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AUTHOR J. COY

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Woodland Mammals in Wessex - the Archaeological Evidence

Jennie Coy, Faunal Remains Project, University of Southampton

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This paper aims to complement the plant and invertebrate evidence in this volume by giving some account of the archaeological evidence for woodland mammals in Central Southern England. It also reviews some current thinking on post-glacial exploitation of the larger mammals, although red deer, *Cervus elaphus*, is dealt with elsewhere in this volume (Noddle page 000).

Knowledge of faunal exploitation for the Palaeolithic of Wessex usually depends upon evidence other than bones or generalizes from evidence from the rest of Europe. Shackley suggests for Hampshire that late Upper Palaeolithic game would have been horse, *Equus* sp.; reindeer, *Rangifer tarandus*; and giant deer, *Megaloceros giganteus*, and that open air sites of this period , such as Hengistbury Head, could have served as base camps to exploit migrating wild horses and reindeer in Spring and Autumn (Shackley 1981,8).

Grigson in surveying cave deposits tentatively suggests *Megaloceros*, reindeer, horse, and *Bison* as the true Older Dryas fauna with *Megaloceros*, reindeer, and possibly red deer, *Cervus elaphus*; roe deer, *Capreolus capreolus*; and pig, *Sus scrofa* in the succeeding Allerød. Younger Dryas evidence is more difficult but horse and reindeer seem the only likely ungulates (Grigson 1978a,48).

A consideration of this fauna for what were probably open, unwooded conditions is essential to any understanding of the later exploitation by man of woodland in the same areas. The Pleistocene period involved an enormous complexity of climatic and vegetational change much of which is still very difficult to sort out. The woodland species which survived in Europe must have been, during that period, subjected to intensive selection by what was often extremely rapid change.

The ecology of some mammals may well have altered considerably during the Pleistocene as species adapted to a variety of biotopes (Stuart 1974,259) and this includes the woodland species of the interglacials. Specific identification of Pleistocene mammalian remains is still too often inadequate. As Grigson suggests, more careful reworking of, for example, *Bos* and *Bison* remains, might clarify the picture and incidentally lead to more reliable evidence of size change within species during the Pleistocene. If size change was a common phenomenon during the Pleistocene some species may have been selected for high ability to achieve the most economic size either by the individual animal's being more susceptible to external factors during its maturation than would otherwise be the case or by more rapid alteration of the whole ecotype during intensive natural selection. Not only climate but vegetation changes, competition for food with other species, energy expenditure in migration, limitation of gene pools in isolation, and numerous other factors, could have caused alteration of size within species. Behavioural and territorial changes may have been linked with a lesser or greater degree of sexual dimorphism.

This Pleistocene adaptive ferment must to some extent have preadapted some species to the subsequent immense and rapid changes brought about by man.

Evidence for late Palaeolithic and Mesolithic diet shows red deer enjoying a unique place in Wessex as elsewhere. Their remains were found on 95% of the late Palaeolithic and Mesolithic sites in Europe available to Jarman in his analysis (Jarman 1972, 128). Wild boar comes a close second in number of occurrences, with aurochs, <u>Bos primigenius</u>, and roe deer, <u>Capreolus capreolus</u>, frequent finds. Horse is more rarely found. Elk, <u>Alces alces</u>, distribution seems to have retreated from this area by the Preboreal although there are finds dated to the early Mesolithic from Wawcott and Thatcham, Berks. Reindeer had probably disappeared in the South by the Boreal or earlier (Grigson 1978a,50).

Presence and absence statistics are often misleading and even when frequencies of each species are calculated, the weight of the individual species must be taken into consideration for any assessment of diet. For example, Jacobi points out that close analysis (e.g. for Thatcham) suggests that cattle provided most of the meat consumed (Jacobi 1981, 10).

A number of fur-bearing mammals, associated with woodland, such as beaver, <u>Castor fiber</u>; fox, <u>Vulpes vulpes</u>; badger, <u>Meles meles</u>; wildcat, <u>Felis silvestris</u>; marten, <u>Martes</u> sp; and hare, <u>Lepus</u> sp., occur on Mesolithic sites in the South. Some of these are also good to eat.

Any change from an exploitation of grassland to an exploitation of forest would involve man in considerable problems. Hunting mammals in dense forest, even with modern weapons and traps, is never easy. The animals are , first of all, difficult to detect because of the severe limitations of man's own sense of smell and hearing compared with those of the prey. The use of dogs to extend the reach of the human senses would indeed have been a very important adjunct at any period when woodland exploitation was essential; the early domestication of the dog in Northern Europe certainly fits this. Modern hunting in forest for deer and wild boar depends heavily on the carefully organised use of woodland clearings and dogs. Early clearance could therefore sometimes have had a significance for hunting but whether this sort of clearance would have been any greater than that involved in settlement unknowable although cleared areas in use by hunters today in Europe are often several hundred metres across.

Mellaars points out that the biomass of mammals in forested areas would be much less than that of open tundra and grassland and that forest species tend to be less gregarious in their habits than reindeer and horses - leading to a substantially reduced food supply for Mesolithic man as well as a need to pursue animals with significantly different behaviour (Mellaars 1974, 80). This is assuming that we are dealing with the same people. Modern figures for the biomass of forest species, such as deer, low as they are, may give a falsely high figure as they are frequently influenced both by winter feeding (which is a tradition in central European hunting) and the proximity of agricultural land. The numbers of fur-bearers, where these are predators and therefore at the top of the biomass pyramid (Phillipson 1966, 14) would be extremely low, and their skins therefore highly prized, although the comparative ease with which some of the Mustelids can be trapped would partly cancel this out. Beavers and hares might be expected to be of greater significance throughout prehistoric Europe because as well as being edible and fur-bearing they are primary consumers. Any situation where not too swiftly flowing water was bordered by rich woodland could be expected to have supported beavers.

Forests represent a mosaic of zones of different stages of turn-over of trees, wet areas, forest clearings (mediated by fires and ecological factors which can sometimes be the effect of a single species - Remmert 1980,214), and heath. Obviously dense forest is not the only ecosystem available. Mellaars points to the significance of swamps and watering places in Palaeolithic hunting strategies (Mellaars 1974, 56). This could also apply in the Mesolithic, in areas where forests and wetlands were contiguous. The many differen types of woodland available at different stages postglacially - perhap in some areas successively dominated by birch, pine, hazel, and true deciduous forest - would again have led to a correspondingly complex faunal picture which we are nowhere near understanding.

Red deer, *Cervus elaphus*, is a highly adaptable species and would be capable of utilising all kinds of forest and open grassland, although one would expect changes in their life pattern to occur. Modern roe deer, *Capreolus capreolus*, feed maily on broadleaved trees and shrub which form up to 90% of the June/July diet. Hazel forms a very important part of the diet where available and any clearance, especially that associated with subsequent growth of hazel, would especially favour roe. In the early part of the year herbs are eaten to a larger extent. (Hosey 1981, 278). Roe is particularly partial to buds where soft vegetation is unavailable. It also drastically reduces its food intake in Winter. These two factors are related to its being a relatively delicate feeder which cannot exist on low quality browse (Ellenberg 1974, 1978 , quoted in Remmert 1980).

Interaction of wild mammals with mesolithic woodland ecosystems would have been complex. These effects and natural oscillations in animal populations and ecosystems mean that it is often impossible, even today, to be certain that some effects are related to human interference. Some of the species already mentioned can quite 'naturall have considerable effects on the ecosystems in which they live. The greater species diversity of some of these forests, compared with open conditions or single species stands, may in fact have made them extremely vulnerable except under constant favourable conditions. Major alterations in woodland ecosystems are often blamed on man where a modern ecologist might have difficulty proving his case.

Any breaks in woodland cover, especially those associated with wetlands, rivers, or providing a rich marginal interface with another ecosystem could only have increased the possibilities for the exploitation of woodland species. There has been much discussion on the extent of clearance and its causes. Evans (1975,96) provides a useful outline of the work of Simmons and others on Late Boreal to Atlantic clearance and Jacobi discusses hazel in some detail (Jacobi 1978,83). Increase in hazel would certainly benefit roe deer. Woodland species in Central European forest today make good use of 'forest lawns' and of river banks and woodland edge where increased light allows colonisation by shrubs and herbs and wild boar root after small mammals and frogs. Any control or extension of such areas by hunters could increase mammal populations, make the animals easier to catch, and increase man/mammal contact which could ultimately result in domestication. Such woodland management, even on a small scale, would enormously increase leisure as woodland hunting would have been extremely time-consuming. As improvement of comfort seems to be a basic human instinct, this, rather than population pressure, could have been the major pressure altering human behaviour at this time.

Break up of continuous forest stand would obviously provide a higher proportion of forest edge.

Remmert makes the point that man-influenced, highly developed, open forest as seen in the medieval period would provide a more regular acorn and beechnut crop and that this is crucial to the Winter survival of roe deer and pigs (Remmert 1981,146).

Just as clearance might suggest management so the ages of the animals killed might give us evidence of the management of animals. Ryder has recently pointed out that Jarman's speculative development of the idea of incipient domestication first put forward with the reindeer by Zeuner could merely indicate the management that hunters would sensibly expend on a natural resource (Zeuner 1963, 48; Jarman 1972, 132; Ryder 1981, 304). Such control by hunters reached its climax in Britain in the management of the royal game forests of the medieval period (Owen, in press). Jarman suggests that early domestic sheep might have been managed in the same way, that is with young animals and males being selectively culled. Sheep data from Southern Britain is inadequate as yet from the early periods when this might apply but analysis of some larger Iron Age samples still shows the large peak of young animals and a later peak after the third molar is in wear. But this has similarities to a natural mortality pattern (Maltby, 1981,172).

Any form of winter feeding, e.g. by cutting down browse for deer, would increase their numbers, preserve other trees from damage by bark stripping, and perhaps become the origin of pollarding.

Patterns of Neolithic woodland clearance and subsequent regeneration or otherwise are discussed elsewhere in this volume and Neolithic activity in Hampshire by Fasham and Schadla Hall (1981, 26). Exploitation of red deer, especially for antler, continued in the Neolithic and subsequently in Wessex as shown by the bone, antler picks, and worked antlers found in settlements. The discrepancy between the large numbers of antler tools (frequently from shed antlers) and the relative scarcity of postcranial bones of red deer has recently been discussed by Legge in connection with the antler tools from Grimes Graves. Legge concludes that, making allowance for the duration of the mining work, a standing population of only 120 deer would in fact be required (Legge 1981, 100). Neolithic roe deer antlers and bones are found in small numbers.

It is usually assumed that the numbers of deer would have rapidly decreased after the development of settled agriculture and associated forest clearance. But as shown above there could have been great advantages in clearance before settled agriculture.

Frequently overhunting is given as a reason for a decrease in deer numbers and a contributory cause of the spread of agriculture. This is a difficult area. Food plays a decisive rôle in establishing the density of animal populations. Deer populations can be kept artificially high by feeding and red and roe deer and, presumably, aurochs and boar too, would probably benefit not only from clearances made for agricultural purposes but from the increase in diversity from agricultural produce itself. Remmert (1980,156) shows that farms and gardens are rich habitats compared with most natural ones, giving the highest figure, for example, for breeding bird density over all habitats studied.

Roe deer especially have responded positively to the development of agriculture in Europe and are in some areas far less dependent on woodland than before. They can adapt to a wide range of habitat by using their ability to vary their reproductive performance by natural selection (Rowe, personal communication). Wild boar would no doubt travel out of the woodland before dusk as they do today in Central Europe, to feed on forest edge and marshy places and would swiftly adapt to raiding crops. Aurochs we know less about because of their subsequent extinction but if modern cattle are any guide they could have caused havoc in early agricultural experiments. These facts and the extensive clearance in some areas would have brought man into closer contact with these two species and there could have been indigenous domestication in the British Isles. The same could apply to horses, which turn up in small numbers as bones in archaeological deposits throughout. Forest edge is seen by Harris as a favoured area for domestication and cultivation to have begun (Harris 1969, 7).

It is interesting that, although the problems of sex distinction within Bos primigenius and distinction between Bos primigenius and domestic cattle are now much studied, there is still resistance to the idea of indigenous domestication in Britain, especially of cattle. Quite recent papers still suggest introduction of the domestic Neolithic forms by immigrant farmers along with the ideas of cultivation. These theories fit well into an invasionist model; they also pick up the problem of the aurochs as a fierce giant incapable of being tamed (Clutton-Brock 1981,65), but Grigson's detailed work on domestic cattle and aurochs has confirmed and expanded earlier work to show that these two forms are so similar that they form a continuum and should be considered to belong to the same taxon (Grigson 1978).

Size is the main criterion used to determine whether cattle and pigs were likely to have been wild or domestic. This, in isolation, is unsatisfactory and progress towards an understanding of early British domestic animals is slow. We lack large samples from the earliest periods. Grigson found that the differences shown in the skulls of domestic cattle from those of aurochs were often allometric differences linked with sex and size. Domestication features, apart from smaller size, included an increase in variation (for example, greater breadth dimorphism between the sexes), and shorter horns in the bulls. Although the skulls she studied were modern domestic cattle, some of these features can be seen already in the early Neolithic material.

Sheep, an alien species at this period presumably were brought across to the British Isles at some point. They are still somewhat rare on Neolithic Wessex sites. The introduction of sheep could have triggered off a parallel domestication of other species from the indigenous wild populations.

By the Neolithic of Wessex there are therefore then domestic cattle, sheep, and pigs. The evidence for goat is more debatable and this species may have been misidentified in the past because of the goatlike character of some of the bones of early sheep. The relative proportions of the major species in the Neolithic form a popular discussion point. Murray gives them a cultural significance (Murray 1970) but Jarman points to economic changes being geared to environmental conditions (Jarman 1972, 136). Recently, results from some Hampshire Iron Age sites have shown how apparent changes in economy can have a taphonomic explanation (Maltby 1981, 165). An increase in pig exploitation in the Late Neolithic is suggested by Grigson (this volume, page 000). The writer has recently studied material from the Iron Age settlement at Croundwell Farm, Wiltshire, and Roman material from Ower, Dorset, where the very high proportion of pig bones may be associated in each case with local environments favouring pigs.

During the succeeding Bronze and Iron Age periods in Wessex the bones of wild woodland species turn up occasionally. Aurochs seems to disappear in the Bronze Age although the wild boar survived into post-medieval times. Red and roe deer are still represented and their antlers utilised. Cattle size goes down. Legge is of the opinion that most of this decrease in size occurs during the Late Neolithic and Early Bronze Age (Legge 1981, 81).

Can anything be said about woodland mammals from the Neolithic onwards ? Once established, domestic cattle, pigs, and sheep would have a considerable effect on the extent of the woodland itself. Once sheep were present in any numbers they would have a considerable effect on deer, especially roe, which appear to avoid any sheep-grazed areas (Henry 1981, 274). Part of the explanation of domestic cattle size diminution could have been disappearance of woodlands with their possibilities for browse and winter feeding. Large specimens of pig on Iron Age settlements are usually assumed to be domestic (e.g. Harcourt 1979, 152), but judging by size and sculpturing of the bones there are pig bones from many sites of Bronze Age to medieval date which could conceivably be from wild boar and, although this species may have been reintroduced to reinforce the Norman way of hunting, there is the possibility that small numbers survived from the original stocks even in Southern England up to the final extinction in the 17th century AD.

There is still the occasional red and roe deer bone from Iron Age settlements in Wessex and antler is a favoured material for working but most bones are those of domestic animals. This also applies to Saxon urban material from Southampton (Bourdillon and Coy 1980). Red and young roe were exploited to some extent, however, at the more rural Ramsbury, Wiltshire, in the Mid-Saxon period (Coy 1980).

There are a few roe antlers from Ramsbury and Richard Prior of the Game Conservancy reckons that by modern British standards these are poor heads showing what are usually considered to be signs of poor nutrition in the Spring.

There are, however, more extensive collections of red deer bone from Roman villa sites in Wessex than in the preceeding Iron Age. This is especially true of the Isle of Wight villas (Gamble, and Streeter, personal communications). These and the Ramsbury results presumably relate to the proximity of woodlands, as does the survival of beaver to the Mid-Saxon period demonstrated at Ramsbury.

Beaver has a long association with the Kennet valley and would have been difficult to exterminate from such a favourable stronghold. A 944 AD charter refers to an island in the Kennet, near Brimpton, known as Beaver' Island (Peake 1935, 125). Beavers may have survived for longer in the Glastonbury region . The much quoted record of a journey by the Archdeacon of Brecon in 1188 records the presence of this scarce beast in the river Teifi in Wales and suggests that at that time there were none left in England .

There are no records of bear, *Ursus arctos*, later than the Neolithic in Wessex.

Gussage All Saints demonstrates that woodland species like badger, marten, polecat (*Mustela putorius*), and fox were around as they all were in fact until the last century saw the extermination of polecat and marten over large areas of the British Isles (Langley and Yalden 1977). It is difficult to distinguish the bones of cative and large dogs from those of the wolf, *Canis lupus*, and of early domestic cats from wildcat, *Felis silvestris*, so that the later history of these two wild species is difficult to follow. Some results for Wessex are discussed in an earlier paper (Coy 1981, 99). Harcourt hesitantly puts the Gussage cats into the domestic category (Harcourt 1979,154) and the Ramsbury 'wolflike bones' are interpreted as possibly coming from hunting dogs (Coy 1980, 49).

Fallow deer, *Dama dama*, appear to be a post-Norman introduction. Their absence from Saxon Wessex is discussed in more detail for Hamwih (Bourdillon and Coy 1980, 113). This introduction seems to have coincided with an extension of forest for hunting but as fallow are also associated with the setting up of deer parks the presence of bones of fallow in Wessex deposits from the 11th century AD is not necessarily indicative of extensive woodlands, although many deer parks were near forests. Fallow are well-suited to deer park life and may fatten better on poor land than red deer. One great advantage of the species is that they will graze alongside cattle.

In conclusion it remains to stress that the evidence for woodland mammals in Wessex from archaeological sites is still very patchy but growing. Some species, to judge from modern zoological work, are presumably good indicators of woodland but others, notably deer, can adapt to many different types of habitat and to rich and poor woodland environments by the versatility of their reproductive behaviour and physiology. An extreme view of adaptation would be to suggest that pig and cattle were woodland species which successfully adapted to the loss of woodland by becoming domestic.

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