be so in different parts of the world are far from clear. In his survey of food taboos past and present, Simoons (1994) suggests that one possible reason for avoiding fish is the medium in which they live. Many groups and cultures considered water sacred. The Zuni and Hopi of the American South-West, along with the Navajo and Apache, avoided eating fish and all water creatures for this reason, whilst the Yezidis of Kurdistan regard all fountains and springs as sacred and regarded fish as blessed because of their association with these waters.

Numerous ponds or other bodies of water containing inviolable fish can still be found today in Turkey, Syria, and the Lebanon (Simoons 1994, 270). In classical accounts from Asia, fish were associated with Assyrian deities of fertility and life-giving water, and people bathed in ponds containing sacred fish (*ibid.* 269). Xenophon writes of a river in Syria where the fish are large and quite tame and considered by people as deities not to be harmed (*Anabasis* 1. 4. 9). These ancient south-west Asian deities (or versions of them) may have continued to have had cult followings in the Hellenistic period and even under the Roman empire, resulting in fish consumption being prohibited during sacred rites and at particular times of the year (Simoons 1994, 272).

Another major factor in fish avoidance appears to be

the fact that, in some quarters, they are considered to be 'unclean' or 'impure' creatures. This is most common, today, in arid and semi-arid parts of Africa and Asia and amongst pastoralist peoples, who may have passed on the taboo to some agricultural communities (Simoons 1994, 296). Fish-avoiding groups often view those who eat or even catch fish to be of poor or lower status, and this is often reflected in a difference between the caste or class of these individuals.

Returning to Iron Age England, there certainly appears to be clear evidence placing animals beyond the mere functional and economic sphere of human interaction into one of social and even symbolic value. Several researchers have highlighted the presence and possible significance of articulated and semi-articulated domestic animal remains in Iron Age deposits, usually in ditches and pits, and current consensus is that many do indeed represent some form of ritual activity. Grant (1984; 1991), in her analysis of these so-called 'special deposits' from Danebury, discussed a possible hierarchy of ritual activities on the basis of differential deposition of various domestic animal species and parts of the skeleton. Subsequently, in his detailed study of waste disposal at Iron Age sites in Wessex, Hill (1995) observed that hunting and fishing appeared to have played only a minor role in the subsistence economy. However, where the remains of wild mammals and birds were deposited on sites, they often appear to have been treated differently from the majority of recovered bone (mainly of domestic animals); indeed, 'the smaller a species' contribution to the overall total number of bone fragments, the more marked its *treatment*' in deposits (*ibid.*, 104, our emphasis). By implication, although of little calorific value, wild animals were probably of considerable social and symbolic value, and thus may provide important evidence of 'past emic ethnobiological classifications' (*ibid.*, 65).

As a result of his contextual analysis, Hill (1995, 104) concluded that a culture/nature division was of central importance in Iron Age Wessex and that dominant cultural symbols were articulated through the practices of ritual deposition and special treatment of elements of the wild fauna. The absence of wild resources from Iron Age diets was not due to a lack of time to hunt, or the availability of prey; instead they were probably surrounded by prohibitions, so that their occasional hunting, the use of their feathers and skins, and their consumption were all probably heavily regulated or proscribed. The almost complete absence of fish remains from the English sites surveyed in this paper can thus be taken to suggest that their capture and consumption was indeed forbidden, a result of their symbolic or possibly even unclean status. Hill (*ibid.*, 105) briefly noted the absence of otter remains from his sites in Wessex, postulating that their absence (along with fish) perhaps indicated that all creatures that lived in water were proscribed in Iron Age classifications.

In the context of the present review, we have noted that marine fishing was important in Neolithic times in the Netherlands. No information is available for Belgium, but in Britain stable isotope data from human skeletons reveal that a sharp shift in diet occurred at the onset of the Neolithic, consisting of a sudden lack of marine foods (Richards and Hedges 1999; Thomas 2003). Could this have been the origin of a dietary pattern that persisted into the Iron Age? Strikingly, Thomas notes that such a sudden shift in diet could have been accompanied by a cultural prohibition (*ibid.*, 70). Perhaps a whole new view on the aquatic environment of the earth had become widely accepted, linking water with the realm of death. The deposition of the dead in rivers could be another sign of this concept (Bradley and Gordon 1988; Parker Pearson 2000). Alternatively, fish avoidance could have been considered part of a new cultural identity, i.e. of 'being Neolithic' (Thomas 2003, 70). In that case, too, it must be investigated whether this cultural phenomenon has a link with fish avoidance during the English Iron Age.

Conclusion

From this brief review it appears that the absence of fish on many Iron Age sites in England and perhaps also across the North Sea in Belgium is a real phenomenon, not merely an artefact of various taphonomic processes. We have argued that the probable reasons for this pattern lie beyond the realm of mere economic and subsistence practices, instead perhaps providing evidence of how certain Iron Age communities perceived and classified the natural world. Fish, it would seem, were hardly exploited (despite the fact that certain species would have been both plentiful and relatively easy to catch), and we can but conclude that they were for some reason proscribed within Iron Age society.

Whether fish were perceived as unclean, or in some way divine, of course remains a moot point, but it is tempting to pursue the answer through what we understand about prehistoric people's views of water or wet places (see also Willis this volume). Interestingly, the situation appears to have differed in the Netherlands, where Iron Age coastal and inland sites appear to have exploited a wider range of both freshwater and marine fish species. Does this mean that the ideological explanations proposed for Belgium and England were not valid there? The present contribution is only the beginning of the discussion.

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Appendix: English Iron Age sites used in this study.

Indicated are the site locations, dating, broad site classification, presence (yes/no) of fish remains, whether sieving was applied (yes/no), and the relevant references in the literature.

Site Name	*Date*	*Site Type*	*Fish bones?*	*Sieved?*	*Reference*
Abingdon, Wyndyke Furlong	Early–Mid Iron Age	open settlement	n	n	Wilson 1999
Andover, Old Down Farm	Early–Late Iron Age	enclosed settlement	n	n	Maltby 1981
Appleford	Early–Mid Iron Age	open settlement	n	n	Wilson 1980
Aslockton	Iron Age	defended settlement	n	n	Hamshaw-Thomas 1992
Aylesbury, Coldharbour Farm	Mid Iron Age	open settlement	n	n	Sadler 1990
Aylesbury, County Museum	Iron Age	hillfort?	y	n	Sadler 1998
Aylesbury, George Street	Iron Age	hillfort?	n	n	Jones 1983
Baldock	Late Iron Age	open settlement	n	n	Chaplin and McCormick 1986
Balksbury Camp	Early–Late Iron Age	hillfort	y	y	Maltby 1995
Bancroft (mausoleum)	Iron Age/Roman	settlement	n	n	Holmes and Rielly 1994
Barholm	Iron Age	open settlement	n	n	Harman 1993a
Barley, Aldwick	Iron Age	open settlement	n	n	Cra'ster 1961
Barnham 1	Iron Age	enclosure	n	n	Martin 1993
Barnham 2	Iron Age	enclosure	n	n	Martin 1993
Barrington, Edix Hill	Late Iron Age	open settlement	n	n	Davis 1995
Basingstoke, Ructstalls Hill	Early–Mid Iron Age	enclosed settlement	n	y	Gregory 1978
Beckford	Late Iron Age	enclosure complex	n	n	Gilmore 1970–72
Bierton	Late Iron Age	cluster of pits and ditches	n	n	G. Jones 1988
Bishopstone	Mid–Late Iron Age	enclosed settlement	y	n	Gebbels 1977
Blackthorn	Late Iron Age	enclosed settlement	n	n	Orr 1974
Bledlow	Iron Age	farmstead	n	n	Fraser 1946
Boreham, Bulls Lodge Farm	Iron Age/Roman	farmstead	n	n	Bedwin 1993
Brancaster	Iron Age	settlement	n	y	Jones *et al.* 1985
Brassington, Harborough Rocks	Early Iron Age	open settlement	n	n	Bishop 1991
Breedon-on-the-Hill	Iron Age	hillfort	n	n	Jackson 1950; Higgs 1964
Brigg	Bronze Age/Iron Age transition	deposit near trackway	n	n	Jope 1958
Brigstock	Iron Age	enclosed settlement	n	n	Field 1983
Burgh	Late Iron Age	enclosed settlement	n	n	Jones *et al.* 1987; 1988
Burton Fleming	Iron Age	burial, cemetery	n	n	Legge 1991
Catcote	Late Iron Age/Roman	open settlement	n	n	Hodgson 1968
Cherry Hinton, War Ditches	Iron Age	hillfort	n	n	Phillipson 1963
Chevington	Late Iron Age	settlement	n	y	Stallibrass 1998
Colchester	Late Iron Age	*oppidum*	n	n	Bate 1947; Jackson 1947
Costa Beck	Iron Age	settlement	n	n?	Hayes 1988
Cottingham, Creyke Beck	Iron Age	open settlement	n	y	Stallibrass 1997
Cowbit Wash	Iron Age	industrial	n	y	Albarella 2001
Coxhoe, West House	Iron Age	enclosure	n	n?	Rackham 1982
Croft Ambrey	Iron Age	hillfort	n	n	Whitehouse and Whitehouse 1974
Culworth, Berry Hill Close	Mid Iron Age	enclosure	n	n	Davis 1993–94

Site Name	*Date*	*Site Type*	*Fish bones?*	*Sieved?*	*Reference*
Danebury	Early–Late Iron Age	hillfort	y	n	Grant 1984; 1991
Dod Law West	Iron Age	small hillfort	n	n?	Smith 1990
Dragonby	Late Iron Age	open settlement	y	n	Harman 1996; Jones 1996
Droitwich, Friar Street	Iron Age	industrial	n	n	Locker 1992
Droitwich, Old Bowling Green	Late Iron Age	industrial	n	n	Locker 1992
Earls Barton, Clay Lane	Late Iron Age	enclosure	n	n	Jones, Levitan *et al.* 1985
Easingwold by-pass	Mid-Late Iron Age	open settlement	n	y	Carrott *et al.* 1993
Crankleys Lane, Edmundsoles	Late Iron Age	cluster of pits and ditches	n	n	Miller and Miller 1981
Enderby, Grove Farm	Mid–Late Iron Age	farm	n	y	Gouldwell 1992
Gamston	Iron Age	open/enclosed settlement	n	n	Levitan 1992
Garton Slack	Iron Age	cluster of pits and ditches	n	n	Noddle 1979
Gorhambury	Late Iron Age	enclosure	n	y	Locker 1990
Great Chesterford, Ickleton Road	Late Iron Age	burial, cemetery	n	n	Smoothy 1990
Grimthorpe	Iron Age	hillfort	n	n	Jarman *et al.* 1968
Gussage All Saints	Early–Late Iron Age	enclosed settlement	y	y	Harcourt 1979
Haddenham, Upper Delphs,	Mid Iron Age	enclosure	n	y	Evans and Serjeantson 1988
Hardingstone	Iron Age	enclosure/industrial	n	n	Gilmore 1969
Hardwick, Mingies Ditch	Mid–Late Iron Age	enclosed settlement	n	y	Wilson 1993
Harlow	Late Iron Age	temple	n	n	Legge and Dorrington 1985
Hartigans	Iron Age	open settlement	n	n	Burnett 1993
Hasholme Logboat	Late Iron Age	boat	n	n?	Stallibrass 1987
Hawks Hill	Iron Age	banjo	n	n	Carter *et al.* 1965
Hayton Fort	Iron Age	settlement	n	n	Monk 1978
Ivinghoe Beacon	Early Iron Age	hillfort	n	n	Westley 1970
Kemerton, Aston Mill Farm	Mid Iron Age	enclosure	n	n	Lovett 1990
Kennel Hall Knowe	Late Iron Age	enclosure	n	n?	Rackham 1978
Kirkburn	Mid Iron Age	cemetery	n	n	Legge 1991
Letchworth, Blackhorse Road	Early–Mid Iron Age	enclosed settlement	n	n	Legge *et al.* 1988
Leven-Brandesburton	Iron Age	settlement	n	y	Hall *et al.* 1994
Lincoln	Late Iron Age	settlement	n	n	Scott 1988
Little Sombourne	Iron Age	settlement	n	y	Locker 1979
Little Waltham	Iron Age	open settlement	n	n	Gebbels 1978
Longthorpe II	Iron Age	settlement	n	n	King 1987
Maiden Castle	Early–Late Iron Age	hillfort	y	y	Armour-Chelu 1991
Market Deeping, Outgang Road	Mid–Late Iron Age	open settlement	n	y	Albarella 1997a
Meare Village East	Late Iron Age	open settlement	n	n	Backway 1986; Levine 1986
Meare Village West	Late Iron Age	open settlement	n	n	Bailey *et al.* 1981
Melton	Late Iron Age/Roman	ladder settlement	n	y	Gidney 1994a
Micheldever Wood	Mid–Late Iron Age	banjo	n	y	Coy 1987
Nazeingbury	Late Iron Age	farmstead	n	n	Huggins 1978
Northampton, Moulton Park	Late Iron Age	enclosure	n	n	Orr 1974
North Stifford, Ardale School	Mid–Late Iron Age	enclosure	n	n	Luff 1988

Site Name	*Date*	*Site Type*	*Fish bones?*	*Sieved?*	*Reference*
Oakham, Stamford Road	Iron Age	cluster of pits and ditches	n	n	Hammon 1998
Pennyland	Early/Mid Iron Age	open settlement	n	n	Ashdown 1993; Holmes 1993
Puckeridge–Braughing, Bath House	Late Iron Age	nucleated settlement	n	n	Ashdown and Evans 1977
Puckeridge–Braughing, Ermine Street	Late Iron Age–Early Roman	nucleated settlement	n	n	Fifield 1988
Puckeridge–Braughing, Skeleton Green	Late Iron Age	nucleated settlement	y	n	Ashdown 1981; Ashdown and Evans 1981; Wheeler 1981
Puckeridge–Braughing, Station Road	Late Iron Age	nucleated settlement	n	n	Ashdown 1979; Croft 1979
Rainham Moor Hall Farm	Late Iron Age	settlement	n	n	Locker 1985
Rainsborough	Early Iron Age	hillfort	n	n	Banks 1967
Ravenstone	Iron Age	enclosure	n	n	Millard 1970
Rock Castle	Mid–Late Iron Age	enclosed settlement	n	n	Gidney 1994b
Roxby	Iron Age	open settlement	n	n	Inman *et al.* 1985
Rudston	Iron Age	burial, cemetery	n	n	Legge 1991
St Albans, King Harry Lane	Late Iron Age–Early Roman	cemetery	n	n	Davis 1989
Scole-Dickleburgh	Early–Mid Iron Age	settlement	n	y	Baker 1998
Slonk Hill	Early–Mid Iron Age	open settlement	n	n	Sheppard 1978
Stanwick, The Tofts	Late Iron Age–Early Roman	*oppidum*	n	n	Rackham forthcoming
Stifford Clays	Mid–Late Iron Age	enclosure	n	n	Luff 1988
Sutton Walls	Iron Age	enclosure	n	n	Cornwall and Bennet-Clark 1953
Tallington	Early Iron Age	enclosure	n	n	Harman 1993b
Thorpe Thewles	Iron Age	enclosed/open settlement	n	n	Rackham 1987
Thundridge, Moles Farm	Early Iron Age	cluster of pits and ditches	n	n	Ashdown and Merlen 1970
Tort Hill West	Late Iron Age	open settlement	n	n	Albarella 1997b
Trumpington	Iron Age	enclosure	n	n	Davidson and Curtis 1973
Twywell	Early Iron Age	open settlement	n	n	Harcourt 1975
Uley	Iron Age	temple	n	y	Levitan 1983
Wakerley	Iron Age	enclosure	n	n	Jones 1978
Wardy Hill, Coveney	Late Iron Age	enclosure	y	n	Davis 2003
Wavendon Gate	Iron Age	open/enclosed settlement	y	y	Dobney and Jaques 1996
Wendens Ambo	Iron Age	Farm	n	n	Halstead 1982
West Harling	Early Iron Age	enclosure	n	n	Clarke and Fell 1953
West Stow	Iron Age	open settlement	n	n	Crabtree 1990
Whitwell	Iron Age	open settlement	n	n	Harman 1981
Wighton	Iron Age/Roman	enclosure	n	n	Lawrence 1986
Willington, Plantation Quarry	Iron Age	enclosure	n	n	Clark and Hutchins 1996
Winlklebury Camp	Early–Mid Iron Age	hillfort	n	y	Jones 1977
Winnall Down	Early–Mid Iron Age	enclosed/open settlement	y	n?	Maltby 1985

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